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Chemical Engineering Vocabulary: Bilingual

With German translations Maximilian Lackner



Maximilian Lackner

Chemical Engineering Vocabulary

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Contents

About the book	5
Chemical Engineering Vocabulary	6



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About the book

The **Chemical Engineering Vocabulary** was written for students and young professionals in chemistry, mechanical engineering, chemical engineering and economics, who have to do with chemical engineering in an academic or industrial setting.

All entries come with a sentence, which shows the application and, in addition, provides a piece of relevant and interesting information. In contrast to common dictionaries, this book does not have trivial entries (e.g. filter/Filter, metal/Metall, vacuum/Vakuum, project/Projekt). Only terms that are relevant for work, 2600, were selected.

After studying these terms from the areas of chemistry, engineering and chemical engineering, supplemented by important entries from neighbouring disciplines such as pharmaceutics, economics, law and safety, the reader will have a solid vocabulary at his/her disposal, so that he/she can communicate in all areas of the process industries in a competent way and make use of the scientific and technical literature efficiently.

Note: The second part of this book entitled "**Verfahrenstechnik Wortschatz**" can also be downloaded for free at Bookboon.com.

Chemical Engineering Vocabulary

a.u.	Acronym/Abbreviation referral: see arbitrary units	(sci.)
A/P	Acronym/Abbreviation referral: see accounts payable	(econ.)
A/R	Acronym/Abbreviation referral: see accounts receivable	(econ.)
abrasive	abrasiv; Schleifmittel, das Calcium carbonate can be used as abrasive, for example as "po in toothpaste.	(<i>eng</i> .) blishing agent"
absorbance	Absorbanz, die In contrast to absorption, the absorbance A is directly propo concentration of the absorbing species. A is calculated as $\ln (l_0/2)$ the initial and I the transmitted light intensity, respectively.	
absorption	Absorption, die The absorption of light is often called attenuation and must no with adsorption, an effect at the surface of a solid or liquid. Absorp and gases means that they diffuse into a liquid or solid.	-
abstract	Zusammenfassung, die An abstract is a summary of a scientific piece of work.	(sci.)
AC	Acronym/Abbreviation referral: see alternating current	(eng.)
academic	Akademiker, der; akademisch The Royal Society, which was founded in 1660, was the first aca	(<i>sci</i> .) demic society.
acceleration	Beschleunigung, die In SI units, acceleration is measured in meters/second ² .	(eng.)

accompanying elemen	t Begleitelement, das (c) After precipitation, the thallium had to be separated from the accompan- elements. TI (atomic number 81) is highly toxic and can be found in rat po and insecticides.	
accounting	Buchhaltung, die (6 Working in accounting requires paying attention to details.	econ.)
accounts payable	Schulden, die; Verbindlichkeiten, die(eAcronym (engl.): A/PThe controller proposed to delay payment of accounts payable in order to enough liquidity for another transaction.	econ.) o have
accounts receivable	Außenstände, die; Forderungen, die; Debitorenkonto, das(eAcronym (engl.): A/RThe young accountant was working with accounts receivable.	econ.)
accrual	Abgrenzung, die; Rechnungsabgrenzung, die (A Accrual is an accounting concept to allocate expenses and revenue to correct time. Here is an example: On December 20, 2009, a company delir a product to a customer who was expected to pay 30 days later. Still, the in was disclosed in the income statement of 2009, although payment would be received in the upcoming fiscal year.	vered
acetic acid	Essigsäure, die (c) The melting point of acetic acid is 16.5°C. The formula of this organic comp is CH_3COOH .	<i>hem</i> .) oound
achromatic	farblos, achromatisch (c) An achromatic lens is used when color abberation needs to be avoided.	hem.)
acicular	nadelförmig (cl The MSDS (material safety data sheet) describes wollastonite as an aci material.	<i>hem</i> .) icular
acid	Säure, die (ch A superacid is an acid that has a greater acidity than 100% sulfuric acid, as fluorosulfuric acid (FSO ₃ H).	<i>hem</i> .) , such

acid scavenger	Säurefänger, der In the rubber industry, acid scavengers are used to neutralize anions (halogenides) which are released during aging and which prematurely destroy material performance. Lead oxides and be effective acid scavengers in this application, however, they are due to environmental concerns.	would otherwise ead salts are very
acid value	Säurezahl, die The acid value is an important quality parameter of biodiesel.	(pharm., chem.)
acid-fast	säurebeständig Acid-fast organisms are difficult to characterize using Gram s	(<i>pharm</i> .) taining.
acidify, to	ansäuern The chemist acidified the sample by adding a few drops of pr	(<i>chem.</i>) ussic acid.
acidulous	säuerlich The apple had an acidulous taste.	(chem.)
acme thread	Trapezgewinde, das Acme threads can be found in machines that have to bear hig lathe or a vice.	(<i>eng</i> .) h loads such as a
acrid	beißend, scharf The acrid smoke from the wildfire could be smelled 10 km av	(chem.) vay.
action level	Aktionsschwellenwert, der The action level of formaldehyde was determined as 0.5 ppm.	(chem. eng.)
action limit, action level	Wirkgrenze, die	(pharm.)
	The action limit of estradiol, a steroid that is derived from chole to be 0.04 μ g/l in pigs.	esterol, was found
action of a drug	Arzneimittelwirkung, die The action of the drug was not yet fully understood.	(pharm.)

activated charcoal, activated carbon	Aktivkohle, die (ch	em.)
	Activated charcoal (activated carbon) is used for gas purification and set treatment.	wage
activation energy	Aktivierungsenergie, die (ch The term "activation energy" was introduced in 1889 by Arrhenius. A cat changes the transition state to lower the activation energy. A biological cat is called enzyme.	•
active compound	wirksamer Bestandteil, der (pha Generic medicinal products contain the same active compounds as the origonal products.	arm.) ginal
active ingredient	Wirksubstanz, die(phaA drug is normally not administered as a pure substance: The typical dosageof a drug is a mixture of the active ingredient (AI) and at least one excipwhich is pharmaceutically inert.Acronym (engl.): AI	
active pharmaceutical ingredient	(pha	ırm.)
-	(pha Acronym/Abbreviation referral: see active ingredient Acronym (engl.): API	arm.)
-	Acronym/Abbreviation referral: see active ingredient Acronym (engl.): API	arm.)
ingredient	Acronym/Abbreviation referral: see active ingredient Acronym (engl.): API Wirkstoff, der (pha Acronym (engl.): API, AI Recent research results suggest that carnosic acid, the active substance in herb rosemary is neuroprotective.	arm.)
ingredient active substance	Acronym/Abbreviation referral: see active ingredient Acronym (engl.): API Wirkstoff, der (phate Acronym (engl.): API, AI Recent research results suggest that carnosic acid, the active substance in herb rosemary is neuroprotective. Antrieb, der; Auslöser, der; Aktuator, der; Bedienungselement, das (mateback) Antrieb, der; Auslöser, der; Aktuator, der; Bedienungselement, das (mateback)	arm.) n the

acute angle measures < 90° (right angle).	"corner". An
Suchtmittel, das A common addictive drug is nicotine. It constitutes approximately dry weight of tobacco. 1 cigarette yields approx. 1 mg of absorbec ((S)-3-(1- Methyl-2-pyrrolidinyl)pyridine, C ₁₀ H ₁₄ N ₂).	
Zusatzstoff, der Plastics often contain slip agents as additives.	(chem.)
anhaften The charged particles adhered to the surface.	(chem.)
Klebemittel, das; Klebstoff, der The company is specialized in the production of adhesives.	(chem.)
Klebestreifen, der Adhesive tape is a convenient tool to fix loose cables.	(chem.)
adiabatisch, adiabat In an adiabatic process, no heat is transferred between the worki the surroundings. The other extreme case is an isothermal process transfer to the surroundings causes the temperature to remain co	s, where heat
Fettgewebe, das In a severely obese person, excess adipose tissue hanging downw abdomen is referred to as a panniculus (or pannus).	(<i>med</i> .) ard from the
benachbart The researcher borrowed a beaker from the adjacent laboratory.	(general)
justieren, anpassen The color of the injection moulded part had to be adjusted.	(general)
Stellklappe, die The adjusting butterfly valve was pneumatically actuated.	(chem. eng.)
	Suchtmittel, das A common addictive drug is nicotine. It constitutes approximately dry weight of tobacco. 1 cigarette yields approx. 1 mg of absorbed ((S)-3-(1- Methyl-2-pyrrolidinyl)pyridine, C ₁₀ H ₁₄ N ₂). Zusatzstoff, der Plastics often contain slip agents as additives. anhaften The charged particles adhered to the surface. Klebemittel, das; Klebstoff, der The company is specialized in the production of adhesives. Klebestreifen, der Adhesive tape is a convenient tool to fix loose cables. adiabatisch, adiabat In an adiabatic process, no heat is transferred between the worki the surroundings. The other extreme case is an isothermal process transfer to the surroundings causes the temperature to remain co Fettgewebe, das In a severely obese person, excess adipose tissue hanging downw abdomen is referred to as a panniculus (or pannus). benachbart The researcher borrowed a beaker from the adjacent laboratory. instieren, anpassen The color of the injection moulded part had to be adjusted.

adjuvant	Hilfsstoff, der In immunology, an adjuvant, e.g. aluminium salts, is an agent that inc. response to a vaccine.	(<i>pharm</i> .) reases the
administer, to	verabreichen, verwalten The medicine was administered orally.	(pharm.)
admixture	Zusatz, der (<i>ck</i> Ethanol is used as an admixture to gasoline fuel.	aem. eng.)
adsorption	Adsorption, die Soot shows a strong adsorption of unburnt hydrocarbons.	(chem.)
advanced	fortgeschritten Corrosion of the vessel has advanced significantly after changing from to condensate.	(general) tap water
advisory board	Aufsichtsrat, der The advisory board insisted on a new strategy.	(econ.)



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11

aerate, to	belüften	(chem.)
	In a waste water purification plant, aeration is an importan	t unit operation.
aeration	Belüftung, die; Begasung, die	(chem. eng.)
	The clarifier was continuously subjected to aeration.	
AFS		(chem. eng.)
	Acronym/Abbreviation referral: see alternative feed stock	
ageing	Alterung, die	(eng.)
	aging (AE)	
	Ageing is a deliberate process by which an artwork such as to look old.	a painting is made
agent	Mittel, das	(chem.)
	The cleaning agent was not very effective.	
agglutination	Verklebung, die; Agglutination, die	(pharm.)
	Agglutination is the clumping of cells, e.g. bacteria or red	blood cells, in the
	presence of an antibody. The technique is commonly used antigens.	to identify bacterial
aggravate, to	reizen, ärgern, verschlimmern, verstärken	(general)
	Persons in ill health where such illness would be aggrava	ted by exposure to
	1,3-butadiene should not be allowed to work with or hand	le this product.
aggregated	Summen-, aggregiert, Gesamt-	(econ.)
	The aggregated sales and operations planning for 2009 was	finalized in the first
	week of December 2008.	
aggregated detriment	Schadenssummierung, die	(econ.)
	The aggregated detriment amounted to 1.3 MEUR.	
agitate, to	umrühren	(chem.)
	The solution had to be agitated in order to suspend the cat	alyst particles.
agitator	Rührer, der; Mischer, der; Agitator, der	(chem. eng.)
	An agitator is a mechanism to put something into motion by	shaking or stirring.

AI		(pharm.)
	Acronym/Abbreviation referral: see active ingredient	
aileron	Querruder, das	(eng.)
	Ailerons are used to control the movement of aircraft.	
ailment	Leiden, das	(<i>med</i> .)
	The source of his ailment was unknown.	
air	Luft, die	(chem.)
	The main constituent of air is nitrogen.	
air classifier	Windsichter, der	(chem. eng.)
	An air classifier is used to separate materials by size, shape, It is often used in recycling processes	and density.
	It is often used in recycling processes.	
air cushion	Luftkissen, das	(eng.)
	A hovercraft (or air cushion vehicle) is an amphibious vehicle.	
air draft	Zugluft, die	(chem.)
	The air draft has carried dust into the lab.	
air knife	Luftrakel, die	(eng.)
	An air knife is commonly used in strand pelletizing to dry the stra	ands prior to
	cutting them into pellets.	
air lock	Luftschleuse, die; Lufteinschluss, der; Luftverschluss, der;	(chem. eng.)
	An air lock is gas trapped in a high point of a pipe that is filled wit	h liquid. The
	gas, which has a lower density than the liquid, rises to the higher	-
	restricts the flow of that liquid. This air lock can stop the fluid flow	
	Flushing the system with high flow or pressure can help to move from the highest point, or a tap can be installed to vent the gas.	the gas away
	from the highest point, of a tap can be instaned to vent the gas.	
airborne	in der Luft	(eng.)
	The Antonov An 225 has a maximum take-off weight of 640 tonne airborne on 21 December 1988 (maiden flight).	es. It was first
airlock	Luftschleuse, die; Luke, die	(chem. eng.)
	Airlocks are used on gloveboxes.	

airworthy	flugtauglich It is only permitted to fly airworthy aircraft.	(eng.)
aka, a.k.a.	Acronym/Abbreviation referral: see also known as	(general)
alara	Acronym/Abbreviation referral: see as low as reasonably achievable	(general)
alcaline earth metal	Erdalkalimetall, das Calcium belongs to the alcaline earth metals.	(chem.)
alcaline metal	Alkalimetall, das Sodium and potassium are two well-known alcaline metals.	(chem.)
alcaline solution	Lauge, die An alcaline solution is generally more dangerous for the human e acid one.	(<i>chem</i> .) eye than an
aldehyde	Aldehyd, der Fehling's solution is used to differentiate between aldehydes and ketor with an aldehyde group causes the precipitation of red Cu_2O .	(<i>chem</i> .) nes. Contact
align, to	ausrichten The engine needs to be aligned with the gearbox in order to prever	(<i>eng</i> .) nt damage.
alignment chart, nomograph,	Nomogramm, das (chem. eng.)
nomogram, abac	With a pressure-temperature nomograph, boiling points at variou can be estimated quickly.	s pressures
allergen-desensitising treatment	Desensibilisierungsbehandlung, die; Allergendesensibilisierungstherapie, die <i>allergen-desensitizing treatment (AE)</i> The man objected an allergen-desensitising treatment.	(general)
allow to stand, to	absetzen lassen The suspension was allowed to stand for 2 hours.	(chem.)

alloy	Legierung, die Chinese silver, an alloy for jewelry, is composed of 58% copper, 11.5% nickel, 11% cobalt, and 2% silver. Brass is an alloy made f and zinc.	
alloyed steel	legierter Stahl, der Steel is an alloy made from iron and 0.02% to 1.7% carbon.	(eng.)
alopecia, hair loss, loss of hair	Haarausfall, der Iron deficiency, chronic poisoning by boron compounds and chemo lead to hair loss.	(pharm.) otherapy can
also known as	auch bekannt unter, alias Acronym (engl.): aka, a.k.a. Formaldehyde (a.k.a. methanal), also exists as cyclic trimer (tr as oligomer (paraformaldehyde). In the case of longer chain polyoxymethylene (POM, polyacetal, polyformaldehyde) is used. F formula $(OCH_2)_n$.	s, the term



alternate stress	Wechselbeanspruchung, die Reinforced concrete can withstand more alternate stress than u	(eng.) nreinforced one.
alternating current	Wechselstrom, der <i>Acronym (engl.): AC</i> The voltage of AC can be changed with a transformer.	(eng.)
alternative feedstock	alternativer Rohstoff, der <i>Acronym (engl.</i>): <i>AFS</i> Sugarcane-based ethanol is an important AFS.	(chem. eng.)
alum	Alaun, der Alum crystals are easy to grow. The specific compound formula $KAl(SO_4)_2$.12H ₂ O. Alums have the stoichiometry AB(
alumina	Aluminiumoxid, das Alumina (Al_2O_3) is made from bauxite.	(chem.)
aluminium	Aluminium, das <i>aluminum (AE)</i> <i>Acronym (engl.): Al</i> <i>Acronym (dt.): Al</i> Aluminium (atomic number 13) is appreciated for its ability to (due to passivation) and its low density of 2.7 g/cm ³ , compared g/cm ³ . The melting point of Al is 660°C.	
amber	Bernstein, der Real amber can be discerned from imitates by making the "lig	(<i>chem</i> .) hter test".
ambient	Umgebungs – The vessel was only designed for ambient pressure.	(general)
ambient air	Umgebungsluft, die The ambient air carried a characteristic smell.	(chem.)
ambient temperature	Umgebungstemperatur, die The ambient air temperature is 20°C.	(chem.)

amendment	Abänderung, die; Ergänzung, die(eccAn amendment to the contract was considered.	on.)
American Society for Testing and Materials	ASTM, Amerikanische Gesellschaft für Werkstoffprüfung, die (e.	ng.)
U U	Acronym (engl.): ASTM	
	The pipes were manufactured according to ASTM standards.	
amino acid	Aminosäure, die (che	em)
	In chemistry, an amino acid is a molecule which contains both amine	
	carboxyl functional groups. In biochemistry, this term is more specific	
	describes alpha-amino acids with the general formula NH ₂ -CHR-COOH v	
	R being an organic substituent.	
		,
ammeter	-	ng.)
	An ammeter is an instrument to measure the electric current in a circuit, $CI = \frac{1}{2} \left(-\frac{1}{2} \right)^{1/2}$	the
	SI unit of which is amperes (A).	
amorphous	amorph (che	em.)
	Polypropylene (PP) can be crystalline and amorphous.	
amplification	Verstärkung, die (e	ng.)
I	The electronic circuit provided an amplification factor of 10 ⁴ .	
amplifier	Verstärker, der (et	ng.)
	An amplifier can add noise to a signal.	
ampoule	Ampulle, die (phar	rm.)
I	Ampoules protect hypodermic solutions or high purity chemicals from air.	
analgesic, analgetic	schmerzstillend, Schmerzmittel, das (phar	rm.)
	Analgesia are drugs that relieve pain. Paracetamol (acetaminophen, C_8H_9N	[O ₂)
	is a widely-used analgesic. It can be derived from coal tar.	
analog	analog (e	ng.)
	The primary disadvantage of analog signals, as opposed to digital ones, is t	č
	they carry noise.	

analysis	Analyse, die (chem.) Wet chemical analysis is increasingly replaced by laser-based online measurements.
analytical balance	Analysenwaage, die(chem.)An analytical balance requires proper maintenance.
anchor	Anker, der; Bolzen, der(eng.)There are two operating principles of ship anchors: They can fix the position of a ship by their sheer mass or by hooking into the seabed.
anchor bolt	Dübel, der; Ankerbolzen, der; Ankerschraube, die (<i>eng.</i>) Badly visible anchor bolts in the ground can be a tripping hazard in a production plant.
ancillary unit, auxiliary unit	Hilfsaggregat, das; Nebenaggregat, das(eng.)The ancillary units account for 15% of the total investment costs.



anesthetic	Anästhetikum, das; Narkotikum, das; Betäubungsmittel, das (pharm.) Butorphanol ($C_{21}H_{29}NO_2$) is an anesthetic that is rarely used in people, but commonly in animals.	
angle of incidence, incident angle	Einfallswinkel, der (eng.)	
	The incident angle equals the emergent angle.	
angle of repose	Schüttwinkel, der(chem. eng.)The angle of repose of that material is 42°.	1
angle seat valve	Schrägsitzventil, das(chem. eng.)The angle seat valve was made from stainless steel.	1
angular minute, minute of arc	Winkelminute, die (eng.)	I
	1 minute of arc is 1/60 of 1 degree.	
anhydrous	wasserfrei (chem.) Anhydrous ethanol (C_2H_5OH) is called "absolute alcohol".	
anion	Anion, das (chem.) SO_4^{2} (sulfate) is an anion. The S-O bond length is 149 pm.	I
anneal, to	anlassen, tempern, vergüten (eng.) Annealing is a heat treatment method in metallurgy by which internal stresses in the material can be relieved.	
annealing furnace	Glühofen, der (<i>chem.</i>) The annealing furnace had a setpoint of 950°C.	1
annular	ringförmig (chem.) Benzene (C_6H_6) is an annular molecule.	I
annular gap scrubber	Ringspaltwäscher, der(chem. eng.)He developed an annular gap scrubber for the scrubbing of blast furnace gaseswith water.	

anodised	eloxiert anodized (AE)	(chem.)
	Anodised a luminium carries a protective layer of Al_2O_3 which preven oxidation.	nts further
anti fouling agent	Anti-Belagbildungs -Zusätze, die (c The operator poured a container of anti fouling agent into the coo tank.	<i>hem. eng</i> .) ling water
antibiotic	Antibiotikum, das Antibiotics act against microorganisms such as bacteria, fungi or pre	(pharm.) otozoa.
anticonvulsant	krampflösend; Antikrampfmittel, das Some sulfonamides (R $-S(=O)_2-NH_2$) have anticonvulsant properties	(pharm.) S.
antidote	Gegengift, das; Gegenmittel, das In case of a cyanide poisoning, amyl nitrite (3-methyl-1-nitrosoc C_5H_{11} ONO), sodium nitrite (NaNO ₂) or sodium thiosulfate (Na ₂ S ₂ O ₂ as antidote.	•
antiemetic	Antiemetikum, das; Mittel gegen Erbrechen, das An antiemetic is a drug that is effective against vomiting and nausea	(pharm.) n.
antihistamine	Antihistaminikum, das A common adverse effect (side effect) of antihistamines is sedation.	(pharm.)
anti-inflammatory	entzündungshemmend The application of ice to tissue injuries shows anti-inflammatory effe	(pharm.) ects.
antiknock fuel	klopffester Treibstoff, der Due to its detrimental effects on the environment, lead is no long antiknock fuels.	(<i>eng</i> .) er used in
antimony	Antimon, das Acronym (engl.): Sb Acronym (dt.): Sb The metalloid antimony (Sb) is no longer used in flame retardants	(chem.) and anti-
	fouling coatings on ships.	

antioxidant	Anti-Oxidanz, das (ch Antioxidants are often reducing agents such as thiols (mercaptans, R-SE polyphenols. Vitamin E is used as an antioxidant in polyethylene (PE). Vita E is the collective name for a group of 8 related tocopherols and tocotrier	amin
antipyretic	fiebersenkend; Fiebermittel, das (pho Paracetamol (acetaminophen, $C_8H_9NO_2$), is an analgesic and antipy medication with wide usage.	arm.) vretic
antiseptic	Antiseptikum, das; antiseptisch (pha Antiseptics are antimicrobial substances which are applied to living t (skin) to reduce the possibility of infections. They should be distinguing from antibiotics, which destroy bacteria within the body, and from disinfect which destroy microorganisms on surfaces of non-living objects.	ished
antistatic agent	Antistatik-Zusatz, der (ch Antistatic agents such as glycerine-monostearate (GMS) increase the electros surface conductivity of polyolefins, thereby eliminating charge build-up and collection.	

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21

anvil	Amboß, der(enThe anvil was too heavy for one person to lift.	ng.)
aperture	Lochblende, die; Öffnung, die (en Lasers can be used to create small, symmetric apertures.	ng.)
apex	Scheitelpunkt, der; Gipfel, der; Spitze, die(enIt is assumed that Tyrannosaurus is an extinct apex predator.	ng.)
API	(phar Acronym/Abbreviation referral: see active pharmaceutical ingredient	<i>m</i> .)
apolar	unpolar (<i>che</i> Hydrocarbons, in contrast to water, are apolar liquids.	<i>m</i> .)
apparent density	Rohdichte, die(enThe apparent density of a sample can be defined as: mass divided by volumeincluding both permeable and impermeable voids normally present inmaterial. Density > apparent density > bulk density.	
apparent power	Scheinleistung, die (en When the impedance is a pure resistance, the apparent power equals the power.	ng.) real
appliance	Anwendung, die; Apparat, der; Haushaltsgerät, das (gener A coffee grinder is a typical kitchen appliance.	ral)
application	Anwendung, die (gener After its invention, the laser was seen as a "solution looking for an application	,
applied chemistry	angewandte Chemie, die (<i>che</i> IUPAC is an acronym and stands for "International Union of Pure and Appl Chemistry".	,
apply, to	auftragen, anwenden(generHe applied the ointment to the wound.	ral)
apprentice	Lehrling, der (gener An apprentice should learn a profession from the basics.	ral)

apprenticeship	Lehre, die(general)A typical apprenticeship lasts three years.
appurtenances	Grundstückszubehör, das; Zubehör, das (<i>eng.</i>) The piece of land was offered including all appurtenances.
aqua fortis	Scheidewasser, das (chem.) Aqua fortis, which is actually a solution of HNO ₃ (nitric acid) in water, was used by alchemists to separate gold from silver.
aqua regia	Königswasser, das (chem.) Aqua regia can dissolve gold. It is prepared by mixing concentrated nitric acid and concentrated hydrochloric acid in the ratio 1:3.
aqueous	wässrig (chem.) An aqueous solution of the drug was prepared.
arbitrary units	beliebig gewählte Skala, die(sci.)Acronym (engl.): a.u.The laser power as a function of injection current was depicted in arbitrary units.
arc	Bogen, der(eng.)Mathematically, an arc can be defined as a closed segment of a differentiablecurve in a two-dimensional plane.
arc minute	Bogenminute, die(eng.)In cartography, 1 arc minute at sea level equals approx. 1.86 km or 1.15 miles, which is close to 1 nautical mile (1852 m).
area classification, hazardous area	Einteilung in Ex -Zonen, die (chem. eng.)
classification	During (hazardous) area classification, it became evident that the warehouse is a zone 22.
arm saw	Handsäge, die(eng.)An arm saw can be used to cut down a tree.

arsenic	Arsen, das Acronym (engl.): As Acronym (dt.): As In the past, arsenic was illicitly fed to horses to make them healthy before being sold.	(chem.) appear
articulated lorry	Auflieger, der; Sattelanhänger, der <i>semi-trailer (AE)</i> An articulated lorry is a trailer without a front axle.	(econ.)
artificial	künstlich (g Artificial lubricants generally have a tighter specificat ion than petro derived ones.	general) leum –
as low as reasonably achievable	so niedrig wie sinnvollerweise erzielbar (<i>chem</i> .) <i>Acronym (engl.): alara</i> The MSDS suggests exposure to the chemical as alara.	

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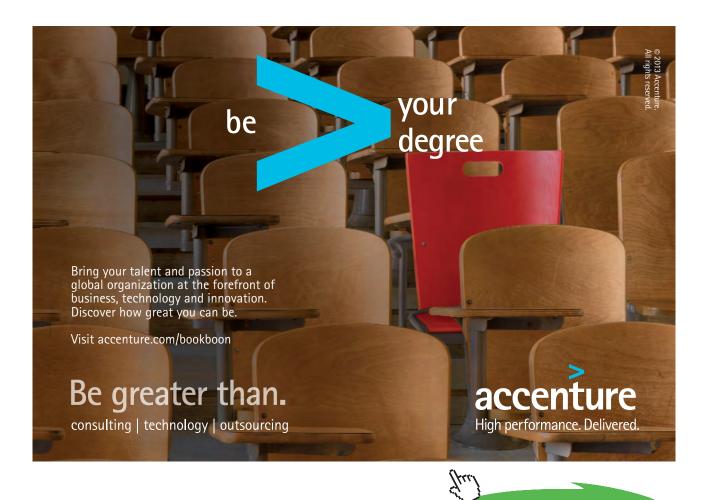
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asbestos	Asbest, der The use of asbestos has been reduced because of its carcinogenic o	(chem.)
as-built	wie errichtet	(chem. eng.)
	The as-built documentation was handed over to the client 1 month	after startup.
as-built	Dokumentation der tatsächlichen Ausführung, die	(eng.)
documentation		
	The as-built documentation was incomplete because the project used up.	budget was
as-built drawing	Ausführungszeichnung, die; Bauzeichnung, die	(eng.)
	The as-built drawing was handed over to the client.	
ascorbic acid	Ascorbinsäurem, die	(chem.)
	The L-enantiomer of ascorbic acid $(C_6H_8O_6)$ is commonly known a	as vitamin C.
aseptic	steril, keimfrei	(pharm.)
aseptie	Aseptic packaging is a key requirement in the food industries.	(phurm.)
asphyxiant	erstickend	(chem.)
	By replacing breathable oxygen, nitrogen is asphyxiant. The earth's contains 79% of asphyxiant gases (mainly N_2 and Ar).	atmosphere
aspirate, to	absaugen	(eng.)
	The aspiration system was designed for zone 20.	-
assembly	Montage, die; Zusammenbau, der	(eng.)
	Assembly of the ladder was more complicated than indicated by the	e
	manual.	
assets	Anlagegüter, die; Anlagevermögen, das	(econ.)
	Assets are depreciated over their lifetime.	
assignment	Einsatz, der; Arbeitseinsatz, der	(econ.)
0	She was on a 2-year assignment in Canada.	()
assort, to	sortieren, zusammenstellen The complex years eccented in the connect order	(eng.)
	The samples were assorted in the correct order.	

ASTM		(eng.)
	Acronym/Abbreviation referral: see American Society for Testing a	nd Materials
atomic bond	Atombindung, die	(chem.)
	Atomic bonds are also called valence bonds.	
atomic core	Atomkern, der	(chem.)
	The atomic core is composed of protons and neutrons.	
atomic nucleus	Atomkern, der	(chem.)
	Isotopes have different atomic nucleii.	
atomic transmutation	Atomumwandlung, die	(chem.)
	Atomic transmutation has not only captured the attention of alch	nemists.
atomise, to	zerstäuben	(eng.)
	atomize, to (AE)	
	Ultrasound can be used to improve the atomizing effect of a	nozzle.
attenuate, to	abschwächen	(general)
	The light beam was attenuated by the sample.	
attenuation	Abschwächung, die	(general)
	Radioactive level measurements are based on the attenuation of ra	diation when
	passing through a sample.	
attraction	Anziehung, die	(chem.)
	Hygroscopic materials exhibit a strong attraction of water.	
attrition	Abrieb, der	(eng.)
	Attrition from machinery can lead to product contamination.	
audible	hörbar	(eng.)
	Hearing protection should be constructed in a way that a human audible.	n voice is still
audit	Betriebsprüfung, die	(econ.)
	Plant audits by customers can be scheduled at short notice.	

automation	Automation, die; Automatisierung, die The plant has a high degree of automation.	(eng.)
auxiliaries	Hilfseinrichtungen, die; Nebenaggregate, die The energy efficiency study revealed that the auxiliaries were consumin of the electricity.	(<i>eng</i> .) ng 40%
availability	Verfügbarkeit, die The availability of spare parts in remote operations needs to be conside	(<i>eng</i> .) red.
avoirdupois ounce	Acronym/Abbreviation referral: see ounce Acronym (engl.): oz	(eng.)
axis	Achse, die The engineer turned the wheel around its axis.	(eng.)
axle	Radachse, die The maximum load on each axle is 3 tons.	(eng.)



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babbit, babbit metal	Lagermetall, das Bush bearings are often made from babbit or graphite.	(chem.)
back flushing filter, back flush filter	Rückspülfilter, der	(chem. eng.)
	The back flush filter was activated every 15 min.	
back pressure	Gegendruck, der	(eng.)
	A flare creates backpressure which must be overcome.	
backdraft	Rauch(gas)durchzündung, die; Rauchgasexplosion, die; Backdraft, der	(chem.)
	A backdraft is a situation which can occur when a fire is starved consequently combustion stops, but the fuel gases and smoke rem	
	temperature. If oxygen then reaches the fire, e.g. by opening a door, can restart. This can occur in an explosive way as the gases are heater and expand.	
backlog	Auftragsüberhang, der; Aufholbedarf, der; Arbeitsrückstand, der After his holidays, there was a huge backlog.	(general)
bactericidal	bakterizid	(pharm.)
	The hypochlorite ion (ClO ⁻), a strong oxidizer, has bactericidal pro	perties.
baffle	Leitblech, das; Prallblech, das; Ablenkblech, das	(eng.)
	The acoustic baffle could reduce the noise by 3 dB(A).	
baffle,	Prallplatte, die	(eng.)
baffle plate	Baffles, which act as counterpart to stirrers, are ofen used in reactor a process flow.	ors to divert
balance	Waage, die	(chem.)
	The resolution of the balance is 0.1 mg.	
balance	Bilanz, die	(econ.)
	The mass balance was wrong.	

balance sheet, statement of financial position	Bilanz, die (econ.))
inimiteral position	A balance sheet or statement of financial position lists all assets and liabilities or a corporation at a specific date. Also, the ownership (debt vs. equity) is disclosed	
ball and socket joint	Kugelgelenk, das (eng.) Laboratory glassware can have conically tapered joints or, like bones, ball and socket joints, where the ball-shaped end of one piece fits into the cuplike depression of the counterpart.	ł
ball bearing	Kugellager, das(eng.)The reason for the damage to the ball bearing could not be determined.)
ball condenser	Kugelkühler, der (<i>chem.</i>) For the synthesis of his new herbicide, he was looking for an additional ball condenser.	·
ball indentation	Kugeleindruckhärte, die (eng.))
hardness	Vickers and Brinell hardness tests are more common than the ball indentation hardness.	1
ball mill	Kugelmühle, die (<i>eng.</i>) To grind black powder in a ball mill, non-sparking lead, antimony, brass, or bronze grinding media are used.	
ball screw	Kugelgewindespindel, die(eng.)With a ball screw, rotational motion can be translated into linear motion.)
ball valve	Kugelhahn, der; Kugelventil, das(chem. eng.)A ball valve is a valve that opens by turning a handle attached to a ball insidethe valve, which has a hole (port) in the middle. Ball valves are reliable. Theyachieve perfect shutoff even after years of disuse.	e
band saw	Bandsäge, die(eng.)The band saw was suitable to cut down the wood.)

bar	Stab, der; Stange, die The crane driver lifted the bar from the ground.	(eng.)
bar absolute	Absolutdruck in bar, der <i>Acronym (engl.): bara</i> The instrument reading was 2 bara (1 bar = 100 kPa).	(eng.)
bar chart, bar graph	Balkendiagramm, das The scientist used a bar chart to display the particle size distribution.	(sci.)
bar gauge	bar Überdruck Acronym (engl.): barg There is no fixed conversion factor from barg to bara as atmospheric p changes daily in a range of approx. 50 mbar. By adding 1000 mbar to reading, the bara value will be accurate within typically +/- 50 mbar.	
bara	Acronym/Abbreviation referral: see bar absolute	(eng.)



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barbed hook	Widerhaken, der(eng.)The fisherman caught the bass with a barbed hook.)
barbed wire	Stacheldraht, der(eng.)Barbed wire was installed around the entire site.)
barg	(eng.) Acronym/Abbreviation referral: see bar gauge)
barrier fluid	Sperrflüssigkeit, die(eng.)The service technican had forgotten to refill the barrier fluid.)
barrier layer	Grenzschicht, die; Barriereschicht, die(chem.)Carbonated soft drinks cannot be stored in PP bottles, because a barrier layerfor CO_2 is missing.	·
basal	grundlegend, fundamental, basal (<i>pharm.</i>) Basal tears contain water, mucin, lipids, lysozyme, immunoglobulins, glucose urea, sodium, and potassium. Lysozyme fights bacterial infections by dissolving the outer coating of certain bacteria.	,
base face	Auflagefläche, die(eng.)The base face of the machine is 45 m².)
base metal	unedles Metall, das (<i>chem.</i>) Base metals like iron, nickel or lead react with diluted hydrochloric acid under hydrogen formation.	
basement	Sockel, der(eng.)The basement cannot be made from concrete.)
basement	Keller, der; Kellergeschoss, das(general)Hotel rooms in the basement are not so popular.)
basic chemicals	Grundchemikalien, die (<i>chem.</i>) Many basic chemicals are produced from petroleum.)
basic engineering	Basic Engineering, das; Vorplanung, die; Entwurfsplanung, die (<i>chem. eng.</i>) The result of Basic Engineering was a cost estimation of +/- 10% accuracy.)

Chemical Engineering Vocabulary

basic flux	basisches Flussmittel, das The basic flux-cored wire is suitable for welding non-alloyed steel.	(eng.)
basic research	Grundlagenforschung, die Basic research is done at universities.	(sci.)
batch	diskontinuierlich, Stapel, der; Ansatz, der; Charge, die (che The color batch had to be discarded.	em. eng.)
batch furnace	Ofen mit satzweiser Beschickung, der The batch furnace has a residence time of 45 min.	(eng.)
batch operation	Chargenbetrieb, der (cha Batch operations are characterized by frequent reactor cleaning period	em. eng.) ds.
batch release	Chargenfreigabe, die (cha The results of mechanical testing had to be awaited for the batch relea	em. eng.) ase.
batch tracking	Chargenrückverfolgbarkeit, die Many customers require batch tracking of their suppliers' raw materia	(<i>econ</i> .) als.
battery back-up	Pufferbatterie, die Backup batteries (Battery back-ups) are almost always used in burglar	(<i>eng</i> .) r alarms.
battery limits	Anlagengrenze, die (<i>che</i> The reactor inlet and the dryer outlet were defined as battery limits.	em. eng.)
beaker	Becherglas, das The student rinsed the beaker.	(chem.)
bearing	Lager, das Breakage of the bearing was the suspected reason for the fire.	(eng.)
bearing clearance	Lagerspiel, das The clearance of the bearing has reached an inacceptable level.	(eng.)
bearing rod	Tragstange, die The bearing rod exhibits strong deformations.	(eng.)

bedrock	Felsboden, der; Grundgestein, das	(general)
	The bedrock consists of granite (an igneous rock) in that area.	
bee venom	Bienengift, das Apitoxin, or honey bee venom, is a bitter colorless liquid. The active of the venom is a complex mixture of proteins. The main component a peptide consisting of 26 amino acids.	
beech	Buche, die Beech grows on a wide range of soils as long as they are not waterlo	(<i>general</i>) gged.
behind-the-counter	apothekenpflichtig <i>Acronym (engl.</i>): <i>BTC</i> This product is a behind-the-counter drug.	(pharm.)
belt drive	Bandantrieb, der; Keilriemenantrieb, der The belt drive did not have to be renewed for 5 years.	(eng.)
bench	Werkbank, die The master showed his apprentice how to use a bench.	(eng.)





benchmark	Bezugspunkt, der; Maßstaß, der; Vergleich, der The investment was benchmarked against previous projects.	(general)
bend, to	biegen (bog, gebogen) When plastics are bent, white fraction can be observed.	(eng.)
benign	gutartig, gutmütig The tumor was found to be benign, i.e. it did not grow aggressively, invade the surrounding tissue and it did not metastasize.	(<i>pharm</i> .) , it did not
benzene	Benzen, das; Benzol, das Petrol station-grade gasoline can contain 3% of benzene (C_6H_6) , carcinogen.	(<i>chem</i> .) which is a
benzocaine	Benzokain, das; Benzocain, das Benzocaine ($C_9H_{11}NO_2$) is a local anesthetic commonly used as a to reliever. It is the active ingredient in some over-the-counter ointmen	
bezel	Einfassung, die; Lünette, die Jewels can be fastened by bezels.	(eng.)
bid	Gebot, das; Angebot, das The procurement specialist compared the 3 bids.	(econ.)
bidistilled	doppelt destilliert Bidistilled water was commonly used in HPLC, but is now replac milliq [™] water due to more reproducible results.	(<i>chem</i> .) ced by e.g.
big bag, flexible intermediate bulk container	Big Bag, der; Großgebinde, das (d	hem. eng.)
	 super sack (AE) Acronym (engl.): FIBC Acronym (dt.): FIBC Big bags are soft containers of textile material. With a capacity of and load capability between 0.5 and 2 tonnes, FIBCs can be use transportation and storage of many free-flowing materials such as powders, pellets or flakes. 	ed for the

bile	Galle, die; Gallenflüssigkeit, die(chem.)Bile from slaughtered animals can be mixed with soap to obtain bile soap, aneffective agent to remove stains in textiles.
biliously green	giftgrün (<i>chem</i> .) The liquid looked biliously green.
bill of materials	Stückliste, die; Materialliste, die(econ.)Acronym (engl.): BOMThe assistant typed the bill of materials into a list on the PC.
billing	Abrechnung, die; Fakturierung, die(econ.)Sophie was responsible for the billing.
bimodal	bimodal (<i>chem</i> .) Bimodal plastics show both adequate processing characteristics (low molecular weight fraction) and good mechanical performance (high molecular weight fraction).
binding agent	Bindemittel, das(chem.)An oil binding agent helps contain a spill.
bioessay	biologischer Test, der(chem.)Bioassays show a high sensitivity and selectivity.
biodegradable	biologisch abbaubar (chem.) Polyhydroxyalkanoates (PHA) are biopolymers which are completely biodegradable. These compounds are linear polyesters produced by bacterial fermentation of sugar or lipids.
biodegradable plastics	biologisch abbaubare Kunststoffe, die(chem. eng.)The restaurant chain has used cutlery made from biodegradable plastics based on starch for several years.
bioreactor	Bioreaktor, der(chem. eng.)A bioreactor is an apparatus used to carry out any kind of bioprocess. A fermenteris an example.

birefringence	Doppelbrechung, die Birefringence can be observed in anisotropic materials such as crystals o or boron nitride.	(<i>eng</i> .) of calcite
bivalent	zweiwertig Calcium forms bivalent ions.	(chem.)
black liquor	Schwarzlauge, die A paper factory has successfully built a plant to burn black liquor and the generated heat.	(<i>chem</i> .) d to use
blade	Klinge, die The blade of a knife can be sharpened by grinding.	(eng.)
blank experiment	Blindprobe, die A blank experiment can detect instrument drift.	(eng.)
blank value	Blindwert, der; Blindprobe, die The blank value was recorded in the lab journal.	(eng.)

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blanket, to	überlagern, beschleiern Nitrogen blanketing of a vessel can prevent the formation atmospheres.	(<i>chem</i> .) of explosive
blast furnace	Hochofen, der In a blast furnace, Fe_2O_3 is reduced to Fe.	(chem.)
blast furnace gas	Gichtgas, das Blast furnace gas is rich in CO ₂ .	(chem.)
blasting	Sprengung, die Blasting activities in a quarry need to be well planned.	(eng.)
blasting agent	Sprengstoff, der Blasting agents are capable of developing a high amount of heat an a short period of time.	(<i>chem</i> .) Id gas within
blasting fuse	Zündschnur, die Blasting fuses are sensitive to moisture.	(chem.)
bleaching agent	Bleichmittel, das Bleaching agents are used in the pulp and paper industry.	(chem.)
bleed valve	Entlüftungsventil, das; Ablassventil, das Needle valves are frequently used as bleed valves in hot water heating	(<i>chem. eng</i> .) applications.
blemish	Fehler, der Customers generally do not accept visible surface blemishes.	(eng.)
blind flange, black flange, dummy flange, blank flange	Blindflansch, der	(eng.)
o	The pipeline was terminated by a blank flange.	
block and bleed valve	Block-and-Bleed Ventil, das The block and bleed valve was checked by a maintenance enginee	(chem. eng.) r.

block and tackle	Flaschenzug, der(eng.)The pulley of a block and tackle was probably invented by Archimedes.
blockbuster drug	Kassenschlager-Medikament, das; Blockbuster, der(pharm.)A blockbuster drug is a drug generating more than \$1 billion of annual turnover.
blocking	Blockieren, das(eng.)The ABS (anti-lock braking system) prevents blocking of the wheels when a carbreaks, thereby maintaining steerability.
blood clotting, blood coagulation, clotting	Blutgerinnung, die (pharm.)
0	Blood clotting is typical for mammals.
blood corpuscle	Blutkörperchen, das(pharm.)Blood corpuscles can be divided into red blood cells (O_2 transportation),white blood cells (antibody production to fight infections) and platelets (bloodclotting). They account for 45% of the blood, the rest being plasma.
blower	Gebläse, das (chem. eng.) A fan is commonly used to move air in an unconfined volume, e.g. for ventilation purposes in a production hall. By contrast, a blower is generally deployed to move air through a conduit such as a pipe at relatively low overpressures, e.g. for pneumatic conveying of solids. A compressor is typically utilized to provide air at relatively high pressures through a conduit, e.g. as instrument air to control plant instruments.
blowhole, cavity	Lunker, der(eng.)Cavities can lead to premature mechanical failure.
blowing agent	Treibmittel, das (chem. eng.) Butane and carbon dioxide are two commonly used physical blowing agents (foaming agents).
blue collar worker	Arbeiter, der(general)The company employs 80% blue collar workers.

blunt	stumpf	(eng.)
	A blunt tool should be used to prevent damage to the surface.	
blunting	Abstumpfung, die Blunting is a process step in the development of a crack in a too such as polypropylene. It hinders further crack propagation.	(<i>eng</i> .) ugh material
blurring of vision	unscharfes Sehen, das Eye contact with cyclododecanol can lead to blurring of vision.	(<i>med</i> .)
boil down, to	eindampfen In order to obtain the salt, he boiled down the solution.	(chem.)
boiler	Dampfkessel, der In China, boilers are typically fired with coal.	(chem. eng.)
boiler scale	Kesselstein, der By reducing heat transfer, boiler scale lowers the thermal efficienc	(<i>eng</i> .) y of the unit.



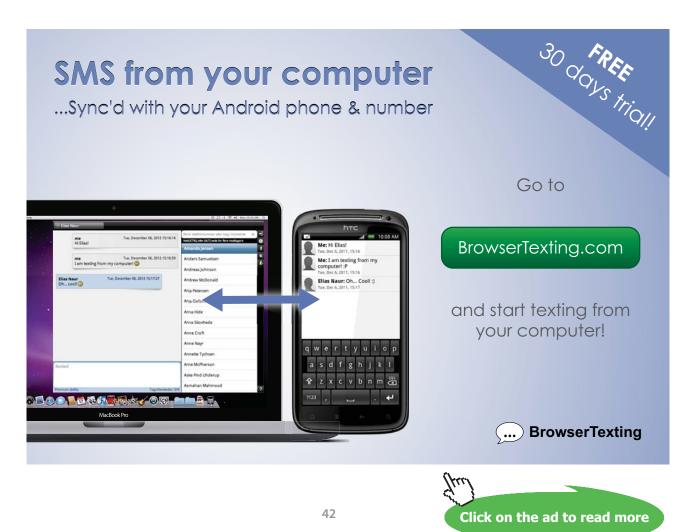
39

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boiling chip	Siedestein, der Boiling chips are used to prevent boiling retardation and hence da material spill and loss.	(<i>chem</i> .) Ingerous
boiling point	Siedepunkt, der The boiling point of ethanol is 78°C.	(chem.)
boiling point		
elevation	Siedepunktserhöhung, die Boiling point elevation can be observed when a non-volatile solute, s salt, is added to a pure solvent, such as water.	(<i>chem</i> .) uch as a
boiling retardation	Siedeverzug, der Boiling retardation can occur in very pure liquids.	(chem.)
bolt	Bolzen, der A bolt (cap screw) is used together with a nut to give a bolted joint.	(eng.)
bolt together, to	verschrauben A riveted connection shows a slower, more creeping fatigue than a bol	(<i>eng</i> .) Ited one.
bolted joint	Flanschverbindung, die Schraubverbindung, die Bolted joints are commonly used in the construction of machines.	(eng.)
ВОМ	Acronym/Abbreviation referral: see bill of materials	(econ.)
bonded area	Inspektionsbereich, der; Zoll-Lager, das; Zollfreilager, das The shipment was stored in the bonded area.	(jur.)
booster	Zusatzmotor, der The space shuttle uses a booster to reach orbit.	(eng.)
bore	Bohrung, die; Zylinderbohrung, die The bore is the diameter of a cylinder in a piston engine.	(eng.)
bore bit	Bohrmeißel, der The bore bit was lost in the workshop.	(eng.)

bore hole		ıg.)
	After depletion of a drilling site, the bore hole has to be properly sealed.	
bore rod	Bohrgestänge, das (er	ıg.)
	Bore rods have to be designed for high mechanical loads.	-
boric acid	Borsäure, die (cher	n.)
	Boric acid $(B(OH)_3)$, orthoboric acid) is used in nuclear power plants to cont the fission rate of uranium.	rol
boron	Bor, das (cher	n.)
	Acronym (engl.): B	
	Acronym (dt.): B	
	Borax (Na ₂ B ₄ O ₇ 10H ₂ O) is an important boron compound.	
boundary	Grenze, die (er	ıg.)
	The boundary could be spotted clearly.	
branch line,	Stichleitung, die (er	ıg.)
transmission line		
	The branch line was made from copper.	
brass	Messing, das (er	ıg.)
	Brass is any alloy of copper and zinc, whereas bronze is an alloy of copper a	nd
	tin. Because of its malleability, brass is often used to produce instruments.	
brazing	Hartlöten, das (er	ıg.)
	Brazing is a joining process where a filler metal or alloy is heated to its melti	ing
	temperature of above 450°C. The temperature in brazing is lower than in weld	ing
	and hence less likely to distort the workpiece.	
breach of contract	Vertragsbruch, der (eco	n.)
	When a business partner conducts a breach of contract, legal action should seriously considered.	be
break even point	Break Even, der; Rentabilitätsschwelle, die (eco	n.)
	At the break even point, costs equal revenue, i.e. there is neither loss nor ga	in.
breakage	Bruch, der (er	ıg.)
	Breakage of a rope may imply wrong handling.	

breakage of glassware	Glasbruch, der	(chem.)
	Breakage of glassware can be insured.	
brick layer	Maurer, der The brick layer finished his job on the same day.	(eng.)
brightness	Glanz, der; Helligkeit, die The brightness of a specimen depends on its surface structure.	(eng.)
brine	Salzlösung, die; Sole, die A brine is water saturated with salt.	(chem.)
British thermal unit	BTU, das; englische Kalorie, die Acronym (engl.): BTU, btu Acronym (dt.): BTU, btu 1 BTU corresponds to approx. 1060J.	(eng.)
brittle	spröde, brüchig At low temperatures, many materials become brittle.	(eng.)



brittleness	Sprödigkeit, die(eng.)Brittleness at low temperatures is a disadvantage of polycarbonate.
bromic acid	Bromsäure, die (chem.) Bromic acid (HBrO ₃) is a reagent in the Belousov-Zhabotinsky (BZ) oscillating reaction.
bromine	Brom, das(chem.)Acronym (engl.): BrAcronym (dt.): BrAt standard conditions, bromine is the only liquid, nonmetallic element.
bronze	Bronze, die(chem.)Bronze is a copper alloy, usually with tin as the main alloy partner.
broom	Kehrbesen, der (<i>eng.</i>) To prevent dusty atmospheres, a vacuum cleaner should be used instead of a broom.
brown coal	Braunkohle, die(eng.)The calorific value of brown coal is lower than that of oil.
brown fields	Altlasten, die(chem. eng.)It is suspected that many brownfields are still unknown.
ВТС	(pharm.) Acronym/Abbreviation referral: see behind-the-counter
BTU, btu	(eng.) Acronym/Abbreviation referral: see British thermal unit
BU	(econ.) Acronym/Abbreviation referral: see business unit
bubble column	Blasensäule, die(chem. eng.)A bubble column can be a bioreactor where the reaction medium is kept mixedand aerated by the introduction of air into the bottom.

bucket wheel	Schöpfrad, das(eng.)Bucket wheels do not fluidize the materials to be handled.
buffer	Puffer, der(chem.)A buffer of carbonic acid (H_2CO_3) and bicarbonate (HCO_3^-) is present in bloodplasma, to maintain a pH between 7.35 and 7.45.
building rubble	Bauschutt, der(eng.)Building rubble that contains metal and wood cannot be landfilled in severalcountries.
bulk density	Schüttdichte, die (<i>eng.</i>) The bulk density of a powder depends on its particle size distribution. The bulk density of PP pellets is approx. 500 kg/m ³ , whereas the density of the material is 900 kg/m ³ .
bulk goods	Schüttgut, das(eng.)Bulk goods are often commodities.
bulk material	Schüttgut, das(eng.)Container ships can be used to transport bulk materials over long distances.
bumper	Stoßfänger, der(eng.)A bumper on a car has to absorb the shock of an impact.
buoyancy	Auftrieb, der(eng.)According to Archimedes' law, a body that is fully or partially submerged in afluid experiences a force of buoyancy that is equal to the weight of the displacedliquid or gas.
burn	Brandwunde, die; Verbrennung, die(pharm.)A burn is an injury that can be the result of tissue exposure to heat, cold, electricity, chemicals, radiation (light) or friction. It can range from slight first- degree burns to severe fourth-degree burns.
burn, to	brennen (brannte, gebrannt), verbrennen (verbrannte, verbrannt) (<i>chem</i> .) Waste incineration plants can burn domestic waste.

burn, to	verätzen The acid has heavily burnt his skin, because he was not able to wash in enough.	(<i>chem</i> .) t off fast
bush, bushing	Muffe, die The bushing was rusty.	(chem.)
bushing, bush bearing friction bearing, sleeve bearing, journal bearing	, Gleitlager, das A bushing is a cylindrical liner designed to reduce friction and wear a rotating component.	(eng.) round a
business intelligence	Informationsdienst eines Unternehmens, der The business intelligence department predicted a decrease of raw materi of 15% over the next 2 quarters.	(<i>econ</i> .) al prices



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business unit	Geschäftsbereich, der; Sparte, die <i>Acronym (engl.): BU</i> The company is organized in 3 business units.	(econ.)
butterfly valve	Drosselklappe, die; Drosselventil, das; Absperrklappe, die A butterfly valve is a type of flow control device. It contains a flat which is positioned in the center of the pipe where the flow is to	-
butyric acid	Buttersäure, die The smell of butyric acid reminds one of sweat.	(chem.)
buzz saw, circular saw	Kreissäge, die Industrial buzz saws often have replaceable teeth.	(eng.)
bypass	Nebenstrom, der To cope with floods, there is a bypass installed in power stations	(eng.) on rivers.
byproduct	Nebenprodukt, das Whey is a byproduct from the production of cheese.	(chem.)
C. Ph. T.	Acronym/Abbreviation referral: see Certified Pharmacy Technician	(pharm.)
cable	Kabel, das Cables are constructed from pure raw materials to prevent electrical b	(<i>eng</i> .) oreakthrough.
cable layout plan	Kabelplan, der The cable layout plan was drafted by the engineering company.	(eng.)
calculus	Integral- und Differentialrechnung, die Engineers use calculus in their daily jobs.	(sci.)
calibrate, to	einstellen, kalibrieren The field engineer calibrated the sensor to ensure accurate instrum	(<i>chem</i> .) ent readings.
calibration	Eichung, die Field calibration is an advantage of several industrial sensors.	(chem.)

call-off delivery	Lieferung auf Abruf, die(econ.)The call-off delivery was quite a challenge for the supplier.
calorific value	Heizwert, der; Brennwert, der (chem. eng.) Fuels can be characterized by their net calorific value (=lower heating value) were H_2O is released as vapor and by their gross calorific value (=upper heating value), where H_2O that is formed is condensed. The gross heating value accounts for moisture in the fuel and is, for instance, relevant for wood and coal.
cam shaft	Nockenwelle, die(eng.)The cam shaft is an important construction element in engines. It is used to operate poppet valves.
cane sugar	Rohrzucker, der(chem.)Cane sugar is fermented to alcohol on a large scale in Brazil.
cannula	Kanüle, die(chem.)Cannulae are used in laboratories to transfer liquids between 2 vessels withoutexposing them to the atmosphere. A cannula is a kind of double-ended needlemade of stainless steel or plastic. The sharp ends can easily penetrate septa.
capacitor	Kondensator, der (eng.) A capacitor can store electrical energy. It is composed of thin conducting, metal plates that are separated by a dielectric. This can be, as in the case of so-called electrolytic capacitors, a metal oxide film or an insulator such as vacuum, air, glass or polymer.
capex	(econ.) Acronym/Abbreviation referral: see capital expenditure
capital expenditure	Investitionsaufwand, der(econ.)Acronym (engl.): capexCapex had reached 2.3 MEUR after 8 months.
capsule	Kapsel, die(pharm.)Capsules, the enclosures for orally administered medication, can be made from gelatine. This is is a protein which is produced by partial hydrolysis of collagen from bones and connective tissue of animals.

carbohydrate	Kohlenhydrat, das	(chem.)
	Starch and sugar are carbohydrates.	
carbolic acid, phenol	Carbolsäure, die; Phenol, das Phenol (old name: carbolic acid, C_6H_5OH) can be industrially pro- partial oxidation of benzene, the reduction of benzoic acid (C_6H_5CC the cumene process, or by the Raschig-Hooker process. The cumene yields phenol and acetone from benzene and propylene. Its name is deri cumene (isopropyl benzene), the intermediate substance in that proce Raschig-Hooker process, phenol is won by the hydrolysis of chlorobe	OOH), by e process ved from ss. In the
carbon	Kohlenstoff, der <i>Acronym (engl.)</i> : <i>C</i> <i>Acronym (dt.)</i> : <i>C</i> Carbon capture and storage is an emerging technology in order to fight change.	(chem.) at climate
carbon black	Industrieruss, der (Pigment) Carbon black can be produced by pyrolysis of methane.	(chem.)

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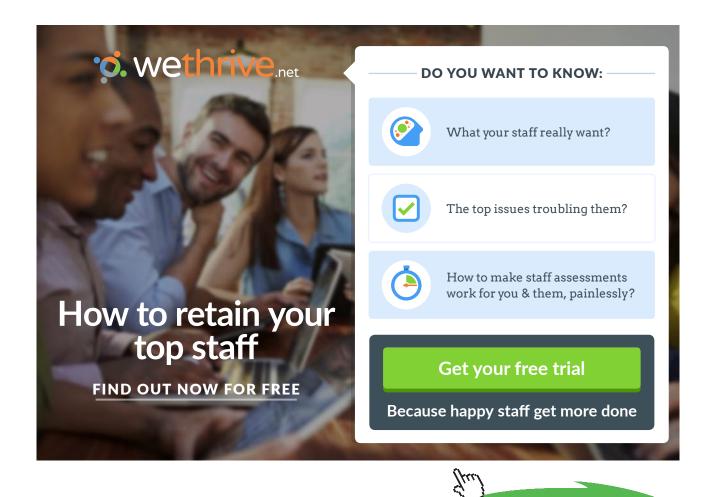


48

carbon dioxide	Kohlendioxid, das	(chem.)
	Acronym (engl.): CO ₂	
	Acronym (dt.): CO ₂	
	Dry ice is frozen carbon dioxide, which sublimates at -78°C.	
carbon monoxide	Kohlenmonoxid, das	(chem.)
	Acronym (engl.): CO	
	Acronym (dt.): CO	
	Carbon monoxide is a colorless and odourless gas.	
carbon steel, plain carbon steel	Schwarzstahl, der; Kohlenstoffstahl, der	(eng.)
	The ductility, hardness, yield strength and impact resistance of carbon be improved by heat treatment.	steel can
carbonic acid	Kohlensäure, die	(chem.)
	Carbonic acid (H ₂ CO ₃) is diprotic. Hydrogencarbonates and carbonat	es are the
	salts of the weak acid carbonic acid.	
carboxylic acid	Karbonsäure, die; Carbonsäure, die	(chem.)
	Carboxylic acids can easily be identified by infrared spectroscopy	through
	the C=O and O-H stretch vibrations in the regions of 1680 to 1725 c	cm ⁻¹ (5.95
	to 5.80 μ m) and 2500 to 3000 cm ⁻¹ (4.0 to 3.33 μ m), respectively. At (CH COOH) is a carboxylic acid	cetic acid
	(CH $_{3}$ COOH) is a carboxylic acid.	
carcinogenic	krebserregend, karzinogen, kanzerogen	(chem.)
	Butadiene (C_4H_6) is a carcinogenic gas.	
carcinogenicity	Karzinogenität, die; Kanzerogenität, die	(chem.)
	There are many natural carcinogens. Aflatoxin B1, which is produce	ed by the
	fungus Aspergillus flavus growing on stored grains, nuts and peanut bu	itter, is an
	example of a potent, naturally-occurring microbial carcinogen. Certai	in viruses
	such as Hepatitis B and human papilloma viruses have been found to cau	ise cancer
	in humans. Substances with carcinogenicity are e.g. benzene and asbes	tos.
cardan shaft	Kardanwelle, die	(eng.)
	A cardan shaft is used for power transmission.	

cardboard	Pappe, die(eng.)Cardboard can absorb water splashes.
cargo	Ladung, die; Fracht, die(econ.)The Antonov An 225 is a cargo plane for exceptionally bulky and heavy goods.
carpenter	Zimmermann, der; Tischler, der(eng.)The carpenter convinced him to reconsider the design of his roof.
carriage paid to	frachtfrei (Incoterm)(econ.)Acronym (engl.): CPTThe spare part arrived CPT one day later.
carrying costs	Frachtkosten, die; Transportkosten, die (<i>econ</i> .) Just in time delivery is an inventory strategy to minimize capital costs. Carrying costs are negligible.
carry-over	Übertrag, der; Saldovortrag, der(econ.)In accounting, a carry-over is a sum that is transferred to a new page.
cartridge	Patrone, die(eng.)If not consumed within 6 months, the cartridge of an inkjet printer can dry out.
CAS	(chem.) Acronym/Abbreviation referral: see Chemical Abstracts Service
CAS number,	CAS Nummer, die (chem.)
CAS registry number	More than 81 million organic and inorganic substances are listed with their unique CAS number in the CAS Registry, the world's largest collection of substance information.
casing	Gehäuse, das(eng.)The casing for the pump was made of aluminium.
cast film	Flachfolie, die(chem. eng.)Cast film is a polymer film that is produced in an extrusion process; the filmis extruded through a slit die onto a cold roll, the so-called chillroll. A typicalfilm thickness is between 20 and 200 μm.

cast iron	Gusseisen, das	(eng.)
	The bell is made of cast iron.	
castor oil	Rizinusöl, das; Castor-Öl, das Castor oil is a vegetable oil obtained from the castor bean. It can be laxative. Sulfonated (sulfated) castor oil, or Turkey Red Oil, is the only completely disperses in water. It is made by adding sulfuric acid to pu oil. It was the first synthetic detergent.	y oil that
catalyst	Katalysator, der Unlike reagents, a catalyst is not consumed in a chemical reaction. It is e that 90% of all chemicals or their precursors are produced by catalysis	
catalytic combustion		
unit	thermisch katalytische Nachverbrennungsanlage, die(cheAcronym (engl.): CCU(cheAcronym (dt.): KNV(cheA CCU is generally more suitable than an RTO in case of varying gas	em. eng.) bloads.



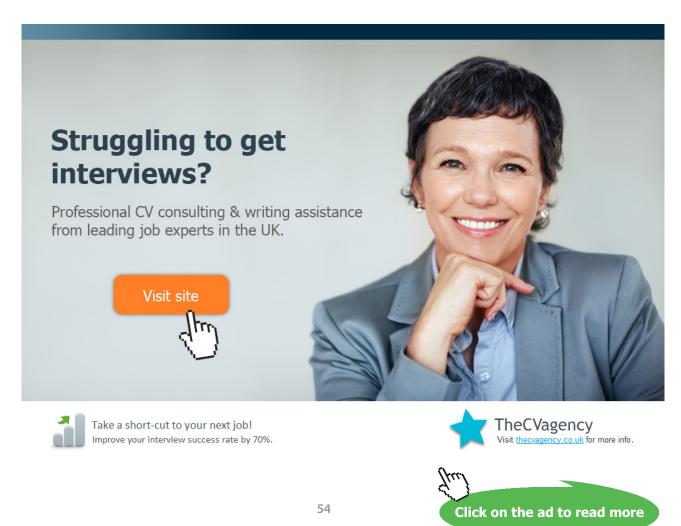
51

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cataplasm	(pharn Acronym/Abbreviation referral: see poultice	n.)
cation	Kation, das (chem	n.)
	K ⁺ , Ca ²⁺ and H ₃ O ⁺ are cations.	
caulking	abdichten, abdichtend (en	g.)
0	Caulking was achieved with silicone.	37
caustic	ätzend (chen	n)
caustic	Potassium hydroxide (KOH), a caustic substance, is the precursor to most liqu	
	soaps.	iiu
caustic soda	Ätznatron, das; Natronlauge, die (chen	n.)
	Sodium hydroxide, also known as caustic soda, is produced in the chloralk	
	process, which involves the electrolysis of an aqueous solution of sodium chlorid	le.
cavitation	Hohlraumbildung, die; Kavitation, die (en	g.)
	High rotor speeds can cause cavitation and severe damage in pumps.	
cavity	Hohlraum, der (en	a)
Cavity	Cavities in teeth can be treated by lasers.	g.)
C-coupling	C-Kupplung, die (en	g.)
	The water hose was equipped with a C-coupling.	
CCR	(ecor	m)
CCR	Acronym/Abbreviation referral: see covenants, conditions, and restrictions)
CCU	(chem. en	g.)
	Acronym/Abbreviation referral: see catalytic combustion unit	
CE marking, CE mark	CE Kennzeichnung, die; CE Zeichen, das (en	g.)
U ¹	The Japanese vendor could not provide CE marking for his machinery.	
~~~~~		
CEFIC	(chen	
	Acronym/Abbreviation referral: Conseil Européen de l'Industrie Chemique; s	see
	European Chemical Industry Council	

ceiling,	Maximalkonzentration, die (	chem.)
ceiling concentration	The ceiling concentration of CO, i.e. the maximum allowable human ex- limit for airborne substances that must not be exceeded even momenta 200 ppm. For methyl alcohol, it is 500 ppm for 10 minutes.	-
cement flooring	Zementestrich, der He decided that a cement flooring of 10 cm thickness would be enough	( <i>eng</i> .)
centimetre gram(me)	CGS-System, das; Zentimeter-Gramm-	(eng.)
second system	Sekunde-System, das The CGS system was replaced by the MKS (metre-kilogram-second) s which in turn was replaced by the International System of Units (SI). S are the three base units of MKS plus ampere, mole, candela and kelvin.	SI units
centrifugal precipitator	Fliehkraftabscheider, der(chenThe yeast cells could be isolated using a centrifugal precipitator.	n. eng.)
centrifugal pump	Kreiselpumpe, die ( <i>chen</i> The centrifugal pump was damaged by cavitation.	n. eng.)
CERCLA	(chen Acronym/Abbreviation referral: see Comprehensive Environmental Re. Compensation & Liability Act	1. eng.) sponse,
cerium (Ce)	Cer, das(Acronym (engl.): Ce(Acronym (dt.) Ce(The rare earth metal cerium (Ce) is liquid from 795°C to 3443°C.	chem.)
certificate of analysis	Analysenzertifikat, das (p Acronym (engl.): CoA The company requires a CoA for each raw material delivery.	harm.)

<b>Certified Pharmacy</b>	Pharmazeutisch-technische(r) Assistent(In), der (die)	(pharm.)
Technician		
	Acronym (engl.): C. Ph. T.	
	Acronym (dt.): PTA	
	The C.Ph.T assisted the physician.	
CFD	(	(chem. eng.)
	Acronym/Abbreviation referral: see computational fluid dynamics	
CFR		(econ.)
	Acronym/Abbreviation referral: see cost and freight	
cGMP		( <i>med</i> .)
	AcronymAbbreviation referral: see current good manufacturing pract	tice
cgs		(eng.)
-	Acronym/Abbreviation referral: see centimetre gram second system	



chain drive	Kettenantrieb, der A chain drive has to be covered so that nobody can accidentally s inside.	(eng.) stick his hand
chairman	Vorsitzender, der The chairman channeled the discussion of the meeting to the cor	(econ.) re items.
challenge	Herausforderung, die Constructing the seemingly impossible is a great challenge for er	(eng.) ngineers.
change order	Änderungsauftrag, der The change order resulted in additional costs and a time delay.	(chem. eng.)
change order request	Antrag auf Änderung des Auftrags, der A change order request is a formal request from the contractor which identifies the additional scope of work, for instance in eng its consequences.	
change order, engineering change order	Änderungsauftrag, der	(chem. eng.)
C	<i>Acronym</i> ( <i>engl</i> .): <i>ECO</i> A change order is a formal order, given to the engineering partner to initiate a change in engineering, usually with a cost implicatio	•
channel tray	Tunnelboden, der The channel tray of the distillation column was made of stainless	(chem. eng.) steel.
characteristic curve	Kennlinie, die A pump should be selected according to its characteristic curve.	(eng.)
characteristic, characteristic	Kennzahl, die	(chem. eng.)
number	The Reynolds number is an important characteristic number of a	ny fluid flow.
charge	Ladung, die K ⁺ and Ca ²⁺ carry one and two charges, respectively.	(chem.)

charge, to	befüllen, beschicken (er The feeders were charged with the raw materials.	ng.)
charged particle	geladenes Teilchen, das (er Charged particles can lead to an ignition.	ng.)
charred cable	verschmortes Kabel, das ( <i>er</i> A charred cable could be identified as the reason for the short circuit.	ng.)
chart	Diagramm, das (s A chart has to be labelled on all axes.	sci.)
check valve, clack valve, non-return valve, one -way valve	Rückschlagklappe, die; Rückschlagventil, das; (chem. er	1g.)
	Check valves are often used when multiple gases are mixed together to prev (back)mixing, e.g. of hydrocarbons into nitrogen.	ent
chelating agent	Komplexiermittel, das (cher EDTA, which stands for ethylenediaminetetraacetic acid $(C_{10}H_{16}N_2O_8)$ , i chelating agent that forms very strong complexes with Mn(II), Cu(II), Fe(II) Pb (II) and Co(III).	is a
chemical	chemisch (chemisch) The chemical industry has to register all of its 70,000 different products und REACH (Registration, Evaluation, Authorisation and restriction of CHemical which is a new European Union Regulation.	der
Chemical Abstracts Service	CAS (cher	<i>m</i> .)
	Acronym (engl.): CAS Chemical Abstracts Service is a division of the American Chemical Soci which produces bibliographic and chemistry databases.	ety
chemical base, base	Base, die (cher Compounds with a $pK_a$ of more than about 13 are called strong bases. Comme examples of strong bases are the hydroxides of alkali metals and alkaline ea metals like NaOH and Ca(OH) ₂ .	non

chemical engineer	Verfahrenstechniker(in), der (die) (chem. eng.) A chemical engineer has to have an understanding of both chemistry and mechanical engineering.	
chemical engineering	Verfahrenstechnik, die (chem. eng.) In her home town, approx. 5 times more students study architecture than chemical engineering.	
chemical grouting	chemische Injektion, die(eng.)The cost estimation of chemical grouting was missing.	
chemical oxygen demand	chemischer Sauerstoffbedarf, der (chem.)	
	Acronym (engl.): COD	
	Acronym (dt.): CSB	
	COD indirectly measures the amount of organic matter in water, e.g. pollutants.	
	Potassium dichromate $(K_2Cr_2O_7)$ , a strong oxidizing agent under acidic conditions, is commonly used for the test.	



chemical reaction engineering, reaction engineering	Reaktionsführung, die	(chem. eng.)
	The institute developed a lot of competence in the field of reaction	n engineering.
Chemical Safety Board Chemical Safety and Hazard Investigation Board (AE)	<b>d,</b> CSB (Aufsichtsbehörde für Chemikaliensicherheit, die)	(chem. eng.)
	Acronym (engl.): CSB CSB, an independent US federal agency, is charged with investigat chemical accidents.	ing industrial
chemical structure	Strukturformel, die	(chem.)
	NMR (nuclear magnetic resonance) can be used to determine structure of an unkown compound.	. ,
chemical vapour deposition	chemisches Aufdampfen, das	(chem.)
	chemical vapor deposition (AE)	
	Acronym (engl.): CVD Acronym (dt.): CVD	
	CVD (chemical vapour deposition) is frequently used in the se	emiconductor
	industry to produce thin films. A typical reaction is $\mathrm{SiH}_4$ + $\mathrm{O_2}$	$> SiO_2 + 2H_2$ .
chemical worker	Chemiewerker, der The chemical worker proposed to replace a malfunctioning valve	(chem. eng.) e.
chemist	Chemiker(in), der (die) The first chemist was probably Antoine Lavoisier with his law of of mass in 1783.	( <i>chem</i> .)
chemistry	Chemie, die Chemistry has its roots in alchemy.	(chem.)
chequer plate	Riffelblech, das <i>checker plate, checker (AE)</i> Checker plate from steel and aluminum was kept in stock in 4'x8	( <i>eng</i> .) 3' sheets.

chew, to	kauen (kaute, gekaut) Chewing gum is made from synthetic rubber.	(general)
child proof, child resistant	kindersicher	(general)
	Child resistant packaging (C-R packaging) is typically used for pesti-	cides.
china clay	Kaolinit, der	(chem.)
	China clay or Kaolinite is a clay mineral with the formula $Al_2Si_2O_5$ (0 a layered silicate.	OH) ₄ . It is
chip	Span, der	(eng.)
	Because he did not wear protective equipment, a chip injured his ski	in.
chipboard	Spanplatte, die	(eng.)
	The carpenter nailed the chipboard down.	
chisel	Meißel, der	(eng.)
	Using a chisel, he could bring the stone into its intended shape.	
chloride	Chlorid, das	(chem.)
	Acronym (engl.): Cl ⁻	
	Acronym (dt.): Cl	
	The melting point of sodium chloride is 801°C.	
chlorinated	chloriert	(chem.)
	Chlorinated water is potable.	
chlorine	Chlor, das	(chem.)
	Acronym (engl.): Cl	
	Acronym (dt.): Cl	
	Chlorine is a powerful oxidant and can be used for bleaching purport	ses.
СНР		(eng.)
	Acronym/Abbreviation referral: see combined heat and power	
chromatography	Chromatographie, die She used HPLC (high performance liquid chromatography) to sep sample.	( <i>chem</i> .) parate her

chrome-plate, to	verchromen	(chem.)
	Chrome-plated car parts are quite popular in the US.	
chromium	Chrom, das	(chem.)
	Acronym (engl.): Cr	
	Acronym (dt.): Cr	
	Chromium, a transition metal used in stainless steel, is the only known	element
	to enter quintuple bonds.	
CIF		(econ.)
	Acronym/Abbreviation referral: see cost, insurance, freight	
		( 1 )
cinnabar	Zinnober, der	(chem.)
	Cinnabar is the name used for the red mineral HgS.	
CIP		(general)
CIT		generui)
	Acronym/Abbreviation referral: see continuous improvement process	
CIP	(che	em. eng.)
	Acronym/Abbreviation referral: see cleaning in process, cleaning in place	U



circuit	Stromkreis, der; Schaltkreis, der (e Electronic circuits are closed paths composed of electronic components thro which an electric current can flow.	eng.) ough
circular saw	Kreissäge, die ( <i>e</i> Last week circular saws were on sale in the local do-it-yourself store.	eng.)
circulating pump	Umwälzpumpe, die ( <i>chem. e</i> The circulating pump was overdesigned.	eng.)
circumference	Umfang, der(eThe circumference of the storage area is 2,500 m.	eng,)
citation	Zitat, das; Zitierung, die(.The article contains 37 citations.	sci.)
citric acid	Zitronensäure, die (che Citric acid, which decomposes above 175°C through the loss of $CO_2$ and H is part of the citric acid cycle and therefore occurs in the metabolism of alm all organisms.	2
city water, citywater, tap water	Leitungswasser, das (e There was plenty of citywater available.	eng.)
claim	Forderung, die; Klage, die; Beanspruchung, die (ec A claim is a demand for financial compensation as a result of a complaint brou forward e.g. by a customer.	on.) 1ght
clamp	Zwinge, die (che The reaction vessel was held in place by clamps.	em.)
clamp	Schraubzwinge, die(eHe could not retrieve the clamps.	eng.)
classifier	Klassieranlage, die(chem. eA classifier can remove over- and undersized particles.	eng.)

clay	Ton, der(chem.)Clay minerals are typically formed over long periods of time by gradual chemical weathering of rocks.
cleaning agent	Reinigungsmittel, das(chem.)Cleaning agents should not leave any streaks on glass surfaces.
cleaning in process, cleaning in place	Reinigung vor Ort, die (chem. eng.)
	<i>Acronym (engl.)</i> : <i>CIP</i> CIP stands for the cleaning of production facilities without the need to dismantle them.
cleanup	Säuberung, die; Aufräumarbeiten, die(chem.)2 workers in hazmat suits were at the cleanup site after the fire.
cleave, to	spalten(eng.)Cleaving wood with an axe is a tough job.
clevis pin	Gabelstift, der; Lastösenbolzen, der(eng.)Clevis pins are used with shackles. They are fasteners that allow rotation of the connected parts.
clinical studies, clinical trials	klinische Studien, die (med.)
	In health care, clinical trials are conducted to collect data about new drugs. The phases range from 0 to IV.
clipper	Karabinerhaken, der(eng.)Clippers are extensively used by climbers.
cloth	Stoff, der (Textil)(chem.)The filter bag is made from cloth.
CNG	(chem. eng.) Acronym/Abbreviation referral: see compressed natural gas

CO ₂ allowance	Bewilligung, die; Freibetrag für $CO_2$ , der Tight $CO_2$ allowances are expected to foster innovation for en production processes.	(chem. eng.) ergy-efficient
СоА	Acronym/Abbreviation referral: see certificate of analysis	(chem.)
coagulant, flocculant	Fällungsmittel, das; Flockungsmittel, das Alum (KAl(SO ₄ ) ₂ .12H ₂ O) is used as a coagulant in water treatme	( <i>chem</i> .) nt.
coagulate, to	gerinnen When he added the acid, the solution immediately coagulated.	(chem.)
coal	Kohle, die; Steinkohle, die Peat can be seen as a precursor of coal. Via lignite (brown coal), sub coal, bituminous coal and finally anthracite can be formed.	(eng.) – bituminous
coal liquefaction	Kohleverflüssigung, die The speaker presented a CTL process that is competitive at curr prices.	( <i>chem. eng.</i> ) rent crude oil



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coal-to-liquid	(chem. en	g.)
	Acronym (engl.): CTL	
	Acronym/Abbreviation referral: see coal liquefaction	
coarse	grob (en	.)
	The comminuition of coarse particles is an energy -consuming process.	
coating	Belag, der; Beschichtung, die (cher	n.)
	The solvent has attacked the coating.	
coating	Beschichtung, die (en	ıg.)
0	The lifetime of soft materials can be prolonged by the application of a suital	-
	coating.	
cobblestone	Kopfsteinpflaster, das (en	ıg.)
	On a cobblestone road, the suspension system of a car can be tested.	
cock	Hahn, der (cher	n.)
	The cock in the byrette was stuck.	,
COD	(cher	n.)
002	Acronym/Abbreviation referral: see chemical oxygen demand	,,,,
code	Norm, die; Standard, der (en	(g.)
	The ASTM code proposed stainless steel.	87
cog wheel	Zahnrad, das (en	(g.)
	Cog wheels can be found in gears.	8.7
cogen	(en	<i>σ</i> )
cogen	Acronym/Abbreviation referral: see cogeneration	g.)
cogeneration,	Kraft-Wärme-Kopplung, die (en	<i>σ</i> )
combined heat	(ch	g.)
and power		
	Acronym (engl.): CHP, cogen	
	Cogeneration (combined heat and power, CHP) is a combustion process the	nat
	strives to capture all available energy from the combustion offgas.	

coil	Spule, die (en The copper coil has a weight of 2.5 kg.	ng.)
coiled spring	Spiralfeder, die (en A coiled spring can store mechanical energy.	ng.)
coke	Koks, der (en Two critical properties of coke, a solid carbonaceous residue derived fr destructive distillation of coal, are ash and sulphur content.	ng.) rom
cold drawing	Kaltziehen, das (en By cold drawing of 1 cm thick copper rods, wires as thin as 1 micrometer diameter can be obtained.	ng.) r in
cold rolling	Kaltwalzen, das (en Cold rolling increases the yield strength and hardness of a metal, beca it introduces defects into the crystal structure of the material below recrystallisation temperature.	
collective lens, collimating lens	Sammellinse, die (en Because of its simple geometry, the collective lens suffers from sphere aberration.	ng.) ical
colour change	Farbumschlag, der(checolor change (AE)When the pH value is increased to 11.6–14, the pH indicator leucomalachgreen (second transition) changes from green to colorless.	
colour scale	Farbskala, die(che.color scale (AE)The colour scale was used for reference purposes.	em.)
column	Säule, die (che The longer the column in chromatography is, the better the separation of mixture under investigation will be.	
combined heat and p	ower (engl.): CHP	ng.)

Acronym/Abbreviation referral: see cogeneration

combustible	brennbar	(chem.)
	Fine dust of combustible material is generally dust explosive.	
combustion	Verbrennung, die 80–90% of the worldwide primary energy production stems from co processes.	(chem.) ombustion
combustion chamber	Brennkammer, die (c. The turbulence in combustion chambers plays a key role in pollutant f	<i>hem. eng</i> .) formation.
combustion point, fire point	Brennpunkt, der	(chem.)
	The flash point of a flammable liquid is the lowest temperature at can form an ignitable mixture in air. At this temperature the vapor burning when the ignition source is removed. A slightly higher ter the fire point, is defined as the temperature at which the vapor con burn autonomously after removal of the ignition source. For oils, the is generally about 10°C higher than the flash point.	r will stop nperature, ntinues to



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comminute, to	fein zerteilen, zerkleinern To comminute solids is an energy-consuming process.	(chem. eng.)
commissioning	Inbetriebnahme, die Commissioning of the new production line was achieved in 2 we	(chem. eng.) eeks.
<b>commitment</b> received.	Verpflichtung, die; Bekenntnis, das; Engagement, das His commitment to the team suffered from an inconsiderate ema	( <i>econ</i> .) il that he had
commodity	Ware, die; Commodity, das; Rohstoff, der; Verbrauchsgut, das; Massenware, die Steel started to be traded as a commmodity on the London Meta 2007.	( <i>econ</i> .) l Exchange in
commodity product	Massengut, das; Commodity, das A commodity product is a material that is freely available in the several competitors. Commodity products are often sold in high at low margins.	
common name	Trivialname, der The common name of 2,2,4 trimethylpentane is isooctane ( $C_8H_{18}$ ) has 18 isomers.	( <i>chem</i> .) . Octane itself
community heating, district heating	Fernwärme, die Community heating is an environmentally friendly technology.	(eng.)
competitor	Konkurrent, der; Mitbewerber, der; Marktbegleiter, der Talking to competitors about prices is considered highly unethic It is also illegal.	( <i>econ.</i> ) cal behaviour.
complaint	Beschwerde, die; Reklamation, die; Beanstandung, die The customer filed a complaint because of poor quality of the pro	(econ.) oduct.
compliance	Einhaltung, die; Erfüllung, die For full compliance with legal regulations, a gas scrubber had to	( <i>general</i> ) be installed.

complying with	entsprechend, das Einhalten von (general) Complying with environmental protection standards is mandatory for a chemical company.
composite	Verbundwerkstoff, der(eng.)Composites are known for their good mechanical properties at low weight.
composite foil	Verbundfolie, die(eng.)The composite foil is made of 7 layers.
composition	Zusammensetzung, die(chem.)The team composition was not balanced.
compound	Verbindung, die; Compound, das ( <i>chem</i> .) Currently, there are more than 81 million organic and inorganic compounds with a CAS number.
Comprehensive Environmental Response, Compensation & Liability Act (AE)	CERCLA (chem. eng.) Acronym (engl.): CERCLA
compressed air	Druckluft, die (eng.) Compressed air can be used to drive equipment in classified areas.
compressed gas cylinder	Druckgasflasche, die(chem. eng.)The compressed gas cylinder was filled with nitrogen at 200 bar.
compressed natural ga	s komprimiertes Erdgas, das (chem. eng.) Acronym (engl.): CNG Acronym (dt.): CNG The energy density of CNG is approx. only 40% of that of LNG (because it is not liquefied) and approx. 25% of that of diesel.
compression stoke	Verdichtungstakt, der(eng.)In an Otto engine, the compression stroke occurs after the intake stroke.

compulsory	gesetzlich, zwingend erforderlich In Germany, it is compulsory to follow the DIN standard for pressur	( <i>general</i> ) e vessels.
computational fluid dynamics	numerische Strömungssimulation, die (chem. eng.)	
	Acronym (engl.): CFD	
	In computational fluid dynamics (CFD), numerical methods and algo solve and analyze problems involving fluid flows are used.	orithms to
concealed	verborgen Debottlenecking can activate concealed plant capacities.	(eng.)
concentration	Konzentration, die The concentration of salt in sea water is approx. 30 g/l.	(chem.)
concomitants	Begleitsubstanzen, die The ore contains 60% of concomitants.	(chem.)
concrete	Beton, der Concrete is a construction material that contains cement.	(chem.)



69

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concurrent	produktbegleitend, gleichzeitig In concurrent engineering, several tasks are carried out in parallel. Th advantages, but bears some risks.	( <i>eng</i> .) his has time
conditioning	Konditionierung, die Conditioning can be understood as a series of operations to bring a specimen into a reference state with regard to temperature and hun	-
cone	Kegel, der The missing part looked like a cone.	(general)
cone crusher	Kegelbrecher, der Cone crushers are used to comminute stones.	(eng.)
conference proceedings	Tagungsbericht, der Conference proceedings belong to the so-called grey literature.	(sci.)
confined	eingeschränkt, beschränkt Gunpowder, when unconfined, burns gently.	(general)
congeal, to	gerinnen, fest werden, erstarren When a substance congeals, its viscosity increases. This can be ach reduction in temperature or by chemical reactions.	( <i>chem</i> .) nieved by a
congestion	Verstopfung, die Nasal congestion may be caused by an allergic reaction due to hay b	(pharm.) fever.
conical flask, Erlenmeyer flask,	Spitzkolben, der	(pharm.)
E-flask	The conical flask broke upon exposure to the open flame of a Bunse	en burner.
conjunctivitis, pink eye	Bindehautentzündung, die	(pharm.)
phik cyc	Bacterial conjunctivitis is usually treated with antibiotic eye drops or which can contain fusidic acid $(C_{31}H_{48}O_6)$ .	ointments
connecting rod	Pleuelstange, die The connecting rod of his car was chrome-plated.	(eng.)

consignment stockKonsignationslager, das(econ.)Since the ownership of consignment stock is not transferred from the<br/>manufacturer to the customer until use, invoicing is not done immediately.

constant flow stirred	(	chem. eng.)
tank reactor	Acronym/Abbreviation referral: see Continuous Stirred Tank Reactor	
	Actonym/Addreviation rejertal. see Continuous Stirtea Tank Reactor	
constant weight	Gewichtskonstanz, die	(pharm.)
	A constant weight of the final product is ensured by monthly	instrument
	calibration.	
constituent	Bestandteil, der	(chem.)
	Carbon black is a constituent of most dark pigments.	
annetitution diagnam	Dhasan diagnamme dag	(ale and a)
constitution diagram,	Phasendiagramm, das; (	chem. eng.)
constitutional diagram	Zustandsdiagramm, das; Zustandsschaubild, das; (	chem. eng.)
	In metallurgy, a constitutional diagram (phase diagram) is a	a graphical
	representation of phase-stability relationships in an alloy system as	a function
	of temperature.	
consultant	Berater, der	(econ.)
	He worked for a consultant before founding his own business.	
contaminated	verseucht, kontaminiert	(chem.)
containinated	Soil contaminated with hydrocarbons needs to be disposed of in a s	. ,
	······································	
contingency	Eventualität, die; Schadensmöglichkeit, die	(econ.)
	The cost estimation contained 10% contingency.	
continuous casting	Stranggießen, das	(eng.)
0	Continuous casting is a process to produce steel bars.	
continuous concrete	Gussbeton, der	(eng.)
	The mixer for continuous concrete broke down.	

continuous	kontinuierlicher Verbesserungsprozess, der	(general)
improvement process		
	Acronym (engl.): CIP	
	Acronym (dt.): KVP	
	A continuous improvement process based on Kaizen was introduc	ced.
Continuous Stirred	kontinuierlich betriebener idealer Rührkessel, der	(chem. eng.)
Tank Reactor	Acronym (engl.): CSTR	
	Acronym (dt.): KIK	
	The CSTR, also known as vat – or backmix reactor, is an ideal where perfect mixing is assumed. Another ideal type is the PFR.	reactor type
Continuously Stirred		(chem. eng.)
Tank Reactor		
	Acronym/Abbreviation referral: see continuous stirred tank reactor	



continuous tubular reactor	kontinuierlicher Rohrreaktor, der	(chem. eng.)
	<i>Acronym (engl.): CTR</i> PFRs are also sometimes called CTRs. The key assumption of PF fluid is perfectly mixed in the radial direction but not in the axia	
contract	Vertrag, der A contract stipulates rights and obligations of all parties involved	(econ.) I.
contract for work and	-	(econ.)
labour, service contrac	ct contract for work and labor (AE)	
	The service contract was issued for last week.	
contractor	Auftragnehmer, der The contractor was urged to hand in the weekly report.	(econ.)
contraindication	Gegenanzeige, die So far, no contraindictions were known about the drug.	(pharm.)
contribution	Beitrag, der His contribution was not appreciated.	(general)
control a process, to	einen Prozess steuern The process in controlled by an experienced operator.	(chem. eng.)
control panel	Steuerpult, das An operator working at the control panel of a plant has to be able stressful situations.	( <i>chem. eng.</i> ) e to cope with
control room, control station	Leitstand, der; Leitwarte, die; Schaltwarte, die	(chem. eng.)
	3 operators were sitting in the control room when the incident h	appened.
control signal	Stellsignal, das In closed-loop control of a process, a sensor response results in a that affects the process.	( <i>chem. eng</i> .) control signal

control valve	Regelklappe, die; Regelventil, das (eng.) A control valve can be used to control operating conditions such as temperature, pressure, flow, and liquid level in a chemical plant.
control, to; drive, to; activate, to;	ansteuern (eng.)
activate, to,	The operator activated the valve.
controlled atmosphere	Schutzgas, das(chem.)A controlled atmosphere in food packaging can extend the shelf life significantly.
conveying belt, conveyor belt	Förderband, das (chem. eng.)
	Conveyor belts are often made from reinforced rubber.
coolant	Kühlflüssigkeit, die; Kühlmittel, das (eng.) An ideal coolant or heat transfer fluid shows high thermal capacity, low viscosity and chemical inertness.
copper	Kupfer, das(eng.)Acronym (engl.): CuAcronym (dt.): CuCopper, which like gold does not have a silvery luster typical of metals, has the second highest electrical and thermal conductivity of a pure metal after silver.The Statue of Liberty contains 81 tonnes of copper.
cord set	konfektionierte Leitung, die; Kabelset, das(eng.)The cord set was made from flame-retardant plastics.
corollary	logische Konsequenz, die; Folgerung, die; Korollar, das (general) The mathematician could prove the corollary.
corotating	gleichläufig (eng.) For polypropylene compounding, corotating twin screw extruders are commonly used.

corporate social	unternehmerische Sozialverantwortung, die	(econ.)
responsibility		
	Acronym (engl.): CSR	
	CSR, also called corporate citizenship and responsible business, is a	concept
	whereby organizations consider the interests of society by taking responsibility	
	for the impact of their activities on customers, suppliers, employees, shareholders,	
	communities and other stakeholders, as well as the environment.	
corrosion	Korrosion, die	(chem.)
	In passivation, a thin film of corrosion products is formed on a metal's	surface,
	acting as a barrier to further corrosion.	
corrugated cardboard	Wellpappe, die; Wellkarton, der	(eng.)
	The glass was wrapped in corrugated cardboard.	
corundum	Korund, der	(chem.)
	Corundum has a Mohs hardness of 9 (diamond is 10).	

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cosine	Kosinus, der The cosine of an angle is the ratio of the length of the adjacent side to the l of the hypotenuse, whereas the sine of an angle is the ratio of the length opposite side to the length of the hypotenuse. The tangent of an angle ratio of the length of the opposite side to the length of the adjacent side.	of the is the
cost allocation	Kostenzuteilung, die; Kostenzuordnung, die ( For cost allocation, the steam consumption of the various process units h be estimated.	<i>econ</i> .) nad to
cost and freight	Kosten und Fracht (Incoterm)(Acronym (engl.): CFRThe reactor was delivered "CFR Shanghai", meaning that the customer hpick it up in the harbour.	<i>econ</i> .) nad to
cost center	Kostenstelle, die There was an overrun in his costcenter.	(eng.)
cost of capital	Kapitalkosten, die ( The costs of capital in a company depend on its debt/equity ratio.	econ.)
cost overrun	Kostenüberschreitung, die ( Due to a lack of engineering resources, the project experienced a cost ov of 15%.	econ.) verrun
cost, insurance, freigh	<b>t</b> Kosten, Versicherung, Fracht (Incoterm) ( <i>Acronym (engl.): CIF</i> Buyer and seller agreed on CIF.	econ.)
cotton	Baumwolle, die Gossypol ( $C_{30}H_{30}O_8$ ), a polyphenol derived from the cotton plant contraceptive properties. Cotton is used to make textiles.	( <i>eng</i> .) t, has
cotton wool	Watte, die(acotton batting (AE)Cotton wool is obtained from cotton by purification, bleaching and steriliz	chem.) cation.
cotton plug	Wattebausch, der (ph The lab assistant dipped a cotton plug inside the fleaker.	arm.)

cough syrup	Hustensaft, der Cough syrup contains cough suppressants and expectorants. (methylmorphine, $C_{18}H_{21}NO_3$ ) is one of the strongest cough suppress	
counterbalance, counterweight	Gegengewicht, das	(eng.)
	A counterweight is often used in elevators and cranes.	
countercurrent	Gegenstrom, der In a concurrent (co-current, parallel) heat exchanger, thermal equi achieved, where the hot and the cold fluid reach the same tempera countercurrent heat exchanger, the cold fluid becomes hot and the becomes cold.	ture. In a
covalent	kovalent The covalent triple bond in $N_2$ has an energy of 418 kJ/mol.	(chem.)
covenants, conditions and restrictions	Vereinbarungen, Bedingungen und Einschränkungen, die <i>Acronym (engl.): CCR</i> The CCR can be found on the company website.	(econ.)
СРТ	Acronym/Abbreviation referral: see carriage paid to	(econ.)
crab, trolley (travelling ~)	Laufkatze, die	(eng.)
	<i>crab, trolley (traveling ~)(AE)</i> The (travelling) trolley has to be overhauled every 2 years.	
cracking	Rissbildung, die Cracking is a form of fatigue.	(eng.)
cracking pressure, crack pressure	Berstdruck, der; Öffnungsdruck, der	(eng.)
-	The cracking pressure is the minimum pressure at which a check operate.	valve will
craft	Handwerk, das Crafts can be grouped by the use of a certain material such as wood, or metal.	( <i>eng</i> .) clay, glass

craftsman	Handwerker, der The craftsman could repair the machine within 1 hour.	(eng.)
crane	Kran, der A construction site can be seen from a distance because of the cranes.	(eng.)
crank shaft	Kurbelwelle, die His main expertise is crank shaft design.	(eng.)
creep	Kriechen, das Unlike brittle fracture, creep is a deformation mechanism rather than a n failure. It does not occur suddenly, but steadily upon the application of	
crevis corrosion	Spaltkorrosion, die Crevice corrosion can be caused by a high concentration of impurities chlorides in the crevice ("hideout") or differential electrolyte chemistry and outside the crevice.	

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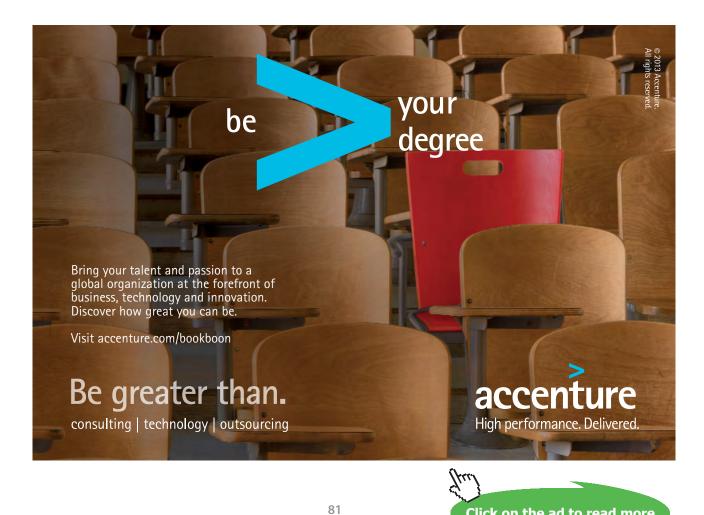




crimp of a tube	Tubenfalz, der A crimp is obtained by joining two pieces of metal or any othe material by deforming them, e.g. as on a tube.	( <i>pharm</i> .) er malleable
crimp, to	verbördeln The liquid was leaking out because the tube had not been properly	( <i>pharm</i> .) y crimped.
critical	kritisch Critical steps deserve sufficient planning.	(eng.)
cross section	Querschnitt, der The cross section of a pipe has a strong influence on the flow resis	(eng.) stance.
crucible	Tiegel, der The crucible broke when it hit the ground.	(chem.)
crude	Acronym/Abbreviation referral: crude oil	(chem. eng.)
crude oil, petroleum	Rohöl, das; Erdöl, das Crude oil (petroleum) contains 0.5 to 6% sulfur. The hydrocarl grouped into paraffins, naphthenes, aromatics and asphaltics.	(chem. eng.) bons can be
crude ore	Roherz, das The total world reserves of crude iron ore are 800 billion tons. T approx. 230 billion tons of iron. The global crude steel producti billion tons in 2006.	•
cryogenic	tieftemperatur- Lead salt diode lasers require cryogenic cooling.	(eng.)
cryogenic vial	Dewargefäß, das The cryogenic vial could keep liquid nitrogen for 5 hours.	(pharm.)
CSB	Acronym/Abbreviation referral: see Chemical Safety Board	(chem. eng.)

CSR	(econ. Acronym/Abbreviation referral: see corporate social responsibility
CSTR	(chem. eng Acronym/Abbreviation referral: see Continuous Stirred Tank Reactor
CTL	(chem. eng Acronym/Abbreviation referral: see coal-to-liquid
CTR	(chem. eng Acronym/Abbreviation referral: see continuous tubular reactor
culture broth, nutrient broth	Nährboden, der (pharm.
	The most common growth media for microorganisms are nutrient broths an agar plates.
culture medium, growth medium	Nährmedium, das (pharm.
Bro en	Antibiotics were added to the growth media as selective growth compounds for bacteria.
cumene	Cumol, das; Isopropylbenzen, das ( <i>chem.</i> Cumene (isopropylbenzene) is an aromatic hydrocarbon that can be found i crude oil. Nearly all the cumene is used to produce phenol and acetone vi cumene hydroperoxide $(C_6H_5C(CH_3)_2-O-O-H)$ .
cure, to	härten, vulkanisieren (chem. Vulcanization is a specific curing process of rubber that involves high temperatures and the addition of sulfur.
curing	Vulkanisieren, das (chem. eng. Curing is the hardening of a polymer material by cross-linking, which can b achieved by chemical agents, radiation or heat.
current Good Manufacturing Practice	aktuelle gute Herstellungspraxis, die; aktuelle GMP, die (med.
	<i>Acronym</i> ( <i>engl</i> .): <i>cGMP</i> The US laboratory was working accoring to cGMP.

curriculum vitae	Lebenslauf, der <i>Acronym (engl.): CV</i> Her CV was updated.	(general)
customer	Kunde, der Ultimately, it is the customer who pays the wages.	(econ.)
customer requirements	Kundenanforderungen, die Translating customer requirements into new products is a key succe any corporation.	(econ.) ess factor of
customs clearance	Zollabfertigung, die; Verzollung, die Customs clearance was delayed because of missing documents.	(econ.)
cut-off wheel	Trennscheibe, die Cut-off wheels often contain Al ₂ O ₃ particles.	(eng.)
cutting torch	Schneidbrenner, der The cutting torch was operated on acetylene and oxygen.	(eng.)



CV		(general)
	Acronym/Abbreviation referral: see curiculum vitae	
CVD		(chem.)
	Acronym/Abbreviation referral: see chemical vapour deposition	n
daily allowance	Taggeld, das	(econ.)
	The employee did not know that he was entitled to a daily allo	owance of 35 Euro
	in the US.	
dampen, to	dämpfen	(eng.)
-	Vibrations in machinery need to be dampened.	
dangerous good	Gefahrenstoff, der	(chem.)
0 0	Dangerous goods include materials that are radioactive, flam	nmable, explosive
	or corrosive, biohazardous, toxic, oxidizers, asphyxiants, pat	-
	substances and organisms, but also physical condititions as	e e
	or hot materials.	
dark room	Dunkelkammer, die	(eng.)
	With the proliferation of digital cameras, dark rooms have be	ecome pretty rare.
darting flame	Stichflamme, die	(chem.)
	The ignition resulted in a darting flame.	
data logger	Messwerterfasser, der; Datenlogger, der	(eng.)
	The resolution of the data logger is 0.05 psi.	
davit	Ladebaum, der; Davit, der	(eng.)
	The rescue boat was attached to the davit.	
day supervisor	Tagmeister, der	(chem. eng.)
	The day supervisor had 10 years of work experience.	
days of inventory	Reichweite des Lagers, die	(econ.)
	Acronym (engl.): DOI	
	The days of inventory is the number of days that finished goo support forecast sales.	ods inventory will
	support forecust sales.	

DC		(eng.)
	Acronym/Abbreviation referral: see direct current	
DDP		(econ.)
	Acronym/Abbreviation referral: see delivery duty paid	
DDU		(econ.)
	Acronym/Abbreviation referral: see delivery duty unpaid	
deacidify, to	entsäuern	(pharm.)
	The researcher developed a spray to deacidify historic paper doe harming inks or discoloring paper.	cuments without
dead lime	gebrannter Kalk, der	(chem.)
	Dead lime consists of CaO.	
dead weight,		
deadweight	Leergewicht, das	(pharm.)
	The dead weight of the glass container was 13.5 g.	
deaerate, to	entlüften	(eng.)
	Fluidized powders can be deaerated by storing them in a silo	for some time.
deaeration valve	Abströmventil, das	(chem. eng.)
	The deaeration valve was designed for a maximum flow of 10	$m^3/s$ .
debottleneck, to	einen Engpass beseitigen	(chem. eng.)
	The plant was debottlenecked from 32 kt/a to 42 kt/a.	
debt	Schulden, die	(econ.)
	The debt to equity ratio is known as "gearing".	
decant, to	dekantieren	(chem.)
	The solution was decanted to remove solids.	
decommissioning	Außerbetriebnahme, die	(chem. eng.)
0	Decommissioning of the plant had to be postponed because the	U U
	not yet operational.	

decomposition	Zersetzung, die Thermal decomposition (thermolysis) is usually an endothermic p is required to break chemical bonds in the compound, e.g. CuCO CuO (black) + $CO_2$ .	
deduster	Windsichter, der Dedusters can handle large volumes of air.	(chem. eng.)
dedusting plant	Entstaubungsanlage, die The dedusting plant was designed for class ST3 materials.	(chem. eng.)
dedusting, dust collection	Entstauben, das Dust collection can prevent the accumulation of dangerous cond combustible material in a plant.	(eng.)
default value	Standardwert, der; Vorgabewert, der; Einstellwert, der The default value was a flow of 35 m³/h.	(eng.)



84



degas, to	entgasen The polymer pellets had to be degassed in order to get rid of unreacted m	( <i>chem</i> .) ionomer.
degenerate	entartet Degenerate states have the same energy level.	(chem.)
degradation product	Abbauprodukt, das Peroxides can be formed as dangerous degradation products from eth	( <i>chem</i> .) ners.
degrease, to	entfetten Prior to applying the paint, the surface had to be degreased.	(chem.)
dehydration	Wasserentzug, der Food can be preserved by dehydration.	(chem.)
deliquescent	zerfließend Calcium chloride (CaCl ₂ ), magnesium chloride (MgCl ₂ ) and zinc $(ZnCl_2)$ are not only hygroscopic, but even deliquescent salts.	( <i>chem</i> .) chloride
delivered duty paid, delivery duty paid	geliefert verzollt	(econ.)
	<i>Acronym (engl.): DDP</i> The company made an attractive offering based on DDP.	
delivered duty unpaid delivery duty unpaid	, geliefert unverzollt (Incoterm)	(econ.)
	Acronym (engl.): DDU DDU is an Incoterm.	
deluge	Überschwemmung, die; Regenguss, der The plant was in an area with increased risk for deluges.	(general)
demi water	(ch Acronym/Abbreviation referral: see demineralised water (short form of	em. eng.) ~)
demineralised water	Deionat, das; vollentsalztes Wasser, das; VE Wasser, das (cha de mineralized water (AE) The demi water unit was designed for 10 m ³ /h.	em. eng.)

demix, to; unmix, to; segregate, to	entmischen (chem.)	
	Powders that have a broad particle size distribution often tend to demix in a silo.	
demotion	Degradierung, die; Herabstufung, die(econ.)2 months after his demotion, the employee quit.	
demulcent	lindernd; Linderungsmittel, das (pharm.) Lozenges may contain benzocaine, an anesthetic, or eucalyptus oil. Non- menthol throat lozenges generally use either zinc gluconate glycine or pectin as an oral demulcent.	
demurrage	Liegezeit, die; Liegegeld, das; Lagergeld, das; Demurrage, die (econ.) The project team underestimated the demurrage costs of the containers.	
denatured	vergällt (chem.) Denatonium, the most bitter compound known to date, is sometimes added to denaturated alcohol.	



DeNOx plant, denitrification unit	Entstickungsanlage, die	(chem. eng.)
	The boiler was retrofitted with a small DeNOx plant.	
density	Dichte, die Acronym (engl.): ρ Acronym (dt.): ρ At room temperature, the density of mercury (Hg) is 13.53 g/cm	( <i>chem</i> .) ³ .
department	Abteilung, die The budget of the R&D department was cut by 10%.	(econ.)
department head	Abteilungsleiter, der The head of the IT department left the company.	(econ.)
deplete, to	abreichern, erschöpfen The mine was depleted 10 years ago.	(chem.)
depreciate, to	abschreiben The forklift was depreciated over 7 years.	(econ.)
depreciation	Abschreibung, die A typical duration for plant depriciation is 5–20 years, depending o	( <i>econ</i> .) on the process.
derivative	Derivat, das The ester methyl benzoate is a derivative of methanol.	(chem.)
derrick	Bohrturm, der; Ladebaum, der; Ladekran, der There were dozens of derricks in the docks.	(eng.)
descale, to	entkrusten, entzundern, entkalken Descaling agents (descalants) work via dissolving the deposits (e. lactic acid, citric acid, sorbic acid, phosphoric acid or hydrochlori chelation (e.g. phosphonates).	-
desiccant	Trocknungsmittel, das; Sikkativ, das Potassium carbonate (K ₂ CO ₃ ) can be used as a desiccant. Its me 891°C.	( <i>chem</i> .) elting point is

desiccator	Exsiccator, der The sample was stored in a desiccator.	(chem.)
design capacity	Auslegungskapazität, die The design capacity of the plant is 350 kt/a.	(chem. eng.)
design of experiment	Versuchsplanung, die <i>Acronym (engl.): DoE</i> A software package for statistical design of experiment will a minimize your time spent in the lab and increase the quality of you the same time.	-
design pressure	Auslegungsdruck, der The design pressure of the fuel pipeline was 10 bar.	(chem. eng.)
desulfurization	Entschwefelung, die The Claus process is a large-scale desulfurization process which refineries.	(chem. eng.) n is used in
detail engineering	Detail Engineering, das; Detailkonstruktion, die Detail Engineering is the phase that typically follows Basic Engine	( <i>chem. eng</i> .) eering.
development	Entwicklung, die Product development has to take both market requirements and plan into consideration.	( <i>sci.</i> ) t capabilities
deviation	Abweichung, die A recipe deviation will result in different properties of the produc	( <i>sci</i> .) t.
device	Vorrichtung, die Last year, a patent was granted for his testing device.	(eng.)
dew point	Taupunkt, der The dew point is associated with relative humidity.	(chem.)
dewatering	Entwässerung, die Before sewage sludge can be burnt, it needs to be dewatered.	(chem.)

dextrorotary	rechtsdrehend	(pharm.)
	Some compounds are optically active, i.e. they can rotat	e plane polarized light
	clockwise (dextrorotation) or counterclockwise (levorotat	ion). Such a compound
	with dextrorotation is called dextrorotary, while one with	levorotation is termed
	levorotary. It consists of chiral molecules.	
diagonal cut	Schrägriss, der	(eng.)
	In the diagonal cut, the openings of the boiler can be se	en.
diameter	Durchmesser, der	(eng.)
	The diameter of a human hair is approx. 40 $\mu\text{m}.$	
diaphoresis	Schweißabsonderung, die	(pharm.)
	A low oral dose of 1,4-butanediol (< 2 ml) may result in a	diaphoresis and ataxia,
	while higher doses (2–5 ml) may result in loss of conscio	ousness. 1,4-butanediol
	$(HO(CH_2)_4OH)$ can be converted into the important so	olvent tetrahydrofuran
	(THF, oxacyclopentane, $C_4H_8O$ ).	



diaphragm valve, membrane valve	Membranventil, das	(chem. eng.)
	Diaphragm valves are commonly used for corrosive substance pharmaceutical industry.	ces and in the
diatom	Kieselalge, die; Diatomee Diatomaceous earth consists of fossilized remains of diatoms, a shelled algae.	( <i>pharm</i> .) a type of hard-
diatomite,	Kieselgur, die	(pharm.)
diatomaceous earth	The typical chemical composition of diatomaceous earth is 8 sodium, 3% magnesium and 2% iron.	36% silica, 5%
die	Pressstempel, der; Matrize, die Dies are make from highly wear-resistant materials.	(eng.)
die plate	Düsenplatte, die; Lochplatte, die A die plate is a metal plate with numerous holes that can be used of a melt.	( <i>eng</i> .) for pelletising
die swell	Strangaufweitung, die Die swell, the expansion of a melt strand after leaving a die, is p the melt elasticity.	( <i>chem. eng</i> .) proportional to
differential scanning	Differential-Scanning-Kalorimetrie, die	(chem.)
calorimetry	<i>Acronym</i> ( <i>engl.</i> ): <i>DSC</i> By the thermoanalytical technique DSC, phase transitions of a studied.	sample can be
differentiate, to	ableiten, differenzieren The function $y = x^{(\frac{1}{3})}$ cannot be differentiated at $x = 0$ .	(sci.)
diffraction	Beugung, die Diffraction, wich occurs with all waves when they hit an ob strongest effect with waves where the wavelength is on the order of of the diffracting objects.	

digestion	Aufschluss, der Microwave digestion is a time-efficient process.	(chem.)
	Microwave digestion is a time-encient process.	
digit	Stelle, die (Zahlen)	(eng.)
C	A billion has 10 digits.	
diluent	Verdünnungsmittel, das	(chem.)
	Organic peroxides are often phlegmatized by using a diluent.	
dilute, to	verdünnen	(chem.)
	In order to feed the color at a constant rate, it had to be diluted.	(0.00000)
dilution	Verdünnung, die	(chem.)
	Increasing the production volume will lead to a fixed cost dilution	1.
dimensionless quantity	dimensionslose Größe, die	(chem. eng.)
unitensioness quantity	The Reynolds number, a dimensionless number, is the ratio of in	0,
	to viscous forces in a fluid (the units cancel out). Laminar flow of	
	Reynolds numbers, where viscous forces are dominant, whereas tu	rbulent flow
	occurs at high Reynolds numbers, were inertial forces dominate.	The relative
	density is another dimensionless quantity.	
dimensionless	dimonsionaloss Davatellung die	(channe ang)
representation	dimensionslose Darstellung, die	(chem. eng.)
representation	Dimensionless representations can be used as an aid for scale-up.	
diopter	Dioptrie, die	(eng.)
	He is shortsighted on both eyes (-2.5 and -3.0 diopters).	
dip, to	eintauchen	(chem.)
up, to	The semi-finished article was dipped into a cleaning bath.	(cnem.)
dipole	Dipol, der	(chem.)
	Molecules with a permanent dipole moment are known as polar r	nolecules.
dintuha	Tauchrohr das	$(\alpha \alpha \alpha)$
diptube	Tauchrohr, das The diptube is made from stainless steel.	(eng.)
	The alphabe is made from summess steel.	

direct current	Gleichstrom, der <i>Acronym (engl.): DC</i> Batteries, thermocouples and solar cells produce direct current.	(eng.)
directional control valve	Wegeschieber, der; Wegeventil, das	(eng.)
	A directional control valve is used to direct hydraulic fluids.	
discard, to	verwerfen The scientist discarded this theory.	(general )
discharge	Ablauf, der; Entleeren, das; Entladung, die The vessel was discharged.	(general)
discolouration	Verfärbung, die <i>discoloration (AE)</i> Discoloration of metal surfaces is a sure sign of thermal stresses.	(eng.)



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disinfect, to	desinfizieren (pharm	n.)
	The technician disinfected the surface of the table with isopropanol (2-propan	ol,
	$C_{3}H_{8}O$ ).	

disinfectantDesinfizierungsmittel, das(pharm.)Often, household disinfectants contain denatonium to discourage<br/>ingestion. Denatonium, a quaternary ammonium cation, is the most bitter<br/>chemical compound known to date. Denatonium benzoate ( $C_{28}H_{34}N_2 O_3$ ,<br/> $C_{21}H_{29}N_2O\cdot C_7H_5O_2$ ) and denatonium saccharide are commonly used, also to<br/>denature alcohol.

- dismantle, tozerlegen(eng.)The student dismantled the TV set to learn more about its setup.disordersdisordersBeschwerden, die (körperlich)(pharm.)Patients suffering from allergic disorders often avoid exposure to pollen.dispatch, toabfertigen, absenden, befördern(econ.)The sample was dispatched as a rush order.dispatch.
- displace, toverdrängen(general)The weight of an object floating on water equals exactly that of the water which<br/>it displaces.
- disposablewegwerfbar, Einweg-, verfügbar(general)Disposable packaging made from plastics can be thermally recycled.
- disposalEntsorgung, die<br/>The disposal of chemical waste is strictly regulated.(general)dispose of, toentsorgen(chem.)
- Dangerous waste needs to be disposed of according to local regulations.

   distill, to
   destillieren
   (chem.)

   Distillation is a unit operation. It is the separation of a mixture based on differences in the volatilities of the constituents in a boiling liquid mixture.
- distillationDestillation, die(chem.)Water can be purified by distillation or filtration.

distribution tray	Verteilerboden, der; Verteilerrinne, die The pipes deliver water into a distribution tray.	(chem. eng.)
district heating, community heating	Fernwärme, die	(eng.)
7 0	Vienna has an ample district heating system.	
disuse	Nichtgebrauch, der; Nichtbenutzen, das Ball valves are durable and usually achieve perfect shutoff ev disuse.	( <i>chem. eng</i> .) en after years of
diverging lens	Zerstreuungslinse, die If a lens is concave, a collimated (parallel) beam of light passin be diverged (spread); the lens is termed a negative or diverging convex, a collimated beam passing through the lens will be conv In that case, the lens is termed a positive or converging lens.	g lens. If a lens is
diverter valve	Weiche, die Diverter valves are used in pneumatic conveying systems.	(eng.)
division	Bereich, der The company has 3 divisions.	(econ.)
dizziness	Schwindelgefühl, das Symptoms of carbon monoxide poisoning include dizziness ar	( <i>med</i> .) nd fatigue.
DoE	Acronym/Abbreviation referral: see design of experiment	(sci.)
dose	Dosis, die Quantities of nutrients, drugs, and toxins are referred to as do	(pharm.) oses.
dosing aid	Dosierhilfe, die The worker used a scoop as dosing aid.	(chem.)
double bond	Doppelbindung, die In contrast to $\text{Cl}_2$ , there is a double bond in $\text{O}_2$ .	(chem.)

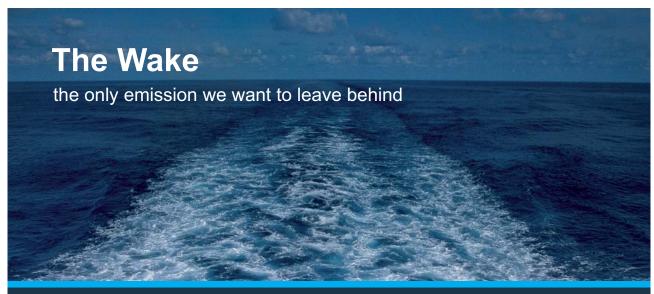
double jacket	Doppelmantel, der The mixer is bested vie e double insket	(eng.)
	The mixer is heated via a double jacket.	
doubling time	Generationszeit, die	(pharm.)
	When the relative growth rate (not the absolute growth rate)	is constant, one
	speaks about exponential growth, which has a constant doubli	ng time.
doughy	teigartig	(pharm.)
	The ointment had a doughy consistency.	Y ,
downgauging	Dickenreduktion, die	(chem. eng.)
	The packaging industry has invested heavily in R&D for de	owngauging. By
	reducing the wall or film thickness of packaging materials, di	sposal costs can
	be reduced.	
downstream	nachgelagert, nachgeschaltet, flussabwärts	(chem. eng.)
	After pelletizing, the product is treated in several downstream	1 processes such
	as drying, metal separation, classifying and packaging.	
	Dickenreduktion, die The packaging industry has invested heavily in R&D for de reducing the wall or film thickness of packaging materials, di be reduced. nachgelagert, nachgeschaltet, flussabwärts After pelletizing, the product is treated in several downstream	owngauging. By sposal costs can ( <i>chem. eng.</i> )



downtime	Stehzeit, die; Stillstandszeit, die A malfunctioning valve could be identified as the root cause for downtime of the plant.	(econ.) r a 3-hour
draft	Entwurf, der The draft layout of the plant was subjected to a review.	(eng.)
drain	Abfluss, der Concentrated acid must not be poured down the drain.	(chem.)
drain nipple	Ablassstutzen, der Drain nipples should be placed at the lowest possible position.	(eng.)
drain valve	Ablassventil, das (o The drain valve was plugged.	chem. eng.)
drain, to	entwässern, ablassen After production, the water bath had to be drained completely.	(eng.)
draught tube, draught box	Leitrohr, das (a draft tube (AE)	chem. eng.)
	A draught tube, which is also called draught box, is used with wate	r wheels.
dredge	Flussbagger, der A dregde is an excavator (digger) that operates under water.	(eng.)
drilling rig	Bohrinsel, die Drilling rigs can be reached by helicopter.	(eng.)
drip, to	träufeln He dripped the acid onto the sample to check for the presence of ca	( <i>pharm</i> .) arbonates.
drive train, power train	Antrieb, der; Antriebstrang, der The powertrain of a car consists of engine, transmission, driveshaft, o and the final drive (wheels).	( <i>eng</i> .) lifferential,
drop closure	Tropfverschluss, der The drop closure was malfunctioning.	(pharm.)

drop, to	tropfen, Tropfen, der A drop of water has a volume of typically 0.05 ml.	(pharm.)
droplet	Tröpfchen, das Droplets are small drops (liquid particles) of <500 μm diameter.	(pharm.)
dropping bottle	Tropfflasche, die The pH indicator was stored in a dropping bottle with a ground glass a pipette.	( <i>chem.</i> ) s joint and
drowsiness	Schläfrigkeit, die; Benommenheit, die The inhalation of $CO_2$ led to drowsiness in the worker.	(chem.)
drug	Droge, die; Heilmittel, das; Medikament, das; Arznei, die; Wirkstoff, der Drugs must not be confused with addictive drugs. Several drugs can be without prescription.	( <i>pharm</i> .) e obtained
drug-resistant	resistent gegenüber Arzneimitteln The patient was found to be drug-resistant.	(pharm.)
dry end	Austragsteil, der (ch The dry end (downstream part) of a polymerisation plant includes a a pelletising unit.	<i>hem. eng</i> .) dryer and
drying agent, desiccan	<b>t</b> Trockenmittel, das Silica gel, calcium chloride, and molecular sieves can be used as desi	(pharm.) iccants.
drying oven	Trockenschrank, der The drying oven was heated to 115°C.	(pharm.)
dry wall, drywall, gypsum board, wallboard, plasterboard	Trockenmauer, die	(eng.)
	Drywall panels contain gypsum (CaSO ₄ .2 $H_2$ O), which can be mined o from flue gas desulfurization.	r obtained

DSC		(chem.)
	Acronym/Abbreviation referral: see differential scanning calorimety	,
due	fällig	(econ.)
	The due date was yesterday.	
dump	Notentleerung, die; Notentspannung, die	(chem. eng.)
	The reactor was dumped because of a disturbance of the process.	
dust	Staub, der	(eng.)
	Dust from this process is typically between 1 and 10 $\mu m$ large.	
dust extraction system	Entstaubungssystem, das	(chem. eng.)
	The dust extraction system was a significant improvement	for operator
	satisfaction.	
dust tight	staubdicht	(pharm.)
	The packaging was not dust tight.	



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dwell time	Aufenthaltszeit, die see residence time	(pharm.)
dye	Farbstoff, der Triphenylmethane (Ph ₃ CH, ( $C_6H_5$ ) ₃ CH) is the basis for several synthe the so-called triarylmethane dyes. They are used as food dyes.	( <i>chem</i> .) etic dyes,
dye, to	färben Dying of natural fibres needs to take into account fluctuations in raw brightness.	(eng.) material
dynamic friction	Gleitreibung, die To maintain constant speed, dynamic friction has to be overcome.	(eng.)
dyne	Dyn, das Dyne is an outdated unit of force, which was used in the cgs system. 10 $\mu$ N.	( <i>eng</i> .) 1 dyne =
dyspnoea	Atemnot, die <i>dyspnea (AE)</i> If swallowed, acetic acid (methane carboxylic acid) can lead to dyspne	(chem.) oea.
ear plugs	Ohrenstöpsel, die; Gehörschutzstöpsel, die Since the noise in the plant was > 83 dB(A), ear plugs were compulsory	( <i>eng</i> .) v to wear.
ear, eye	Öse, die The banner was attached to the building by placing a rope through its	(eng.) s eyes.
earthed socket	Schutzkontaktsteckdose, die The earthed socket was splashwater-proof.	(eng.)
earthing	Erdung, die; Erden, das <i>grounding (AE)</i> Earthing is an important safety practice to conduct electrical charges to preventing dangerous sparks.	( <i>eng</i> .) 9 ground,

EC50	Effektdosis50, die	(chem.)
	The effective concentration (EC50) is the concentration of a	substance in water,
	which, administered as a single dose, is expected to cause a	biological effect on
	50% of the tested population.	-
ECO		(chem. eng.)
	Acronym/Abbreviation referral: see change order	
	, , , , , , , , , , , , , , , , , , , ,	
ECO		(chem. eng.)
	Acronym/Abbreviation referral: (engineering) change order	(
economiser, preheater	Vorwärmer der	(chem. eng.)
economicer, preneuter	economizer (AE)	(chemi chgi)
	The economizer was heavily corroded.	
	The economizer was neavily conforce.	
eddy	Wirbel, der	(general)
eady	Eddy currents (Foucault currents) are caused when a condu	e
		uctor is exposed to
	a changing magnetic field.	
edema	Ödem, das	(pharm.)
cucina		1
	Upon ammonia exposure, lung irritation and pulmonary ec	tema may occur.
edge	Kante, die	(eng.)
	The operator hurt his knee on the edge of the transportatio	-
	The operator hart monace on the eage of the transportation	ii box.
edible	essbar	(pharm.)
••••••	The food did not look edible.	(p)
effective concentration		(chem.)
encenve concentration		(chem.)
	Acronym/Abbreviation referral: see EC50	
effervesce, to	sprudeln, aufbrausen	(chem. eng.)
	The carbonate started to effervesce in the acidic solution.	(chem. eng.)
	The carbonate started to enervesce in the acture solution.	
effervescent	schäumend	(pharm.)
	The following reaction took place in the effervescent drink: C	1
	$> 3 H_2O + 3 CO_2 + Na_3C_6H_5O_7$ (citric acid + sodium bic	aroonale : waler +
	carbon dioxide + sodium citrate).	

effervescent tablet	Brausetablette, die The ingredients of effervescent tablets can penetrate the blood strea 15 minutes.	( <i>pharm</i> .) am within
effluent	flüssige Abfälle, die; Abwasser, das The effluent from the plant is monitored regularly.	(chem.)
effluvium	Ausdünstung, die Effluvium stands for the shedding of hair.	(pharm.)
egg white	Eiweiß, das; Eiklar, das Egg white (albumen) consists of approx. 15% proteins in water.	(chem.)
electric scale	elektrische Waage, die The electric scale has an accuracy of +/- 0.1 mg.	(eng.)
electric engineering	Elektrotechnik, die Electrical engineering is one of the most popular disciplines at her u	( <i>eng</i> .) iniversity.

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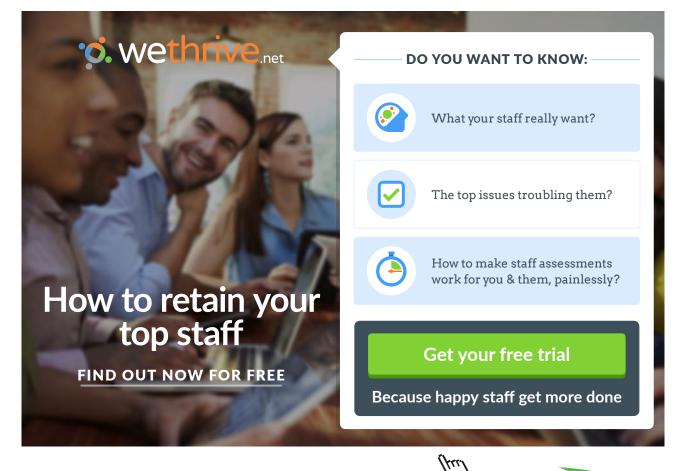
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101

electrical engineering		(eng.)
	Acronym/Abbreviation referral: electric engineering	
electropolishing	Elektropolieren, das	(eng.)
	Even surfaces can be obtained by electropolishing.	
elementary analysis	Elementaranalyse, die	(chem.)
	The empirical formula was determined by elementary analysis.	
elevation, front elevation	n Aufriss, der	(eng.)
	The client looked at the front elevation and made some comments.	
elecit hypersensitivity,		
to	eine Allergie auslösen, Überempfindlichkeit auslösen	(chem.)
	The plant was suspected to elicit hypersensibility.	
elucidate, to	aufklären	(eng.)
	The structure of benzene was elucidated by Kekulé.	
eluent	Eluat, das	(chem.)
	An eluent is the mobile phase in chromatography.	
elute, to	auspülen	(chem.)
	The sample was eluted to the FID (flame ionisation detector).	
elutriator	Sichter, der (	chem. eng.)
	An elutriator can separate pellets from undesirable dust.	C
embed, to	einbetten	(eng.)
	The embedded file cound not be opened.	
embossed	geprägt, erhaben	(pharm.)
	The brand of the manufacturer was embossed on the tablets.	1
embrittlement	Versprödung, die	(eng.)
	Hydrogen embrittlement is dangerous for pressure vessels.	
embrocation, liniment	Einreibemittel, das	(pharm.)
	Traditional Chinese medicine (TCM) features a wide variety of lini	4

emerald	Smaragd, der (chem.) The green color in emerald stems from traces of chromium. The mineral is beryl: $Be_3Al_2(SiO_3)_6$ .
emergency response plan	Notfall-Reaktionsplan, der (chem. eng.)
	Acronym (engl.): ERP The emergency response plan for the 3 plants was updated and discussed with the local mayor.
emergency shutdown	Notabschaltung, die(chem. eng.)Acronym (engl.): ESDThe ESD, which was caused by a power outage, led to an unplanned shutdownof the plant of 3 days.
emerging	neu entstehend (sci.) Hydrogen combustion in fuel cells is an emerging technology.
emery	Schmirgel, der(chem.)Emery paper can be used to remove deposits from glassware.
emetic	Brechmittel, das; brecherregend(pharm.)Syrup of ipecac (ipecac) is a commonly used, herbal emetic.
emollient	Weichmacher, der(pharm.)Emollients are substances that soften and soothe the skin.
empirical	empirisch(sci.)Any theory needs to be proven by empirical results.
empirical formula	Summenformel, die (chem.) The empirical formula of hexane $(C_6H_{14})$ is $C_3H_7$ .
empowerment	Ermächtigung, die; Übertragung von (econ.) Verantwortung an Mitarbeiter, die Empowerment of his employees has greatly reduced the workload of the department head.

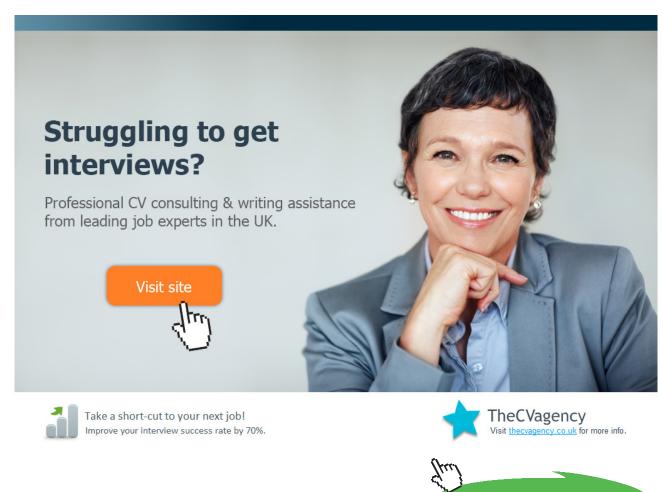
emulsifying agent, emulsifier, emulgent	Emulgator, der	(pharm.)
	Lecithin, a common emulsifier in food, can be extracted from soybe hexane.	eans using
enamel	Email, das Enamel is sensitive to mechanical stress.	(chem.)
enamelled	emailliert <i>enameled (AE)</i> Enamelled vessels can be used for hot acids.	(pharm.)
endocrine disrupter	Störungen des Hormonsystems verursachender Stoff Bisphenol A (BPA) is an endocrine disrupter. This organic compo two phenol functional groups is an important monomer in the pro- polycarbonate.	
endothermic	endotherm The melting of ice and the splitting of water into $H_2$ and $O_2$ air are enough processes.	( <i>chem</i> .) dothermic



enema	Darmspülung, die ( An enema is a bowel stimulant.	pharm.)
energised, to be	unter Spannung stehen <i>energized, to be (AE)</i> The wire was energized.	(eng.)
energy balance	Energiebilanz, die According to the first law of thermodynamics, energy cannot be cre destroyed, but only be modified. The energy balance of a closed system zero.	
energy consumption	Energieverbrauch, der (che The energy consumption of a pump often accounts for more than 909 total lifecycle costs.	em. eng.) % of the
engine	Motor, der Combustion engines have a higher energy density than batteries.	(eng.)
engineer	Ingenieur(in), der (die)(cheEngineers need to pay attention to minute details.	em. eng.)
engineering	Engineering, das; Ingenieurwesen, das; Ingenieursarbeit, die; Maschinenbau, der; Konstruktieren, das Engineering can be categorized into several branches with aerospace engin chemical engineering, civil engineering, electrical engineering and mee engineering being the traditional ones. Software engineering and engineering are two more recent branches.	chanical
Engineering, Procurement and Construction	EPC-Vertrag, der (eine Art Generalunternehmer-Vertrag) ( <i>che</i>	em. eng.)
	Acronym (engl.): EPC Acronym (dt.): EPC The EPC contractor was chosen from a list of 3 bidders.	

Engineering, Procurement and Construction Supervision	EPCS-Vertrag, der (eine Art Generalunternehmer-Vertrag)	(chem. eng.)
	Acronym (engl.): EPCS	
	Acronym (dt.): EPCS	
	The EPCS contract was signed.	
Engineering,	EPCC-Vertrag, der (eine Art Generalunternehmer-Vertrag)	(chem. eng)
Procurement and		
Construction		
Commissioning		
	Acronym (engl.): EPCC	
	Acronym (dt.): EPCC	
	The plant was built under an EPCC contract.	
Engineering, Procurement,	EPCM-Vertrag, der (eine Art Generalunternehmer-Vertrag)	(chem. eng.)
Constrauction		
Management		
0	Acronym (engl.): EPCM	
	Acronym (dt.): EPCM	
	The project was carried out as EPCM.	
enrich, to	anreichern	(chem.)
	In enriched uranium, the fraction of uranium -235 has been incr its natural abundance of 0.711% in uranium, because only 235U by neutrons and U238 is not.	
enter (a vessel), to	befahren (eines Behälters)	(chem. eng.)
	Entering a nitrogen-containing vessel requires special precaution	S.
enteric coated	magensaftresistent überzogen Pills that are enteric coated do not dissolve until they reach the sr Enteric coatings, which can be made from cellulose acetate (the of cellulose) or other polymers, are applied to avoid stomach is reduction in drug effectiveness by stomach acids or enzymes.	e acetate ester

entero soluble	dünndarmlöslich	(pharm.)
	The company was technology leader in the production of enter	o-soluble gelatin
	capsules. Gelatin is a protein produced by partial hydrolysis of co	ollagen extracted
	from bones and connective tissue.	
entire system	Gesamtsystem, das	(chem.)
	In order to set up a mass balance, the entire system needs to b	be considered.
entrainment	Einschluss, der	(chem.)
	Air entrainment is the deliberate creation of small air bubbles in	concrete. Unlike
	entrapped air (larger bubbles), the small bubbles increase per	formance.
environment	Umwelt, die	(chem.)
	Before a new plant can be approved in China, an EIA (enviro	onmental impact
	assessment) has to be made to protect the environment.	
environmental	Umweltbewusstsein, das	(chem.)
awareness		
	Due to media coverage, the environmenal awareness of the pub	lic has increased.



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environmental engineering, environmental technology	Umwelttechnik, die	(chem. eng.)
	Companies working in environmental technology often have a hig	h export rate.
Environmental Protection Agency	EPA, US-Umweltschutzbehörde, die	(chem. eng.)
	Acronym (engl.): EPA	
	EPA took up work in 1970 and has close to 20,000 employees.	
environmental technology	Umwelttechnik, die	(chem. eng.)
01	Pollutant reduction is an important area of environmental techno	ology.
ЕРА	Acronym/Abbreviation referral: see Environmental Protection Ager	(general) ncy
EPC	Acronym/Abbreviation referral: see Engineering, Procurement and	(chem. eng.) Construction
EPC contractor	Generalunternehmer, der The EPC contractor charged an hourly rate of 65€ for its enginee	(chem. eng.) rs.
EPCC	Acronym/Abbreviation referral: see Engineering, Procurement, Con Commissioning	(chem. eng.) estruction and
EPCM	Acronym/Abbreviation referral: see Engineering, Procurement, Management	(chem. eng.) Construction
EPCS	Acronym/Abbreviation referral: see Engineering, Procurement and Supervision	(chem. eng.) Construction
equation	Gleichung, die It can take days to derive a complicated equation.	(chem.)

equation of state	Zustandsgleichung, die ( In thermodynamics, an equation of state is a relation between state	( <i>chem. eng</i> .) e variables.
equilateral	gleichseitig An equilateral triangle has three angles of 60°.	(chem.)
equilibrium	Gleichgewicht, das The concept of chemical equilibrium was developed after Berthollet that some chemical reactions are reversible. The equilibrium betwee $CO_2$ is decribed by the Boudouard equation.	
equipment	Geräte, die The consultant handed over the equipment list to his client.	( <i>eng</i> .)
ergot	Mutterkorn, das Ergot is a fungus that afflicts grains and grasses.	(chem.)
escalation	Steigerung, die The contract mentioned a price escalation clause.	(econ.)
ESD	( Acronym/Abbreviation referral: see emergency shutdown	(chem. eng.)
essential oil	ätherisches Öl, das The yearly production of essential oils from spearmint and pepperm 1000 tons each.	(pharm.) nint exceeds
estimate (80/20)	Kostenschätzung 80/20, die ( An estimate (80/20) has got 80% probability for underrun and 20% for overrun of project costs.	( <i>chem. eng</i> .) probability
estimate, to	schätzen The engineer estimated the unplanned shutdown to last at least 3 v	(general) veeks.
etching	Ätzen, das Etching is an im portant unit operation in litography.	(chem.)

European Chemical Industry Council	Europäischer Chemiefachverband(cCEFIC, der(cAcronym (engl.): CEFIC(cCefic represents the European chemical industry and thereby stands for ap30,000 chemical companies which employ approx. 1.3 million people		
	account for nearly a third of the world's chemical production.		
eutectic point	Eutektikum, das (c The melting point of a mixture of two or more solids depends on their frac in that mixture. At the eutectic point, the melting temperature is lowest.		
evaluation	Auswertung, die The evaluation of results deserves at least as much time as the experim themselves.	( <i>sci.</i> ) ments	
evaporate, to	verdunsten, verdampfen (c Liquids and solids have a tendency to evaporate into a gaseous form a condense back. The vapor pressure expresses the equilibrium condition.		



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even	eben, glatt, gerade(eng.)2, 4 and 6 are even numbers.
evolution of gas	Gasentwicklung, die (chem.) The evolution of $H_2$ gas from recharging of accumulators has to be evaluated for potential risks.
evolution of heat	Wärmeentwicklung, die(chem.)The evolution of heat in exothermic reactions has to be controlled.
ex works	ab Werk (Incoterm)(econ.)Acronym (engl.): EXWThe machine will be available ex works in 2 weeks.
excavation work	Aushubarbeit, die(eng.)The excavation works were delayed by 2 weeks.
excavator	Bagger, der(eng.)Front loaders and excavators were used to remove the contaminated soil.
exceed, to	übertreffen(eng.)The market response has exceeded the expectations.
excess	Überschuss, der(chem.)The cheaper reaction partner was added in excess.
excess pressure	Überdruck, der(chem. eng.)It needs to be ensured that the excess pressure in the process can never surpassthe design pressure of the equipment.
excipient	Hilfsstoff, der; Wirkstoffträger, der (pharm.) Excipients account for a large portion of tablets. For instance, binders hold the ingredients in a tablet together. Binders are usually starches, sugars, cellulose or modified cellulose such as hydroxypropyl cellulose, lactose, or sugar alcohols like xylitol, sorbitol or maltitol.
excite, to	anregen (general) The OH radicals were excited at 278.5 nm.

executive	Direktor, der; Führungskraft, die; leitender Angestellter, der; Leiter, der In company A, all executives are entitled to a company car.	(econ.)
executive board	Vorstand, der The exective board holds biweekly meetings.	(econ.)
exhaust, exhaust gas	Abgas, das In modern DeNOx plants, ammonia slip in the exhaust gases is measu	( <i>chem</i> .) red.
exothermic	exotherm The mixing of strong acids with water, combustion and most polyme reactions are exothermic.	( <i>chem</i> .) prisation
expansion sleeve	Dehnungsmanschette, die (che The expansion sleeve could compensate thermal expansion between +300°C.	<i>m. eng</i> .) -10 and
expat	Acronym/Abbreviation referral: short form for expatriate	(econ.)
expatriate	Mitarbeiter im Auslandseinsatz, der; Auswanderer, der <i>Acronym (engl.): expat</i> For his company, he went to China as an expat for 2 years.	(econ.)
expectation	Erwartung, die ( In order to fulfil customer requirements, one needs to know their expe	general) ections.
expertise	Wissen, das; Erfahrung, die (g His expertise was not disputed.	general )
expiration date, expiry date	Ablaufdatum, das () Shelf life is different from expiration date; the former relates to food qual latter to food safety.	pharm.) ality, the
expire, to	auslaufen, ablaufen ( The software licence has to be renewed before it expires.	general)

explosion	Explosion, die	(chem.)
	Explosions in a confined space are particularly dangerous.	
explosion proof	explosionssicher, explosionsfest The vessel was designed to be explosion proof in order to avoid th of a pressure relief valve.	(chem. eng.) ne installation
exposure	Einwirkung, die; Aussetzen, das; Exposition, die; Ausgesetztsein, Chronic exposure to lead amongst workers in ammunition facto to serious diseases.	
exposure limit	Belastungsgrenze, die The exposure limit of CO is 50 ppm.	(chem.)
extensible	ausziehbar His remote control has an extensible antenna.	(eng.)
extinguishing medium	l Löschmittel, das Carbon dioxide and water can be used as extinguishing media.	(chem. eng.)



extractables	lösliche Anteile, die Extractables are chemicals which are released by the packaging a contaminate a pharmaceutical drug in it.	( <i>chem</i> .) nd can
extraction	Extraktion, die Some essential oils can be obtained by extraction.	(chem.)
extrusion	Extrusion, die Extrusion and injection moulding are two important plastics pro technologies.	(eng.) cessing
EXW	Acronym/Abbreviation referral: see ex works	(econ.)
eye wash equipment	Augendusche, die The lab was equipped with state-of -the-art eye wash equipment.	(chem.)
fabric	Stoff, der; Gewebe, das Fabrics are woven on dedicated machines.	(eng.)
facilitator	Moderator, der; Unterstützer, der To structure the workshop, a facilitator was invited.	(econ.)
factory	Fabrik, die The glass factory is the largest employer of the region.	(chem.)
factory acceptance test	t Abnahmeprüfung in der Fabrik, die Acronym (engl.): FAT	(econ.)
	The FAT was witnessed by three technical experts of the customer to ver the equipment was functioning according to specifications.	ily that
fail closed	bei Störung zu The propane feed line was equipped with a fail closed valve.	(eng.)
fail open	bei Störung offen A fail open shutter should generally not be used on these storage tanks	(eng.)
fail open valve	bei Ausfall des Versorgungsluftdrucks geöffnetes Ventil The vessel had a fail open valve.	(eng.)

fail safe position	Position im Störfall, die The fail safe position of the valve is "open".	(chem. eng.)
failed batch	Fehlcharge, die The failed batch was reworked in the subsequent productions.	(chem. eng.)
fail-safe, fail-secure	ausfallsicher, betriebssicher The vessel was made fail-safe by redundant systems.	(chem. eng.)
failure	Versagen, das Denial of the project was considered a failure of the project man	(eng.) ager.
failure mode and effect analysis	Fehler-Möglichkeits- und Einfluss-Analyse, die	(general)
	Acronym (engl.): FMEA	
	Acronym (dt.): FMEA	
	The customer asked for a process FMEA.	
fals ification	Verfälschung, die	(general)
	No falsification could be seen on the packaging.	
fan	Lüfter, der; Ventilator, der	(eng.)
	The fan provided some air circulation in the room.	C
FAT		(econ.)
	Acronym/Abbreviation referral: see factory accept ance test	
fat	Fett, das	(chem.)
	Fats are generally triesters of glycerol (propane-1,2,3-triol, C ₃ H ₅ (O	$H)_{3}$ ) and fatty
	acids.	5
fatigue	Ermüdung, die	(eng.)
	Material fatigue can be depicted on an S-N curve, which is also	known as the
	Wöhler curve. It is a graph of the magnitude of a cyclical stress (	S) against the
	logarithmic scale of cycles to failure (N).	

fatty acid	Fettsäure, die	(chem.)
	A fatty acid is a carboxylic acid (carbonic acid). It can have a le	ong unbranched
	aliphatic saturated or uns aturated tail (chain). Most naturally	occurring fatty
	acids have an even number of carbon atoms, because their biosy	nthesis involves
	the coenzyme acetyl-CoA.	
faulty	fehlerhaft	(eng.)
	The manual is faulty.	
FDA		(eng.)
	Acronym/Abbreviation referral: see Food and Drug Administrat	ion
feasibility	Machbarkeit, die	(general)
	The economic feasibility of the project was doubtful.	
feasibility study	Machbarkeitsstudie, die	(chem. eng.)
	In the feasibility study, the production process was chosen.	



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feasible	machbar	(chem.)
	According to the laws of physics, the construction of a perpetuum feasible.	mobile is not
federal	bundesstaatlich	(general)
	The use of that chemical in regulated by federal law.	
Federal	Umweltbundesamt, das	(general)
Environment(al)		
Agency		
	Acronym (dt.): UBA	
	The German Federal Environmental Agency had a study on PAH	conducted.
Federal Register (AE)	Federal Register (ähnl. Bundesanzeiger)	(general)
	Acronym (engl.): Fed. Reg.	
	The Federal Register is an official, daily publication issued by Fed and organizations in the United States.	eral agencies
feed port	Einspeisestelle, die	(chem. eng.)
	The PFD does not show the feed ports of the catalyst.	
feed water	Speisewasser, das	(chem. eng.)
	The feed water consumption of a plant has to be estimated	Ũ
	engineering phase.	
FEL		(chem. eng.)
	Acronym/Abbreviation referral: see front end loading	
felt	Filz, der	(chem.)
	Felt, a nonwoven cloth, is the oldest fabric.	(,
fermentation	Gärung, die; Vergärung, die	(chem.)
	Acetic acid is produced from ethanol by fermentation.	× ,
ferric	Fe III	(chem.)
	Iron(III) oxide, $Fe_2O_3$ , also known as ferric iron, is rust. It is red.	(
ferrous	Fe II	(chem.)
	Iron(II) oxide, FeO, also known as ferrous oxide, is black.	

ferrous metal	Eisenmetall, das Ferrous metals (Fe, Ni, Co) are attracted by a magnet.	(chem.)
fertiliser, fertilizer	Dünger, der <i>fertilizer (AE)</i> Most fertilizers contain the three major plant nutrients (nitroge potassium: N-P-K).	(chem. eng.) n, phosphorus,
FIBC	Acronym/Abbreviation referral: see flexible intermediate bulk cor	(chem. eng.) Itainer
fibre	Faser, die <i>fiber (AE)</i> The fiber was made from PP (polypropylene).	(chem.)
fibre glass, glass fibre	Glasfaser, die <i>fiber glass, glass fiber (AE)</i> Fibre glass can be used in plastics compounds.	(chem.)
fibre reinforced	faserverstärkt <i>fiber reinforced (AE)</i> Fibre reinforced materials have a good performance/weight rati	(chem.)
fibrous	faserig Wollastonite has a fibrous structure.	(chem.)
field erection	Fertigung auf der Baustelle, die The silo was field-erected to save transportation costs.	(eng.)
field force	Außendienst, der The field force has to understand the strengths and weaknesses products.	(econ.) of a company's
field size	Feldgröße, die The asset field size is 20,000 m².	(eng.)
field test	Feldtest, der The prototype was subjected to a 3-week field test.	(eng.)

FIFO		(econ.)
	Acronym/Abbreviation referral: see first in, first out	
file	Feile, die; Datei, die; Karteikarte, die	(eng.)
	A good filing stucture greatly facilitates searching for old data.	× 0,
film coated tablet	Filmtablette, die	(pharm.)
	The film coated tablet could be swallowed easily by the patient.	ч ,
film forming agent	Filmbildner, der	(pharm.)
0.0	Polyvinylpyrrolidone (PVP, povidone, polyvidone) is a film-form	4
filter residue	Filterrückstand, der	(pharm.)
	The toxic filter residue was disposed of.	ч ,
fin	Kühlrippe, die	(eng.)
	Fins on a heat exchanger can improve heat transfer.	× 87
final study	abschließende Studie, die; Abschlussstudie, die	(chem. eng.)
	Verification of the business case is a vital part of a final study.	(



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final yield	Endausbeute, die The final yield can be increased to 85% when the reaction is con most preferable solvent.	( <i>chem</i> .) ducted in the
financial accounting, financial accountancy	Finanzbuchhaltung, die; Finanzierung, die	(econ.)
interier accountancy	Financial accounting needs to follow local and internationa standards.	l accounting
fine adjustment	Feineinstellung, die	(pharm.)
	By fine adjustment of the reactor, the yield could be increased by	7 3%.
fir	Tanne, die	(general)
	Fir, which is not suitable as timber, is often used as plywood.	
fire	Brand, der; Feuer, das	(chem.)
	The smoke detector set off the fire alarm.	
fire diamond	Feuerdiamant, der The fire diamond is a symbol designed by the NFPA to provide a q about the hazards of a substance by a number code in colored boxe for health, red for flammability, yellow for the reactivity and whi hazard of the substance in question.	es: Blue stands
fire extinguisher	Feuerlöscher, der	(general)
	Potassium bicarbonate (potassium hydrogen carbonate, $KHCO_3$ ) i B and class C fire extinguishers.	s used in class
firebox	Brennkammer, die	(chem. eng.)
	The firebox is the area where fuel is burnt.	
fireproof	feuerfest, hitzebeständig	(chem. eng.)
	A concrete lining made the traffic tunnel fireproof.	
fireproofing	Feuerfestmachen, das	(chem. eng.)
	Historically, asbestos was used for fireproofing in buildings.	
firewater	Branntwein, der; Löschwasser, das	(eng.)
	Firewater was stored in a pond.	

first in, first out	die Ältesten (Waren, Rohstoffe, Lagerbestände, Anträge,) zuerst <i>Acronym (engl.</i> ): <i>FIFO</i>	(econ.)
	FIFO is a stock valuation technique where the value of materials that an out of a warehouse is set equal to the value of the oldest material in sto	
first order reaction	Reaktion erster Ordnung, die A first-order reaction depends on the concentration of only one react example is the unimolecular reaction $H_2O_2 \rightarrow H_2O + 1/2 H_2$ .	( <i>chem.</i> ) ant. An
fixed	befestigt, fixiert The meeting could be fixed for October 23.	(eng.)
fixed costs	Fixkosten, die Costs that do not change in line with production output, e.g. facto depreciation of plant and machinery, are termed fixed costs. Also sala included in fixed costs since they can be reduced only in a very low perspective.	ries are
flake	Flocke, die Snow flakes exhibit a 6-fold symmetry, which arises from the hexagona structure of ice.	( <i>chem</i> .) l crystal
flame sieve, flame arrestor, flame arrester	Flammensperre, die; Flammsieb, das (che	em. eng)
	Flame arrestors which are designed to stop deflagrations might be over a detonation.	riden by
flammable	brennbar, leicht entflammbar Acetone and ethanol are flammable liquids. Their autoignition temperat 465°C and 425°C, respectively.	( <i>chem</i> .) ures are
flange	Flansch, der(cherPipe flanges can be divided into pressure classes.	m. eng.)
flap	Klappe, die The flap was actuated to stop the material flow.	(eng.)

flare, to	abfackeln	(chem. eng.)
	Flaring is generally only performed at startup and shutdown of	of the plant.
flashback	Flammenrückschlag, der; Flashback, der A flashback can occur with an acetylene torch if the gas pressu	( <i>chem</i> .) are is too low (i.e.
	the gas flow of the combustible mixture is slower than the lam so that the flame can travel backwards).	
flashover	Feuersprung, der; Funkenüberschlag, der In household fires, a flashover typically occurs at 500°C, when gases, which have accumulated in the room, ignite simult phenomenon occurs in an unconfined space, it is termed fires	aneously. If this
flashpoint, flash point	Flammpunkt, der The flashpoint of gasoline is below -20°C, wheras its autoigni is 246°C. For diesel, the values are approx. 62°C and 210°C, re	
flask	Kolben, der; Glaskolben, der; Fläschchen, das The lab technician was looking for a clean flask.	(pharm.)



flavouring agent	Geschmackstoff, der; Aromastoff, der <i>flavoring agent (AE)</i> Synthetic vanillin, instead of natural vanilla extract, which contain hundred different compounds in addition to vanillin, is sometimes flavoring agent in foods, beverages, and pharmaceuticals. It can be m guaiacol (2-methoxyphenol, $C_7H_8O_2$ ) or lignin. The lignin-derived contains acetovanillone (apocynin, 1-(4-Hydroxy -3-methoxyphenyl)e $C_9H_{10}O_3$ ) as an impurity.	used as a ade from product
fleece	Vlies, das Sheep were among the earliest animals to be domesticated for ag purposes. They give fleece, meat (lamb or mutton) and milk.	(general ) ricultural
flexibiliser, plasticiser	Weichmacher, der (für Kunststoffe) <i>flexibilizer, plasticizer (AE)</i> Plasticizers for plastics are additives, most commonly phthalates, that plastics like PVC the desired flexibility and durability. They are oft on esters of polycarboxylic acids with linear or branched aliphatic al moderate chain length.	en based
flexible	biegsam The construction was held together by flexible wire.	(general)
flexible intermediate bulk container	(ch Acronym (engl.): FIBC Acronym/Abbreviation referral: see big bag	em. eng.)
flint stone	Feuerstein, der Flint is a hard, cryptocrystalline form of quartz, which can be found as in sedimentary rocks such as chalk and limestone.	( <i>chem</i> .) s nodules
floating roof	Schwimmdach, das The fuel storage tank, which has a capacity of approx. 5,000,000 litres, is with a fixed roof with internal floating roof.	( <i>eng</i> .) equipped
flocculate, to	ausflocken The emulsion was flocculated using multivalent cations such as alu calcium and magnesium ions.	( <i>chem</i> .) Iminium,

flocculation	Ausflockung, die In flocculation, unlike precipitation, the solute coming out of the so at a concentration below its solubility limit.	( <i>chem</i> .) solution does
flow limiter, flow restrictor	Durchflussbegrenzer, der An orifice plate is a simple flow limiter (flow restrictor).	(chem. eng.)
flow rate, volume flow, volume flow rate	Volumenstrom, der The blower supplies a flow rate of 5,400 m³/h.	(chem. eng.)
flow sheet	Fließschema, das; Fließbild, das The engineer attempted to simplify the flow sheet.	(chem. eng.)
fluent	fliießend Fluent English is vital in many roles.	(general)
fluid	Fluid, das (Flüssigkeit/Gas) The instrument was designed for fluid flows from 0.1 to 50 t/h.	(chem.)
fluid dynamics, fluid mechanics	Stömungslehre, die; Hydromechanik, die An important set of equations in fluid dynamics are the Navier-Stol These differential equations describe the motion of viscous fluids	-
fluidised bed	Wirbelschicht, die <i>fluidized bed (AE)</i> Fluidized beds show good heat and mass transfer and can hence	(chem. eng.)
fluorine	numerous processes such as combustion. Fluor, das <i>Acronym (engl.): F</i> <i>Acronym (dt.): F</i> Fluorine is the most reactive and most electronegative element.	(chem.)
flush, to	spülen Before the Grignard reaction could be started, flushing of the entir nitrogen had to be done.	( <i>chem</i> .) e system with

flywheel	Schwungrad, das A flywheel can store mechanical energy and release it within a short j time.	( <i>eng</i> .) period of
FMEA	Acronym/Abbreviation referral: see failure mode and effect analysis	(general)
foam	Schaum, der Foam can have open and closed cells.	(chem.)
foam extinguisher	Schaumfeuerlöscher, der Foam extinguishers can be found in many households.	(eng.)
focal point	Brennpunkt, der The focal point of a lens, a spherical or parabolic mirror, is a point on light parallel to the axis is focused.	( <i>eng</i> .) to which
fog	Nebel, der (flüssig in Gas) People suspected that the chemical plant was responsible for the fog.	(chem.)



Food and Drug Administration	FDA, Arzneimittelzulassungsbehörde(eng.)der Vereinigten Staaten, die (Teil des Gesundheitsministeriums)Acronym (engl.): FDAThe company expected an FDA inspection in the next weeks.
food approval	Lebensmittelzulassung, die(jur.)Since the new additive did not yet have food approval, it could not be used in packaging materials designed for food contact.
food supplement	Nahrungsergänzungsmittel, das(pharm.)Food supplements are generally over-the-counter drugs.
foodborne illness, foodborne disease, food poisoning	Lebensmittelvergiftung, die (pharm.)
1 0	There are two reasons of foodborne diseases: food infection and food intoxication. The former refers to the presence of bacteria or other microbes which infect the body after food consumption. The latter refers to the ingestion of toxins in the food.
fool's gold	Katzengold, das(eng.)The nickname of pyrite $(FeS_2)$ is fool's gold.
force	Kraft, die (eng.) The SI unit of force is Newton (N). 1 N = 1 kgm/s ² .
force discharge, forced discharge	Zwangsentleerung, die(eng.)The liquid was too viscous for gravity discharge, therefore, forced discharge was used.
force per volume	Wichte, die (eng.) In contrast to density (unit kg/m ³ ), the force per volume (unit N/m ³ ) is irrespective of the location.
forced ageing	beschleunigte Alterung, die(eng.)forced aging (AE)Forced ageing tests can speed up product development time.

## Chemical Engineering Vocabulary

forced ventilation	Fremdbelüftung, die; Zwangsbelüftung, die The solvent storage room is equipped with forced ventilation.	(chem. eng.)
forecast	Prognose, die; Voraussage, die The sales forecast for the upcoming quarter looked gloomy.	(general)
foreman	Vorarbeiter, der; Polier, der; Bauführer, der The foremen showed role model conduct in terms of safety.	(eng.)
forensic chemistry	Gerichtsmedizin, die Forensic chemistry can reveal the root cause of poisonings.	(jur.)
forge, to	schmieden The tool was forged.	(eng.)
forklift	Gabelstapler, der In a warehouse, electrically operated forklifts are preferred over ones.	( <i>chem. eng</i> .) diesel-fuelled
formation	Bildung, die; Schaffung, die The formation of carbonaceous deposits on viewing windows o can be prevented by purging the windows.	( <i>chem</i> .) of combustors
formation	Bildung, die; Zusammenstellung, die The formation of a task force could be completed in half a day.	(eng.)
formic acid	Ameisensäure, die Formic acid (HCOOH, methanoic acid) is the simplest carboxyli	( <i>chem</i> .) ic acid.
formula	Formel, die Some formulae need to be learnt by heart.	(chem.)
fortification	Befestigung, die The fortification of the cooling tower was designed for high wind	(eng.) l loads.
foul, to	verschmutzen, verstopfen Boiler fouling reduces the lifetime of the unit.	(chem.)

fouling	Verschmutzen, das Without the addition of special anti-fouling agent, the water bath show growth within days.	( <i>chem</i> .) ved algae
foundation	Grundfeste, die; Fundament, das; Grundmauerwerk, das The foundation of the building was made of concrete.	(eng.)
foundry	Gießerei, die Due to lack of orders, the foundry was closed down.	(eng.)
four stroke engine	Viertaktmotor, der Diesel engine and Otto engine are four stroke engines.	(eng.)
fraction	Bruch, der A fraction has a numerator and denominator.	(sci.)
frame building	Fachwerkbau, der Framed buildings were common in Germany.	(eng.)

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freeze-drying, lyophilisation, cryodesiccation	Gefriertrocknung, die	(chem.)
er youcsiccation	lyophilization (AE)	
	The process of freeze-drying is used to preserve food and make it	t lightweight.
freezing range	Erstarrungsbereich, der	(chem.)
	Chocolate exhibits a freezing range rather than a freezing point.	
frequency converter	Frequenzumrichter, der	(eng.)
	By investing in a frequency converter for the blower, the air fl matched to the process requirements in an energy-efficient way.	ow could be
freshwater	Süßwasser, das	(chem.)
	3% of the water on earth are freshwater, most of which is frozen.	
friability	Bröckeligkeit, die; Zerreibbarkeit, die	(pharm.)
	Low friability is an important quality parameter of pharmaceutic	1
friction	Reibung, die	(eng.)
	Friction creates heat.	
front end loading	Eingangsdaten, die	(chem. eng.)
	Acronym (engl.): FEL	
	Front end loading of the project was poor, leading to significant of during project execution.	cost overruns
frostbite	Frostbeule, die; Erfrierungen, die	(pharm.)
	Forstbite is damage on tissue from exposure to extreme cold or	contact with
	extremely cold liquids or solids.	
FTE		(econ.)
	Acronym/Abbreviation referral: see full time equivalent	
fuel	Treibstoff, der	(chem.)
	CNG (compressed natural gas) can be used as fuel for cars.	·····/
fuel-lean mixture	mageres Gemisch, das	(chem. eng.)
	Modern gas engines operate on fuel-lean mixtures.	

fuel-rich mixture	fettes Gemisch, das Fuel-rich mixtures facilitate engine startup.	(chem. eng.)
fugitive	flüchtig Fugitive emissions are harder to control than stack emissions.	(chem.)
fugitive emissions	diffuse Emissionen, die Unlike stack emissions, fugitive emissions are difficult to quantif	(chem. eng.) y.
fulcrum	Drehpunkt, der The fulcrum is the pivot on which a lever moves.	(eng.)
full time equivalent	Mitarbeiterkapazität, die; Vollzeitäquivalent, das <i>Acronym (engl.): FTE</i> <i>Acronym (dt.): MAK, VZÄ</i> The project needed 3 additional FTE.	(econ.)
fume cupboard	Abzug, der The fume cupboard should not be misused as storage area.	(chem.)
funnel	Trichter, der The funnel was too small for the filter.	(chem.)
funnel flow	Kernfluss, der The funnel flow behavior of the raw material silo has a slight ho effect.	(chem. eng.) mogenisation
fuse	Sicherung, die A fuse needs to have a short response time.	(eng.)
fused glass	Sinterglas, das; geschmolzenes Glas, das The main constituent of fused glass is silica (SiO ₂ ).	(chem.)
galvanised sheet	verzinktes Blech, das <i>galvanized sheet (AE)</i> Galvanized steel can be recognized by the crystallization pattern o ("spangle").	( <i>chem. eng</i> .)

gangrene	Wundbrand, der; Gangrän, das A gangrene can be caused by an ischaemia or an infection, the la detrimental colonization of a host organism by a foreign species.	( <i>med</i> .) atter being a
gap	Abstand, der; Lücke, die; Spalt, der The consultant proposed to make a gap analysis.	(general)
gargle, to	gurgeln Antiseptic mouthwash can be gargled, too, in order to remove b the throat.	( <i>pharm</i> .) acteria from
gas liquid interface	Grenzschicht gas/flüssig, die The formula describes gas exchange at the gas liquid interface.	(chem.)
gas mileage	Kraftstoffverbrauch, der The car has a gas mileage of 25 mpg.	(eng.)
gas scrubber	Gaswäscher, der The gas scrubber can reduce the concentration of $SO_2$ in the exha 7 mg/m ³ to less than 1 mg/m ³ .	( <i>chem. eng</i> .) ust gas from

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131

gaseous	gasförmig ( The gaseous fuel/air mixture was ignited.	chem.)
gasification	Vergasung, die (chem A pilot plant for biomass gasification was built in Guessing/Austria.	1. eng.)
gasify, to	vergasen (Coal can be gasified with water to yield CO and $H_2$ .	(chem.)
gasket	Dichtungsring, der; Dichtungsscheibe, die She selected gaskets for the aggressive process media.	(eng.)
gasometer	Gasbehälter, der ( The gasometer can store up to 3,500 Nm ³ of butane.	chem.)
gastric juice	Magensaft, der (p. Gastric juice is a strong acidic liquid with a pH of 1 to 3 in humans. It components are the digestive enzymes pepsin and rennin, plus hydrod acid and mucus.	
gastro resistant	magensaftresistent überzogen (p. The capsules were designed to be gastro-resistant and enterosoluble.	harm.)
gate	Tor, das The gate was made from wood.	(eng.)
gate valve	Schieber, der; Absperrschieber, der; Absperrventil, das; (chen Absperrhahn, der A gate valve is a valve that opens by lifting a round or rectangular gate/ out of the path of the fluid. Gate valves are sometimes used for regulatin but mostly they are designed to be fully opened or closed. When fully o gate valve typically has no obstruction in the flow path.	ng flow,
gauge pressure	Manometerdruck, der; Überdruck, der <i>Acronym (engl.): barg</i> The gauge pressure was 1.2 bar.	(eng.)

gauze	Mull, der Gauze is a thin, translucent fabric, often made from cotton. It is used for b to dress wounds where other fabrics might stick to the burn or lacera	e
gauze bandage	Mullbinde, die The gauze bandage is sterile unless the package is opened or damaged	(pharm.) l.
gearbox	Getriebe, das Vibration monitoring on gearboxes is state of the art for large, stationary	( <i>eng</i> .) rengines.
gearing	Verschuldungsgrad, der; Verhältnis von Fremd- zu Eigenkapital, das The company targets for a gearing (net debt divided by equity) between which is a good balance between costs of capital and risk.	(econ.) 40– 60%,
gellant	Geliermittel, das The gellant was produced in China.	(pharm.)
gelling agent	Geliermittel, das Gelling agents are used to thicken and stabilize emulsions and susp Typical gelling agents include natural gums, starches, pectins, agar- gelatin. Often they are based on polysaccharides or proteins.	
general terms and conditions	Allgemeine Geschäftsbedingungen, die Acronym (engl.): T&C, GT&C Acronym (dt.): AGB The general terms and conditions can be found on the company webs	(econ.) site.
generate, to	erzeugen $CO_2$ , $H_2$ and $H_2S$ can be generated in Kipp's apparatus from an acid with $CaCO_3$ , Zn and FeS, respectively.	( <i>chem</i> .) reacting
generic medicinal products, generic drugs, generics	Generika, die (Generikum, das)	(pharm.)
	Generic drugs must contain the same active ingredients as the bran formulation. They need to be identical or bioequivalent to the medication.	

generic name	Freiname, der The generic name was proposed by the WHO.	(pharm.)
genetic engineering	Gentechnik, die The first genetically engineered medicine was synthetic human ir	( <i>chem. eng.</i> ) nsulin (1982).
genetics	Genetik, die A milestone in genetics was the determination of the structure James D. Watson and Francis Crick in 1953.	( <i>chem.</i> ) of DNA by
germ	Keim, der Germs are microorganisms, especially pathogenic ones.	(pharm.)
germicidal	keimtötend Iodine, hydrogen peroxide, boric acid, alcohols and quaternary compounds have germicidal effects.	( <i>chem</i> .) 7 ammonium
germicide	keimtötendes Mittel, das Overusing germicides might lead to an increase in dangerous, res of bacteria.	( <i>chem</i> .) sistant strains



134

germinate, to	keimen	(chem.)
	Germinated barley grains are used for the production of beer.	
gingival	Zahnfleisch-	(pharm.)
	The formulation was developed for gingival use.	
gland	Stopfbuchse, die; Dichtschraube, die	(eng.)
	Glands are used to seal a rotating or reciprocating shaft against a	fluid.
glass rod	Glasstab, der	(chem.)
	The laboratory assistant stirred the solution with a glass rod.	
glassware	Glasgeräte, die (Glasgerät, das)	(chem.)
-	Glassware needs to be handled with care.	
globe valve	Ringkolbenventil, das	(chem. eng.)
-	Globe valves are used to regulate the flow in a pipeline.	C
gloss	Glanz, der	(eng.)
-	The gloss on the surface disappeared after 2 weeks.	C
GLP		(chem. eng.)
	Acronym/Abbreviation referral: see good laboratory practise	、
GMP		(chem. eng.)
	Acronym/Abbreviation referral: see good manufacturing practise	(
good laboratory	GLP, gute Laborpraxis, die	(chem. eng.)
practise		× 0,
	practice (AE)	
	Acronym (engl.): GLP	
	GLP, which applies to non-clinical studies, provides a framework	
	laboratory studies are planned, performed, monitored, recorded,	reported and
	archived.	

good manufacturing practise	GMP, gute Herstellungspraxis, die	(chem. eng.)
	practice (AE)	
	Acronym (engl.): GMP	
	An important aspect of GMP is documentation of every process	step.
gout	Gicht, die	(pharm.)
	Gout (metabolic arthritis) is a disease created by a buildup of u	
	Trioxypurine, $C_5H_4N_4O_3$ ). In this condition, crystals of mono	
	or uric acid are deposited on the articular cartilage of joints, surrounding tissues. These crystals cause inflammation and pair	
grain	Korn, das	(eng.)
	A single grain of contamination can destroy a wafer.	
Gram staining	Gramfärbung, die	(pharm.)
	Gram staining (or Gram's method) is an empirical method of	differentiating
	bacterial species into two large groups (Gram-positive and G	-
	based on the chemical and physical properties of their cell walls	
grassroot plant		(chem.)
	see greenfield plant	
grease	Fett, das	(chem.)
	Grease, which is used as a lubricant, consists of an oil or another li	quid lubricant
	which is mixed with a soap to yield a solid.	
green chemistry	nachhaltige Chemie, die	(chem.)
	Green chemistry is a field that has attracted numerous research	ers in the last
	years.	
greenfield plant	komplett neue Anlage, die; Anlage auf der grünen Wiese, die	(chem.)
	The company built a greenfield plant close to Seoul in Korea.	
greenhouse effect	Treibhauseffekt, der	(chem.)
	Without the natural greenhouse effect, the average surface temper	ature of Earth
	of 14°C would be approx18°C.	

grid	Gitter, das; Netz, das For his computer simulation, he placed a grid over the reactor.	(eng.)
grind, to (ground, ground)	schleifen, malen	(eng.)
(ground, ground)	He ground the knife so much that a significant loss of metal could be	e seen.
grindstone	Schleifstein, der Grindstones, tools to sharpen various bodies, were often made from s in the shape of a wheel.	( <i>eng</i> .) andstone
groove	Rille, die; Nut, die; Fuge, die The groove could not be seen.	(eng.)
grooved	geriffelt The grooved surface enabled him to walk safely despite the rainfall.	(eng.)
gross	brutto The gross weight of the container is 33,850 kg.	(general)





ground glass	Glasschliff, der(chem.)By using ground glass joints in laboratories, a leak-tight apparatus can be fittedtogether in a fast and easy way.
ground stopper	Schliffstopfen, der(chem.)The ground stopper broke on the floor.
groundbreaking	Spatenstich, der(chem. eng.)100 employees attended the groundbreaking ceremony.
grounding	Erden, das(eng.)Grounding of electrical equipment is specified in national standards.
grout, grouting	Einspritzmörtel, der; Auspressmörtel, der; Einpressmörtel, der ( <i>eng.</i> ) Grout is a construction material used to embed rebars in masonry walls or to fill voids. It is generally composed of a mixture of water, cement, sand and sometimes fine gravel.
guarantee	Garantie, die (econ.) In addition to the warranty, which is stated by law, a seller can give an additional, voluntary guarantee to a customer that the product will comply with the specifications for a longer period of time, e.g. 10 years.
gums, gingiva	Zahnfleisch, das(pharm.)Inflammation of the gums, which can be recognized by a change in color, can be caused by the accumulation of bacterial plaque.
gunpowder	Schwarzpulver, das(chem.)A typical mixture of gunpowder contains 75% potassium nitrate, 15% softwoodcharcoal and 10% sulfur.
gypsum	Gips, der(chem.)Desert roses consist of gypsum ( $CaSO_4 .2H_2O$ ).
gyroscope	Kreisel, der(eng.)In his final exam, he had to explain a gyroscope.

half-life	Halbwertszeit, die	(chem.)
	The half-life of uranium-238, which decays to thorium-234 by t	
	alpha particles, is 4.5 billion years.	
halide	Halogenid, das	(chem.)
	Acronym (engl.): X	(,
	Acronym (dt.): X	
	All metals from group 1 form halides with the halogens. These bina	ary compounds
	are white solids (salts).	7 1
hallway	Korridor, der; Vorzimmer, das	(general)
	The hallway of the building was misused for storage purposes.	-
hardness	Härte, die	(eng.)
	Hardness, which can be defined as the resistance to scratching	or permanent
	deformation, can be measured on the scales of Mohs, Rockwell	ll, Vickers, and
	Brinell.	
harmful	schädlich	(eng.)
	Noise > 85 dB(A) is harmful.	
harmless	unschädlich	(eng.)
	Air humidity is harmless to the transformer.	
hazard classification	Gefahreneinstufung, die	(chem. eng.)
	The hazard classification of the warehouse was challenged by	the insurance
	company.	
hazardous	gefährlich	(chem.)
	Fluorine is a hazardous gas.	
hazardous material (A	AE)	(chem.)
	Acronym (engl.): hazmat	
	Acronym/Abbreviation referral: see dangerous good	

hazardous materials identification system	HMIS	(chem.)
	Acronym (engl.): HMIS HMIS is a database that provides information on health reactivity hazards of substances that are encountered in the w is assigned to a material indicating the degree of hazard, up to 4 for the most severe. Letters are used to designate protective equipment.	vorkplace. A number from 0 for the least
hazardous substance	Gefahrenstoff, der Before hazardous substances are manipulated, the safety o be consulted.	( <i>chem</i> .) data sheets ought to
hazardous waste	gefährlicher Abfall, der Hazardous waste needs to be properly labelled.	(chem.)
hazmat	Acronym/Abbreviation referral: see hazardous material	(chem.)



140

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head office	Firmensitz, der; Hauptbüro, das; Hauptniederlassung, die For tax reasons, the head office was moved to Bern.	(econ.)
health, safety, environment	Gesundheit, Sicherheit, Umwelt(schutz) (che	em. eng.)
	Acronym (engl.): HSE	
	The company is considered a leader in HSE.	
heartburn	Sodbrennen, das; Pyrosis, die	( <i>med</i> .)
	Heartburn is a painful and burning sensation in the esophagus, usually as	ssociated
	with regurgitation of gastric acid.	
heat recovery	Wärmerückgewinnung, die	(eng.)
	A project for heat recovery from cooling water often has a short payba	ack time.
heat tracing	Begleitheizung, die	(eng.)
	Water pipelines in industrial plants sometimes require heat tracing.	
heat transfer	Wärmeübergang, der	(eng.)
	Heat transfer could be improved by increasing the turbulence.	
heat value, fuel value	Heizwert, der	(eng.)
	The heat value is often given in BTU (British Thermal Unit). 1 BTU is 1.05 kJ or 2.9 $\times 10^{-4}$ kWh.	s approx.
heating ventilation air conditioning	Heizungs -, Klima- und Lüftungstechnik, die;	(eng.)
U	Acronym (eng.) HVAC	
	Acronym (dt.): HKL, KHL	
	The HVAC engineer overdesigned the cooling tower by 20%.	
heavy metal	Schwermetall, das	(eng.)
	The term "heavy metal" is misleading. Many different definitions ha	
	proposed, e.g. based on density, atomic number, atomic weight or	•
	Beryllium, the fourth lightest element, is much more poisonous than	bismuth,
	the heaviest stable element.	

hemp	Hanf, der(chem.)Hemp can be used to produce natural fibers.
НЕРА	(eng.) Acronym/Abbreviation referral: see high efficiency particulate air filter
hepatic	hepatisch, zur Leber gehörig(pharm.)Tetrachloroethylene can lead to hepatic disorders.
heterogeneous	heterogen(chem.)In chemical kinetics, a heterogeneous reaction takes place at the interface of two phases, e.g. a solid and a gas or a liquid and a gas.
high efficiency particulate air filter	HEPA Filter, der(eng.)The HEPA filter needed be be replaced, because it had become wet.
highly alloyed	hochlegiert(eng.)Highly alloyed steel contains between 4 and 50% of elements such as molybdenum, manganese, nickel, chromium, vanadium, silicon or boron.
highly toxic	<ul> <li>sehr giftig (chem.)</li> <li>A chemical in any of the following categories is considered highly toxic:</li> <li>A chemical with a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats between 200 and 300 grams each.</li> <li>A chemical with a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.</li> <li>A chemical with a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.</li> </ul>

Antimony compounds are highly toxic.

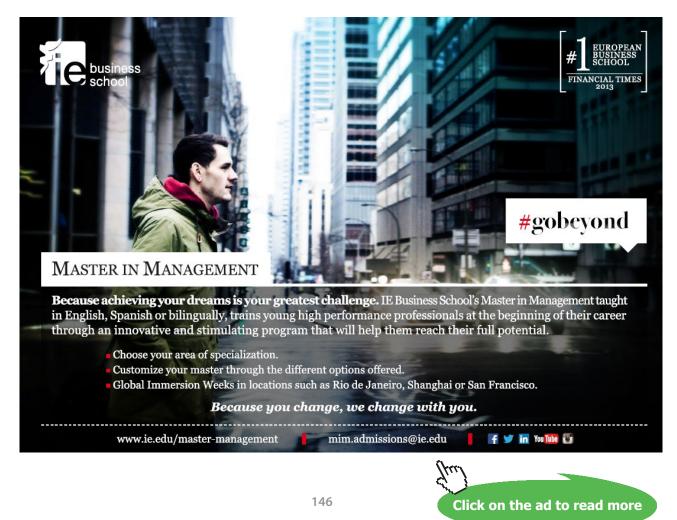
high voltage current	Starkstrom, der High voltage can be defined as min. 1000 V for alternating current and 1500 V for direct current. High voltage current is used in electrica transmission.	
hinge	Scharnier, das; Türangel, die Hinges can either be made of flexible material or of moving parts.	(eng.)
hinged	zusammenklappbar, klappbar The hinged lid was too heavy to lift.	(eng.)
hippuric acid	Hippursäure, die High concentrations of hippuric acid (benzoylaminoacetic acid, $C_9H_9N$ indicate a toluene intoxication. Hippuric acid is an organic acid which is in the urine of horses and other herbivores.	5
HMIS	Acronym/Abbreviation referral: see hazardous materials identification sy	(chem.) vstem



hoist	Winde, die A hoist was deployed to transport the raw materials to the bag slitting	( <i>eng</i> .) station.
hoisting device	Hebevorrichtung, die The hoisting device could handle loads of up to 5 tons.	(eng.)
holding company	Dachgesellschaft, die; Beteiligungsgesellschaft, die; Holding, die Berkshire Hathaway is one of the largest publicly-traded holding comp	( <i>econ</i> .) panies.
hole punch	Locher, der ( A hole punch is an office tool used to make holes in a sheet of paper.	general)
homeopathy	Homöopathie, die (j Homeopathic preparations are effective, they may make people feel be the placebo effect. A central thesis of homeopathy is that a sick person treated by a substance (in serial dilution) which can produce similar syn to those of the sickness.	n can be
homogeneous	homogen Homogeneous catalysts work in the same phase as the reactants, an e being organometallic catalysts.	( <i>chem</i> .) example
hood	Haube, die Noisy equipment can be placed under a hood.	(eng.)
hopper	Trichter, der The main feed hopper of the extruder was blocked with agglomerates.	(eng.)
horse power	Pferdestärke, die <i>Acronym (engl.): HP</i> <i>Acronym (dt.): PS</i> An engine rated at 75 kW has got 100 HP.	(eng.)
hose	Schlauch, der Hoses lying on the floor can lead to serious accidents.	(eng.)
hose coupling, hose fixture	Schlauchkupplung, die The hose coupling was worn out.	(eng.)

НР	Acronym/Abbreviation referral: see hydroprocessing	(eng.)
	Actonym/Abbreviation rejertai. see nyaroprocessing	
HSE		(chem. eng.)
	Acronym/Abbreviation referral: see health, safety, environment	
hue	Farbton, der	(eng.)
	A hue is an element of the color wheel.	
husbandry	Landwirtschaft, die	(general)
	Modern husbandry often relies heavily on fertilisers.	
HVAC		(eng.)
	Acronym/Abbreviation referral: see heating ventilation air conditio	ning
hydrated lime	gelöschter Kalk, der	(chem.)
	Hydrated lime $(Ca(OH)_2)$ is used in the manufacture of ebonit	
	one of the earliest plastics. Ebonite is a very hard rubber with a content.	high sulphur
hydraulic diameter	hydraulischer Durchmesser, der	(chem. eng.)
	The hydraulic diameter was determined to be 12 $\mu\text{m}.$	
hydraulic fluid, hydraulic liquid	Druckflüssigkeit, die; Hydraulikflüssigkeit, die; Hydrauliköl, das	(chem. eng)
	Brake fluid is a hydraulic fluid with high boiling point and low fr	eezing point.
	It is hygroscopic in order to absorb moisture which would oth	erwise cause
	corrosion in the brake system.	
hydraulic lock,		(eng.)
hydrostatic lock		
	Acronym/Abbreviation referral: see hydrolock	
hydrocarbon	Kohlenwasserstoff, der	(chem.)
	Butadiene ( $C_4H_6$ ) is an unsaturated hydrocarbon.	
hydrochloric acid	Salzsäure, die	(chem.)
	Hydrochloric acid is the solution of hydrogen chloride (HCl) in a monoprotic acid.	water. HCl is

hydroflouric acid	Flusssäure, die ( Hydrofluoric acid, which can etch glass, is used as a precursor for Te which is a registered trademark of DuPont for products made from flu containing polymers (fluoropolymers).	
hydrogen	Wasserstoff, der ( Acronym (engl.): $H_2$ Acronym (dt.): $H_2$ Hydrogen, the most abundant element in the universe, accounts for 75% matter by mass and for over 90% by the number of atoms.	chem.) % of
hydrogen chloride	Chlorwasserstoff, der ( <i>Acronym</i> ( <i>engl.</i> ): <i>HCl</i> <i>Acronym</i> ( <i>dt.</i> ): <i>HCl</i> Hydrogen chloride is a colorless gas, which can form white fumes of hydrod acid at contact with air humidity.	chem.) chloric



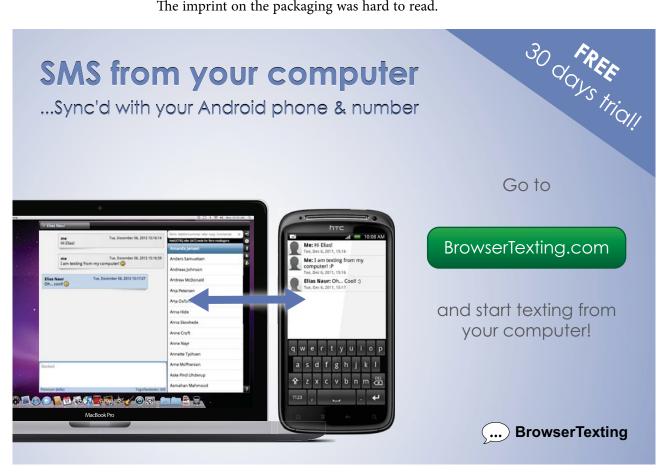
hydrogen peroxide	Wasserstoff peroxid, das(chem.Acronym (engl.): $H_2O_2$ (dt.): $H_2O_2$ Acronym (dt.): $H_2O_2$ (dt.): $H_2O_2$ Hydrogen peroxide can be used in the production of epoxides such as propylenoxide, which can be processed to polyurethane. Epoxides are ethers with onl3 ring atoms.	e
hydrolock, hydro lock	Hydrosperre, die; Hydrauliksperre, die ( <i>eng.</i> Hydrolock (short for hydraulic lock or hydrostatic lock) is an unwanter condition of an internal combustion engine in which an incompressible liquid such as water has entered into the cylinders. The pistons' movement is prevented and the engine will suffer significant damage.	d d
hydrolysis	Hydrolyse, die ( <i>chem.</i> Polymers which are susceptible to hydrolysis such as PET, polycarbonate and nylon need to be dried prior to processing.	
hydronics	Hydronik, die; Wärme – und Kälteübertragung durch Wasser, die ( <i>eng.</i> In hydronics, water is used as medium for heat transfer for heating and coolin applications.	
hydrophilic	hydrophil, wasserbindend(chem.Soap molecules have a hydrophilic head and a hydrophobic tail.	)
hydrophobic	hydrophob, wasserabweisend(chem.Alkanes, oils and fats are hydrophobic molecules.	)
hydroprocessing	Hydroprocessing, das(chem.Acronym (engl.): HPDuring the hydroprocessing of heavy oils, asphaltenes act as coke precursorwhich leads to catalyst deactivation.	
hypergolic	hypergol (chem. A hypergolic propellant is either of the two rocket propellants used in a hypergolic rocket engine, which spontaneously ignite when they come into contact. Th terms "hypergol" or "hypergolic propellant" denote the most common such propellant combination, hydrazine plus dinitrogen tetroxide.	ic le

hypoxia	Hypoxie, die	( <i>med</i> .)
	Hypoxia is a medical condition in which the body as a whole or a deprived of oxygen.	part of it is
I/A		(chem. eng.)
	Acronym/Abbreviation referral: see instrument air	
ICA		(eng.)
	Acronym/Abbreviation referral: see instrumentation control automa	tion
ICE		(eng.)
	Acronym/Abbreviation referral: see internal combustion engine	
ideal batch reactor	absatzweise betriebener idealer Rührkessel, der	(chem. eng)
	Acronym (engl.): IBR	
	The ideal batch reactor can be modelled more easily than an actua	ll one.
ideal plug flow reactor	· ideales Strömungsrohr, das	(chem. eng.)
	Acronym (engl.): IPFR	
	The ideal plug flow reactor is easy to model.	
idle	im Leerlauf	(eng.)
	An idle running engine has a low fuel consumption.	
IDLH		(chem.)
	Acronym/Abbreviation referral: see immediately dangerous to life an	ıd health
ignition	Zündung, die	(chem.)
	The auto ignition temperature of hydrogen is 571°C.	
immediately	unmittelbar schädlich für Leben und Gesundheit,	(chem.)
dangerous to life	akuttoxisch, IDLH-Konzentration, die	
and health	Acronym (engl.): IDLH	
	IDLH is the maximum concentration from which one could escap	be within 30
	minutes without any escape-impairing symptoms or any irrever effects.	sible health
immersion bath	Tauchbad, das	(chem.)
	The workpieces were treated in an immersion bath prior to shipm	ent.

immiscible	unmischbar The workpieces were treated in an immersion bath prior to shipmer	( <i>chem</i> .) nt.
impair, to	beeinträchtigen Chronic exposure to methanol can lead to impaired vision and o kidneys, heart and other organs.	(pharm.)
impermeable, nonpermeable,	dicht, undurchlässig	(chem.)
impervious	The landfill was sealed with an impermeable plastic foil.	
impetus	Impuls, der The impetus is a conserved quantity.	(eng.)
implant	Implantat, das A hip implant can consist of a titanium hip prosthesis with a cerami	( <i>pharm</i> .) ic head.
imprint	Aufdruck, der The imprint on the packaging was hard to read.	(pharm.)

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improper fraction	unechter Bruch, der 9/7 is an improper fraction.	(pharm.)
impurity	Verunreinigung, die Raw material income control can detect impurities in received goods	(eng.) 5.
in excess	im Überschuss If the solvent is a reaction partner, it is normally supplied in excess.	(chem.)
inadvertent use	versehentlicher Gebrauch, der Inadvertent use of household chemicals can be prevented by properly them and avoiding to put them into bottles designed for food.	( <i>pharm</i> .) v labelling
Inc.	Acronym/Abbreviation referral: see incorporated	(econ.)
inch	Zoll, der Acronym (engl.): in	(eng.)
inch rod	Zollstock, der Carpenters use inch rods.	(eng.)
incident	Vorfall, der Learning from previous indicents will eventually increase the safety o	( <i>eng</i> .) of a plant.
incinerate, to	einäschern Hazardous waste is generally incinerated.	(eng.)
inclination	Gefälle, das; Neigung, die The inclination of the factory floor is not acceptable for installing equipment.	( <i>eng</i> .) g the new
inclusion	Einschluss, der The pellets showed brown inclusions of degraded product.	(chem.)
incorporated	Aktiengesellschaft, die Acronym (engl.): Inc. Acronym (dt.): AG He works for XYZ Ltd.	(econ.)

incoterms (international commercial terms)	Incoterms, die; Lieferbedingungen ins Ausland, die	(econ.)
	Incoterms can be: EXW, FCA, FAS, FOB, CFR, CIF, CPT, CIP, DAF, DES DDU and DDP. Terms outside of those should be avoided as these at typically not clearly defined and may lead to disputes between buyer and EXW = ex works, FCA = free carrier, FAS = free alongside ship, FOB on board, CFR = cost and freight, CIF = cost, insurance and freight, carriage paid to, CIP = carriage and insurance paid to, DAF = delive frontier, DES = delivered ex ship, DEQ = delivered ex quay, DDU = d duty unpaid, DDP = delivery, duty paid.	re then d seller. = free CPT = ered at
incremental costs	Grenzkosten, die To fully load a plant, it might be advisable to sell overcapacity close to incre costs.	( <i>eng</i> .) mental
indelible	unauslöschbar (p He used an indelible marker to cross out the name on the packaging.	harm.)
industrial accident	Arbeitsunfall, der (g Industrial accidents have to be reported.	eneral)
industrial water	Brauchwasser, das ( <i>chen</i> The plant cannot obtain more than 450 m ³ /h of industrial water.	n. eng.)
inert gas purging	Inertbegasung, die (p The Grignard reaction, which is an important technique to form carbon- of carbon-phosphorus and carbon-silicon bonds with alkyl- or aryl- magn halides, required inert gas purging.	
inertia	Trägheit, die Inertia makes a moving body continue on his path.	(eng.)
infiltration	Einsickern, das Fast action by the fire brigade could prevent oil infiltration into the gro	( <i>eng</i> .) ound.
infinite	unendlich There are seemingly infinite opportunities.	(sci.)

inflammable, flammable	brennbar, leicht entzündbar, entflammbar	(chem.)
	If inflammable substances such as acetone are transported on the road, sign has to be placed on the vehicle.	a special
inflammation	Entzündung, die An inflammation of the skin can be caused by burns, chemical infections by pathogens or foreign bodies/physical inury.	( <i>med</i> .) irritants,
inflatable	aufblasbar Rotary valves with an inflatable gasket require more maintenance than ones.	( <i>eng</i> .) standard
inflow	Zustrom, der(chThe inflow was sent through a metal separator.	em. eng.)
ingest, to	(Nahrung) aufnehmen If methanol is ingested, blindness can occur.	(pharm.)



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inhale, to	einatmen	(pharm.)
	If inhaled, the chemical poses a serious choking hazard.	
inhibitor	Hemmstoff, der	(chem.)
	Volatile amines added to steam are an example of corrosi	on inhibitors; For
	instance, they can be used in boilers used to drive turbines to p	rotect the pipelines
	by increasing the pH.	
inhomogeneous	inhomogen	(chem.)
	Inhomogeneous raw materials can lead to fluctuations in a do	wnstream process.
initial value	Anfangswert, der	(eng.)
	A recipe stores the initial value of the various feeds.	
INN		(chem.)
	Acronym/Abbreviation referral: see International Nonpropriet	tary Name
inoculate, to	mit Keimen beimpfen	(pharm.)
	The cow was inoculated against the disease.	
inoculation	Beimpfung, die; Impfung, die	(pharm.)
	By inoculation, immunity against various infectious disease	es can be obtained.
	The earliest record of inoculation dates back to India in the	8 th century.
inorganic	anorganisch	(chem.)
	Inorganic carbon compounds are, for example, carbon mono	oxide (CO), carbon
	dioxide ( $CO_2$ ), carbonates ( $CO_3^{2}$ ), cyanides ( $CN^{-}$ ), cyanates	(OCN ⁻ ), carbides,
	and thiocyanates (SCN ⁻ , rhodanide). Urea was the first org	anic molecule that
	could be synthesized from inorganic precursors.	
inquiry	Anfrage, die	(general)
	The inquiry about 300 tons of antioxidant was a huge opport	rtunity.
insect infestation	Insektenbefall, der	(pharm.)
	By monitoring temperature and moisture of grain stora	age rooms, insect
	infestation can be controlled.	

inside battery limits	ISBL; Bereich Kernanlage, der Acronym (engl.): ISBL	(chem. eng)
	ISBL is typically the process unit itself, whereas OSBL consists of a to make ISBL work, such as utilities, feed streams and product st	
insoluble	unlöslich Barium sulfate (BaSO ₄ ) is virtually insoluble in water (0.00115 g.	( <i>pharm</i> .) /l at 18°C).
inspect, to	befahren Prior to inspecting the vessel, the engineer measured the atmosp	( <i>chem. eng</i> .) bhere inside.
instrument air, plant air	Instrumentenluft, die; I-Luft, die	(chem. eng.)
	<i>Acronym (engl.): I/A</i> The instrument air was supplied at 10 bar (150 psi).	
Instrumentation Control Automation	Messen, Steuern, Regeln	(eng.)
	Acronym (engl.): ICA Acronym (dt.): MSR The ICA engineer received his training at Munich University of	Technology.
insufflation	Einblasen, das Insufflation of inert, nontoxic gases such as carbon dioxide into is done to expand workroom during surgery.	( <i>med</i> .)
insulate, to	isolieren (gegen Wärmeübertragung) Thermal insulation can strongly decrease operating costs.	(chem.)
insulator	Isolator, der Silicon dioxide is a very good electrical insulator.	(chem.)
intellectual property	geistiges Eigentum, das <i>Acronym (engl.</i> ): <i>IP</i> Patents offer intellectual property protection.	(eng.)
intellectual property rights	gewerblicher Rechtsschutz, der; Immaterialgüterrecht, das	(econ.)
	The company employs three IPR officers.	

interact, to	wechselwirken	(chem.)
	Light and matter can interact by absorption, emission and scattering.	
interest	Zinsen, die (Zins, der)	(econ.)
Interest	Debts bear interest.	(00011.)
inteface	Grenzschicht, die	(chem.)
	The interface between the solid and the surrounding liquid was studi	
interim storage	Zwischenlagerung, die	(pharm.)
0	There was no room for interim storage of the raw materials.	<b>4</b> ,
interlock	Verriegelung, die (ch	em. eng.)
	The accident happened because a safety interlock had been bypassed.	0
intermediate product,	Zwischenprodukt, das	(chem.)
intermediate	-	
	In the production of ethylene from sugar cane, ethanol is an interproduct. Metabolites are intermediates and products of metabolism.	ermediate

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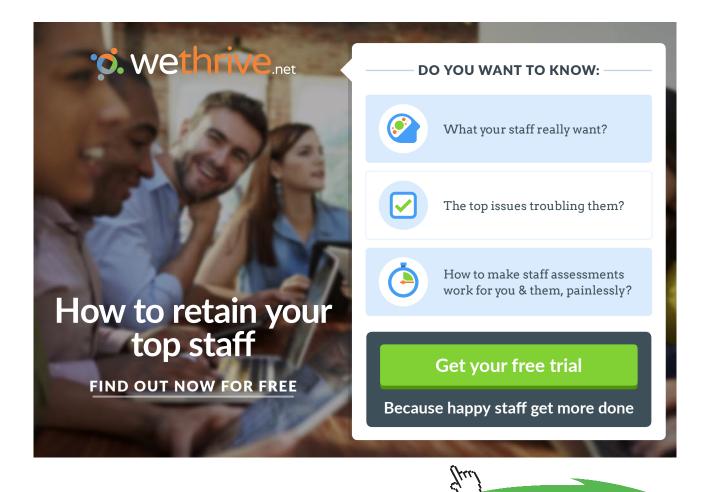
155

intermediate stage	Zwischenstufe, die(pharm.)Sodium pyrosulfate $(Na_2S_2O_7)$ is produced in an intermediate stage in the preparation of sulfur trioxide $(SO_3)$ .
intermediate storage	Zwischenlager, das(chem.)Also intermediate storage areas have to fulfill all safety requirements.
intermixing	Untermischung, die (pharm.) The researcher investigated atom intermixing at metal/semiconductor interfaces at the nano-scale.
internal combustion engine	Verbrennungsmotor, der(eng.)Most internal combustion engines run on liquid or gaseous fuels.
internal rate of return	
International Nonproprietary Name	internationaler Freiname, der (pharm.) Acronym (engl.): INN The International Nonproprietary Name (INN, rINN (recommended
	International Nonproprietary Name), pINN (proposed International Nonproprietary Name)) of a pharmaceutical substance is the official non-proprietary or generic name, assigned by the WHO, e.g. "paracetamol".
International Protection Ingress Protection	Acronym/Abbreviation referral: see IP code
interpolate, to	interpolieren ( <i>sci.</i> ) Data from interpolation are more reliable than those from extrapolation.
interprete, to	deuten ( <i>sci.</i> ) The engineer interpreted the damage to the engine as a result of knocking.

intersect, to	sich kreuzen	(sci.)
	The engineer wondered why the 2 lines did not intersect.	
intestine	Darm, der; innerlich	( <i>med</i> .)
	Gastroenteritis is an inflammation of the intestines and is the	e most common
	disease of the intestines. Colitis is an inflammation of the large	e intestine.
intimate mixture	innige Mischung, die	(chem.)
	A plastics compound is an intimate mixture of base resin, colo	or and mineral
	fillers.	
intrinsically safe	eigensicher, intrinsisch sicher, von innen heraus sicher	(eng.)
	An intrinsically safe piece of electronic equipment can be deplo	yed in explosive
	atmospheres.	
invention	Erfindung, die	(sci.)
	Generally, a patent grants protection of an invention for up to	20 years.
inventory	Inventar, das	(econ.)
	A huge inventory can block significant amounts of working ca	pital.
investigation	Untersuchung, die	(general)
	The incident led to an official investigation.	
iodine	Iod, das	(chem.)
	Acronym (engl.): I	
	Acronym (dt.): I	
	Iodine is the heaviest element known to be necessary for all live	ving organisms.
IP		(econ.)
	Acronym/Abbreviation referral: see intellectual property	

IP code	IP-Kodex, der	(chem. eng.)
	The IP Code consists of the letters IP followed by two digits a	nd an optional
	letter. It classifies the degrees of protection offered by electrical	enclosures. The
	first digit indicates the level of protection that the enclosure p	rovides against
	access to hazardous parts (e.g. electrical conductors and moving	g parts) and the
	ingress of solid foreign objects. The second digit indicates the lev	el of protection
	of the equipment inside the enclosure against ingress of water. T	he highest level
	of protection, IP 68, stands for complete dust - tightness and w	ater-tightness.
IPR		(econ.)
	Acronym/Abbreviation referral: see intellectual property rights	
iron	Eisen, das	(chem.)
	Acronym (engl.): Fe	
	Acronym (dt.): Fe	
	Hematite $(Fe_2O_3)$ and magnetite $(Fe_3O_4)$ are iron oxide mineral	s.
IRR		(econ.)

Acronym/Abbreviation referral: see internal rate of return



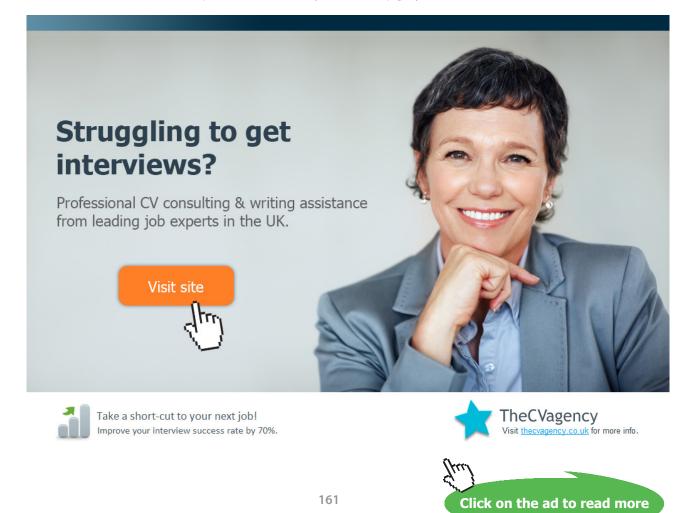
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irradiate, to	bestrahlen(pharm.)By irradiating certain plastics, cross-linking can be achieved.
irrigate, to	bewässern ( <i>eng.</i> ) Farmers regularly need to irrigate dry fields.
Irrigation	Bewässerung, die(eng.)By irrigation, the yield of a crop can be increased.
Irritant to the skin	hautreizend ( <i>chem</i> .) Formaldehyde (methanal, HCHO) is irritant to the skin, the eyes, and the mucous membranes.
irritate, to	reizen (chem.) The product irritates the skin upon contact.
irritating	reizend (pharm.) Acetone ( $(CH_3)_2CO$ ) shows an irritating effect on the skin due to defatting action. The vapors are irritating to the eyes, too.
IS	(eng.) Acronym/Abbreviation referral: see intrinsically safe
ISBL	(chem.eng.) Acronym/Abbreviation referral: see inside battery limits
isolate, to	isolieren (abtrennen) (chem.) The contaminated room was isolated.
isolation	Isolation, die(chem.)To prevent contagious diseases from being spread from one patient to another, the victims were kept in isolation.
issue	Ausgabe, die; Angelegenheit, die(general)People issues had led to the low plant performance.
issue, to	ausstellen(general)The final report was issued three weeks after the incident.

jack, screw jack	Dehnschraube, die; Schraubspindel, die; Wagenheber, der (er A self-locking jack screw is intrinsically safer than other hydraulic actuate	ıg.) ors
	that require continuous pressure to remain in a locked position.	
jar	Weithalsgefäß, das (cher	n.)
	The contents of the jar had to be thrown away because the label was missin	g.
jaundice	Gelbsucht, die (phart	n.)
	Jaundice is a yellowish discoloration of tissue, whites of the eyes, and boc fluids with bile pigment caused by liver problems.	lily
jet pump, injector	Injektor, der (chem. er	ıg.)
	The steam injector was insulated to prevent burns at the hot surface.	
jigsaw	Laubsäge, die (en	ıg.)
	She needs a new blade for her jigsaw.	
job application	Bewerbung, die (er	ıg.)
	A job application by email deserves the same attention to spelling mistakes one sent by letter.	as
jobsite	Arbeitsplatz, der (gener	al)
	The wearing of PPE is mandatory at the jobsite.	
join, to	verbinden (en	ıg.)
	The man joined the two wires.	
joiner	Tischler, der (gener	al)
	The joiner was looking out for a successor.	
jointless	fugenlos, durchgängig (er	ıg.)
	Jointless railway tracks are made of steel with a low coefficient of therr	nal
	expansion.	
keg	Fass, das (en	ıg.)
	A Munich-based company develops and markets a keg for beer which can	be
	cooled down without electricity.	

key performance indicators	Kennzahlen, die	(econ.)
	<i>Acronym (engl.): KPI</i> The KPI of the plant could be fulfilled easily.	
kilopond	Acronym/Abbreviation referral: see kp	(eng.)
knob	Knopf, der Door knobs need to have good haptics.	(eng.)
knowledge	Wissen, das Some knowledge expires, so it has to be constantly increased.	(general)
kp	Kilopond, das 1 kilogram-force (kilopond, kp) is equal to 9.81 N, which is the SI ur The unit kp is outdated.	( <i>eng</i> .) nit of force.
KPI		(econ.)

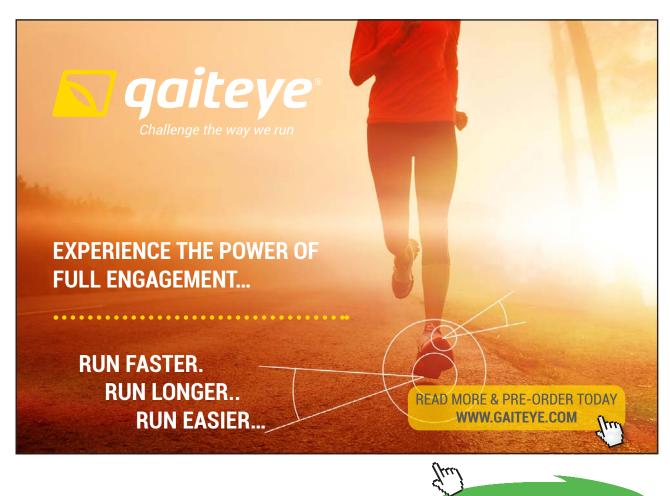
Acronym/Abbreviation referral: see key performance indicators



$\mathbf{K}_{_{\mathrm{V}}}$ flow factors	$K_v$ -Wert, der; Durchflussfaktor, der; Durchflusskoeffizient, der ( <i>eng.</i> ) The $K_v$ flow factor, measured in m ³ /h or l/min, is used to describe the flow through a valve at a pressure difference of 1 bar.
L/C	(econ.) Acronym/Abbreviation referral: see letter of credit
lab coat	Laborkittel, der ( <i>chem</i> .) She exchanged her lab coat made of cotton with one made of a flame-retardant material.
label	Etikett, das (general) The label on the flask did not reveal the quantity of the substance therein.
label, to (labelled)	beschriften(general)label, to (labeled) (AE)The flask with the brown liquid was not labelled.
laboratory	Labor, das(chem.)The laboratory is equipped with two fume cupboards.
laboratory assistant	Laborant(in), der (die)(chem.)Laboratory assistants have to make sure that they record all experimental data
laboratory notebook	Laborjournal, das ( <i>chem.</i> ) After he had spilled a bottle of acetic acid over his laboratory notebook, the entries were barely readable.
laboratory technician	Laborant(in), der (die)(chem.)During the last years, the laboratory technician has gained vast experience.
labour	Arbeit, die; schwere Arbeit, die; Personal, das; Personalaufwand, der ( <i>general</i> ) <i>labor (AE)</i> Technology has made redundant a lot of hard labour.
lacrimal fluid	Tränenflüssigkeit, die(pharm.)There are basal tears, reflex tears and emotional tears. The lacrimal fluid of emotional tears contains more protein-based hormones such as prolactin and leucine enkephalin (a natural painkiller) than basal or reflex tears.

lacrimator, lacrymator, lachrymat	tränenreizender Stoff, der or.	(chem.)
lachrymatory agent	,	
lacin ymator y agent	Bromoacetone (CH ₃ COCH ₂ Br) is a lachrymatory agent.	
lactic acid	Milchsäure, die Lactic acid (2-hydroxypropanoic acid) is chiral and has two optic The L-(+)-lactic acid is biologically important.	( <i>chem</i> .) al isomers.
lacotse	Milchzucker, der Lactose (milk sugar) makes up 2–8% of milk (by weight).	(chem.)
laminated core	Blechpaket, das; Blechkern, der (laminierter Kern in Transformatoren) In a rapidly changing field, e.g. a transformer, iron cannot be us form, because its good conductivity leads to intense eddy currents in huge losses (this is used advantageously in induction heating, the techniques are commonly used together to increase the resistivity use in transformers: lamination (yielding a laminated core) and allo iron with silicon.	s, resulting ough). Two of iron for
laminated foil	Verbundfolie, die The laminated foil consists to 60% of cardboard.	(eng.)
laminated tablet	Manteltablette, die The laminated tablet has a coating made out of polystyrene.	(pharm.)
landfill	Mülldeponie, die Landfill gas can be used to produce electricity.	(eng.)
large scale production	großtechnische Produktion, die (a Downtime in large scale production plants is rigorously minimized	chem. eng.)
large-scale synthesis, industrial synthesis	großtechnische Synthese, die Industrial synthesis of ammonia exceeds 100 million tonnes/year.	(chem.eng)

last in, first out	LIFO, die zuletzt Eingetroffenen (Waren, Rohstoffe, Lagerbestände, Anträge,) zuerst The consultant proposed not to run the warehouse for perishal according to the LIFO principle.	( <i>econ</i> .) ble goods
lasting	dauerhaft Glue offers a lasting connection.	(eng.)
latency period, incubation period	Latenzzeit, die; Inkubationszeit, die	( <i>med</i> .)
Ĩ	The incubation period, i.e. the time that elapses between exposure an manifestations of a disease, is often longer in adults than in children	
lattice	Gitter, das; Kristallgitter, das The monoclinic crystal system is one of the 7 lattice point groups.	(chem.)
laxative, purgative	Abführmittel, das The monoclinic crystal system is one of the 7 lattice point groups.	(pharm.)



164

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layer	Schicht, die (Aufbau)(eng.)The oil formed an even layer on the water.
Layer of Protection Analysis	LOPA (chem. eng.)
·	Acronym (engl.): LOPA
	LOPA is a tool for hazard evaluation and risk assessment.
layout	Aufstellung, die; Aufriss, der (eng.)
	The layout of the utility building was still unclear.
layout diagram	Bestückungsplan, der (chem. eng.)
	The layout diagram of the warehouse did not show the firefighting equipment.
layout plan	Aufstellungsplan, der (eng.)
	The plant layout plan was well organized.
LC50	LC50-Wert, der; letale Konzentration, die ( <i>chem.</i> ) The LC50 (lethal concentration 50, median lethal concentration) is the concentration of a substance in air that, via the respiratory route, is expected to kill 50% of a population of test animals when administered as a single exposure in a specific time period, usually 1 hour.
LCLO	geringste letale Konzentration, die (chem.) LCLO (lethal concentration low) is the lowest concentration of a substance in air reported to have caused death in humans or animals. The reported concentrations may be entered for periods of exposure that are less than 24 h (acute) or greater than 24 h (subacute and chronic).
LD50	LD50-Wert, der; mittlere letale Dosis, die(chem.)The LD50 or median lethal dose is a dose which will kill 50% of an exposed population.
LDLO	geringste letale Dosis, die(chem.)LDLO (lethal dose low) is the lowest dose of a substance introduced by any route,other than inhalation, reported to have caused death in humans or animals.

leaching	Auslaugen, das Leaching is commonly used in metallurgy to convert metals into sol as illustrated for zinc oxide here: $ZnO + H_2SO_4> ZnSO_4 + H_2O$ .	( <i>chem</i> .) luble salts,
lead	Blei, das <i>Acronym (engl.): Pb</i> <i>Acronym (dt.): Pb</i> Lead glass is composed of 10–30% lead oxide.	(chem.)
lead time	Vorlaufzeit, die The lead time for a new product is 8 months.	(econ.)
leak, to	lecken (c A leaking valve poses a safety risk.	hem. eng.)
lean	mager Fuel-lean combustion produces low NO _x emissions, however, hydrocarbons and CO can increase.	( <i>chem</i> .) unburnt
ledger	Hauptbuch, das; Kassenbuch, das The whole department frantically looked for the missing ledger.	(econ.)
legal enforcement	Durchsetzung vor Gericht, die He wanted legal enforcement of the contract. <b>legend drugs (AE)</b> <i>Acronym/Abbreviation referral: see POM</i>	(jur.) (pharm.)
legible	leserlich The handwriting was barely legible.	(pharm.)
LEL	Acronym/Abbreviation referral: see lower explosive limit	(chem.)
lesion	Läsion, die; Wunde, die; Verletzung, die A lesion is an abnormal change, injury, or damage to tissue or to an	( <i>med</i> .) organ.
lethal concentration low		(chem.)

## Acronym (engl.): LCLO

letter of credit	Bankgarantie, die <i>Acronym (engl.</i> ): <i>L/C</i> A duly confirmed and irrevocable L/C guarantees full payment.	(econ.)
lever	Hebel, der He lifted the machine using a steel bar as lever.	(eng.)
lever rule	Hebelgesetz, das The lever rule can be understood intuitively.	(eng.)
levorotary	linksdrehend If a chiral molecule is dextrorotary, its enantiomer will be levorota vice-versa.	( <i>chem</i> .) ary, and
liabilities	Verbindlichkeiten, die All debts and liabilities of a company can be found in the balance shee	( <i>econ</i> .) et.



167

licence to operate	Betriebsgenehmigung, die <i>license to operate (AE)</i> <i>Acronym (engl.): LTO</i> The licence to operate was coupled to a few requirements by auth	( <i>chem. eng</i> .) norities.
lid	Deckel, der The space between vessel and lid showed significant contaminatio	( <i>eng</i> .) on.
life science	Biowissenschaft, die Life sciences offer interesting career opportunities.	(chem.)
LIFO	Acronym/Abbreviation referral: see last in, first out	(econ.)
light alloy	Leichtmetall, das He bought light alloy rims.	(eng.)
light bulb	Glühbirne, die Conventional light bulbs only convert 1% of the electrical energy	( <i>eng</i> .) rinto light.
light metal	Leichtmetall, das Lithium, beryllium, sodium, magnesium and aluminum are light	(eng.) metals.
lighting	Beleuchtung, die The skylight provided sufficient lighting for the production hall.	(eng.)
lightning rod	Blitzableiter, der The lightning rod of the house protrudes 1 m into the air.	(eng.)
lignite	Braunkohle, die Lignite, which contains approx. 60% carbon, has got an ash con 6% to 19% compared to bituminous coal, where it is only 6% to 1	
lime	gebrannter Kalk, der <i>Acronym (engl.): CaO</i> <i>Acronym (dt.): CaO</i> When working with lime, protective goggles should be worn.	(chem.)

lime, calcium carbonate	<b>e</b> Kalk, der <i>Acronym (engl.): CaCO</i> ₃	(chem.)
	Acronym (engl.): CaCO ₃	
	Marble is made of calcite, a crystalline modification of CaCO ₃ . CaO	$CO_3$ is also
	the main component of shells of marine organisms and eggshells.	
limited	GmbH, die	(econ.)
	He works for Company ABC Ltd.	
line voltage	Netzspannung, die	(eng.)
	The line voltage in China is 220V.	
linear programming	lineare Optimierung, die	(eng.)
	Linear programming for chemical engineering problems, e.g. yield	increase of
	a plant, can be facilitated by several software packages.	
lining	Auskleidung, die	(chem.)
	The lining was damaged by the corrosive medium.	
lining disk	Beilagscheibe, die	(eng.)
	The apprentice bought a set of lining disks.	
lin-log graph	linear-logarithmische Darstellung, die	(sci.)
	A lin-log graph uses a logarithmic scale on the x axis, and a linear so	
	y axis.	
	,	
linseed oil	Leinöl, das	(chem.)
	Linseed oil is used by some painters.	
liquefaction	Verflüssigung, die (d	chem. eng.)
	The Bergius process is a method to produce liquid hydrocarbo	ons by the
	hydrogenation of lignite (brown coal) at elevated temperature and	l pressure.
	The coal liquefaction can be described as $nC + (n+1)H_2 \rightarrow C_nH_{2n+2}$	·
liquefied propane gas	Flüssiggas, das; Propangas, das; verflüssigtes Propangas, das (a	chem. eng.)
1 1 1 · · · · · · ·	Acronym (engl.): LPG	
	Acronym (dt.): LPG	
	The energy density of LNG is approx. 60% of that of diesel fuel.	
	<i>6/ / 11</i>	

liquefy, to	verflüssigen (	chem. eng.)
	LNG (liquefied natural gas) can be transported on special ships.	
liquid	flüssig, Flüssigkeit, die By supercooling, a liquid can be chilled below its freezing poi becoming solid. For water, supercooling down to -42°C is feasible.	( <i>chem</i> .) int without
liquidated damages, ascertained damages	vereinbarte Vertragsstrafe, die; Vertragsstrafe, die	(econ.)
useer tunned tunnuges	Liquidated damages were 2 MEUR.	
liquor	Flüssigkeit, die; Körperflüssigkeit, die; geistiges Getränk, das Black liquor is a byproduct of the Kraft process, where pulp is proc	(chem.)
	wood.	
litigation	Rechtsstreit, der; Prozess, der	(jur.)
	The costs of litigation pose a great threat, since they typcially have by the losing party.	to be borne



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170

litmus	Lackmus, der (das) (cher Litmus paper is one of the oldest pH indicators changing from blue (acidic) red (alkaline) between a pH of 4.5–8.3.	
live vaccine	Lebendimpfstoff, der(phartA live vaccine is prepared from living attenuated organisms or viruses.	<i>m</i> .)
load	Beanspruchung, die(enThe shear load was too high for the material.	ng.)
lock nut	Kontermutter, die(enThe engineer tightened the lock nut.	ng.)
lock washer	Sicherungsscheibe, die; Federring, der ( <i>er</i> Due to its special design, the piece outperforms similar lock washers.	ng.)
locknut	Sicherungsmutter, die; Klemmmutter, die (en In applications were a standard nut would loosen over time due to vibration so-called locknut can be tightened against it to permanently fix its position	
lockout/tagout	Verriegelungssysteme, die (chem. en A good lockout/tagout system is important to guarantee safe maintenan conditions in chemical plants (lock out = protection with a padlock, tag ou protection with a notice).	nce
log-lin graph	logarithmisch-lineare Darstellung, die (s A log-lin graph uses a linear scale on the x axis, and a logarithmic scale on y axis.	sci.) the
log-log graph, log-log plot	doppelt logarithmische Darstellung, die (sci.) y = $a^*x^b$ will appear as a straight line on a log-log graph, in which b will be the slope of the line and log(a) will be the y value corresponding to x=1. These graphs are useful when the parameters a and b need to be estimated from numerical data.	
long-pass filter	für langwelliges Licht durchlässiger Filter, der (er A long-pass filter transmits wavelengths longer than a specific wavelength.	ng.)

loose, bulk, not fixed	lose The string was hanging loosely from the ceiling.	(general)
LOPA	Acronym/Abbrevation referral: see Layer of Protection Analysis	(chem. eng.)
lose, to (lost, lost)	verlieren After exposure to propanol vapours, the operator lost his conscio	(general) pusness.
loss of containment	Materialaustritt, der; Verlust der Einkapselung, der Loss of containment was the root cause for the fire in the refiner	(chem. eng.) y.
lot, batch	Charge, die; Los, das Steel cooking is typically carried out as a discontinuous batch pro	(chem.) ocess.
louvre	Dachaufsatz, der; Lüftungsschlitz, der; Jalousie, die Louvres were installed on 2 sides of the building.	(eng.)
low current, weak current	Schwachstrom, der	(eng.)
	Low current LEDs work at 1–2 mA.	
low voltage	Kleinspannung, die; Schwachstrom, der The IEC (International Electrotechnical Commission) defines lo any voltage between 50–1000 V AC or 120–1500 V DC.	( <i>eng</i> .) ow voltage as
lower explosion limit	Acronym/Abbrevation referral: see lower explosive limit	(chem.)
lower explosive limit	untere Explosionsgrenze, die Acronym (engl.): LEL Acronym (dt.): UEG The LEL of 1,3 butadiene is ~2%.	(chem.)
lozenge	Lutschtablette, die; Rhombus (math.) Cough tablets have taken the name lozenge, based on their origin	( <i>pharm</i> .) nal shape.
LPG	Acronym/Abbreviation referral: see liquefied propane gas	(chem. eng.)

Ltd.	(ecor	ı.)
	Acronym/Abbreviation referral: see limited	
LTO	(chem. eng	<u></u> .)
	Acronym/Abbreviation referral: see licence to operate	
lube	Gleitmittel, das (pharm	ı.)
	Lubes are often silicone-based.	
lubricant	Schmiermittel, das; Schmierstoff, der (eng	g.)
	Molybdenum disulfide $(MoS_2)$ is a solid lubricant suitable for elevate	ed
	temperatures.	
lubricate, to	schmieren (eng	<u>g</u> .)
	Machines need to be lubricated according to the manufacture	ſs'
	recommendations.	
lug	Henkel, der; Öse, die (eng	<u>z</u> .)
	3 lugs were used to lift the reactor.	



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## Chemical Engineering Vocabulary

lukewarm	handwarm, lauwarm (gene The water was lukewarm.	eral)
lumber	Bauholz, das(eShe found a cheap source for lumber.	eng.)
lump	Brocken, der; Klumpen, der (6 Moisture has led to the formation of lumps in the product.	eng.)
lye scrubber	Laugenwäscher, der(chem. eA lye scrubber is used to wash out acid gases.	eng.)
lyophilised	gefriergetrocknet(phate)lyophilized (AE)The lyophilised blood sample was retrieved from the storage room.	rm.)
magic potion	Zaubertrank, der (pha Magic potions are prepared by a magician, sorcerer, dragon or witch to b poison or bewitch people.	
magnetic stirring bar	Rührstäbchen, das(phaThe magnetic stirring bar was coated with polybutadiene rubber.	rm.)
magnifying glass	Lupe, die (e In order to read the comments on the P&ID, he had to use a magnifying g	eng.) lass.
main group	Hauptgruppe, die (cha Main group elements are the most abundant elements both on earth and in universe.	em.) 1 the
main header (cooling water)	Hauptsammler, der (4 The main header could handle a flow of 500 m ³ /h.	eng.)
maintenance	Instandhaltung, die (chem. e A rule of thumb is that yearly maintenance costs are approx. 2% of the investm value of an equipment.	U U

major constituent	Hauptbestandteil, der(chem.)Nitrogen is the major constituent of air.
malaise	Unwohlsein, das (pharm.) Malaise is a feeling of general discomfort, distress, or uneasiness.
malfunction	Funktionsstörung, die(eng.)Malfunction of a single valve has led to a complete plant shutdown.
malignant	bösartig, malign(med.)The term malignant tumor is synonymous with cancer.
malleable	plastisch, verformbar, kalt verformbar, schmiedbar, hämmerbar ( <i>eng.</i> ) In material science, ductility specifically refers to a material's ability to deform under tensile stress (e.g. stretching into a wire). Malleability, a similar concept, refers to a material's ability to deform under compressive stress (e.g. forming a thin sheet by hammering or rolling). Ductility and malleability do not always correlate with each other; for instance, gold is both ductile and malleable, but lead is only malleable. The most malleable metals are, in descending order: gold, silver, lead, copper, aluminium, tin, platinum, zinc, iron, and nickel.
mammal	Säugetier, das(pharm.)There are approximately 5,400 species of mammals, all of which (except the egg-laying monotremes) give birth to live young. Mammals are vertebrates.
management ratio	betriebliche Kennzahl, die (econ.) ROE (return on equity) and ROA (return on assets) are two commonly used management ratios. The former is calculated as net profit/equity, the latter as net income/total assets.
manganese	Mangan, das(chem.)Acronym (engl.): $Mn$ Acronym (dt.): $Mn$ The salt potassium permanganate (KMnO ₄ ), where manganese is found in the+7 oxidation state, is a strong oxidizer that produces $MnO_2$ , which is also knownas pyrolusite.

manganese module	Manganknolle, die	(chem. eng.)
	Manganese nodules are made of concentric layers of iron an	nd manganese
	hydroxides. The growth process is one of the slowest of all geologic	al phenomena
	with a rate of 1 centimeter over several million years.	
manhole	Mannloch, das	(chem. eng.)
	The vessel was inspected via the manhole.	
manifold	Sammelrohr, das; Druckluftverteiler, der;	(eng.)
	Übergangsstück, das; Verteilerrohr, das; Verteilerbatterie, die	
	A manifold is a distribution piece of pipes or channels in system	ns that handle
	fluids.	
manual	Handbuch, das	(chem.)
	It is advisable to read the manual before use of the instrument.	
МАОР		(eng.)
	Acronym/Abbreviation referral: see maximum allowable operating	g pressure



marble	Marmor, der Finely ground marble is used in toothpaste.	(chem.)
marginal costs	Grenzkosten, die The larger a plant is, the lower the marginal costs are.	(econ.)
markup	Handelsspanne, die; Preisaufschlag, der Items that went via the consultant's books were subjected to a 5%	( <i>econ</i> .) 6 markup.
masonry	Mauerwerk, das The masonry was made from concrete.	(eng.)
mass	Masse, die The mass of the earth and the sun is $6*10^{24}$ kg and $2*10^{30}$ kg, res	( <i>chem</i> .) pectively.
mass balance	Massenbilanz, die The mass balance results from the conservation of mass.	(chem. eng.)
mass flow	Massenfluss, der The angle in the cone of the silo did not permit mass flow.	(chem. eng.)
mass flow, mass flow rate	Massenstrom, der The mass flow through the PFR (plug flow reactor) was 50 kg/h.	(chem. eng.)
master formula	Herstellungsvorschrift, die He did not disclose the master formula of the ointment.	(pharm.)
masticator	Walzwerk, das Masticators are extensively used in the rubber industry.	(eng.)
material	Werkstoff, der Plywood is a common composite material.	(chem.)
material safety data sheet	Sicherheitsdatenblatt, das Acronym (engl.): MSDS, SDS	(chem. eng.)
	Operators need to have access to MSDS in their native language.	

material science, materials science	Werkstoffkunde, die	(chem.)
	Tribology, the study of wear due to friction, is part of material science	<u>.</u>
matter	Materie, die Granite, an igneous rock, is an example of inhomogeneous matter.	(chem.)
maximum allowable concentration	maximale Arbeitsplatzkonzentration, die	(chem.)
	Acronym (engl.): MAC	
	Acronym (dt.): MAK-Wert	
	Acronym/Abbreviation referral. see threshold limit value	
	Granite, an igneous rock, is an example of inhomogeneous matter.	
maximum allowable operating pressure	höchstzulässiger Betriebsdruck, der	(eng.)
	Acronym (engl.): MAOP	
	The vessel ruptured 0.5 MPa above its MAOP.	
MBTU	1000 BTU	(eng.)
	Though an unofficial unit, the MBTU is still used in many countries, for for air conditioning units.	instance
MC room	Acronym/Abbreviation referral: see motor control room	(eng.)
MCC	Acronym/Abbreviation referral: see motor control cabinet	(eng.)
mean free path	mittlere freie Weglänge, die The mean free path of a gas molecule decreases with increasing pressu	( <i>chem</i> .) 1re.
mean lethal dose	Acronym/Abbreviation referral: see LD50	(chem.)
measure, to	messen The flow was measured at three locations in the process.	(eng.)

measurement	Messung, die In-situ measurements are more timely, accurate and reliable than offline results.	( <i>eng</i> .) e analyser
measurement and control, instrumentation and control	Messen, Steuern, Regeln; MSR (ch	nem. eng.)
	The instrumentation and control engineer attended a training.	
measuring station	Messwarte, die (ch The measuring station was situated in the middle of the production l	<i>hem. eng</i> .) hall.
mechanical advantage	Hebelarm, der; Hebelübersetzung, die (eng.) A block and tackle is commonly used on boats, where motorized aids are often not available, and where the mechanical advantage can be used to lift heavy loads.	
mechanical engineering	g Maschinenbau, der Germany is strong in exporting mechanical engineering know-how.	(eng.)



medicated	medizinisch, heilend, Arzneistoffe enthaltend An ointment may be medicated or not.	(pharm.)
medication	Arzneimittelanwendung, die; medizinische Behandlung, die There was no medication to treat his rash.	(pharm.)
medicinal product	Arzneistoff, der Medicinal products are used to treat or prevent diseases in human b	(pharm.) beings.
melamine	Melamin, das Melamine, a trimer of cyanamide, together with formaldehyde yields resin, a very durable thermosetting plastic. Cyanamide can be of hydrolysis of calcium cyanamide in the presence of carbon dioxide by Caro process according to: $CaCN_2 + H_2O + CO_2> NH_2-CN + Ca$	otained by the Frank-
melting point	Schmelzpunkt, der The melting point of polypropylene is approx. 160°C.	(chem.)
memorandum of understanding	Absichtserklärung, die; Memorandum, das <i>Acronym (engl.): MoU</i> The two parties signed a brief MoU.	(econ.)
mercury, quicksilver	Quecksilber, das Acronym (engl.): Hg Acronym (dt.): Hg The melting point of mercury is -38.83°C.	(chem.)
mesh	Masche, die; Netz, das The mesh was made from polypropylene.	(eng.)
metabolic path	Abbauweg, der Toluene ( $C_7H_8$ ) is less toxic than benzene ( $C_6H_6$ ), because its methy more readily oxidized than the aromatic ring. This metabolic path le toxic metabolites.	
metabolite	Metabolit, der; Abbauprodukt, das Urea (aminomethylamide, carbamide, $(NH_2)_2CO)$ is an end product (n of protein degradation in mammals.	( <i>pharm</i> .) netabolite)

metallic	metallisch Metallic bonding is based on delocalized electrons.	(chem.)
metallic compound	Legierung, die Steel is a metallic compound that contains between 0.02% and 1.7% ( carbon.	( <i>chem</i> .) by mass)
metalloid	Metalloid, das; metallartig; Halbmetall, das Metalloids (B, Si, Ge, As, Sb, Te, Po) often behave as semiconductors (I or semimetals (Sb). Also, they tend to form amphoteric oxides (these as either acid or base).	
meter, to	dosieren The active ingredient was metered with an accurate instrument.	(pharm.)
methane	Methan, das Acronym (engl.): $CH_4$ Acronym (dt.): $CH_4$ The bond angles in methane are 109.5 degrees.	(chem.)
metrology	Messtechnik, die; Messkunde, die The market for industrial metrology in Asia is expanding heavily.	(eng.)
mica	Glimmer, der Mica is a sheet silicate (phyllosilicate) mineral.	(chem.)
microbial count	Keimzahl, die The airborne microbial count in the cleanroom was determined twice	( <i>pharm</i> .) e per day.
microbiological strain	Bakterienstamm, der; Stammlösung, die The researcher isolated a new microbiological strain.	(pharm.)
microprobe	Mikrosonde, die The team has developed a microprobe for the speciation of Fe with resolution of only 2 $\mu$ m.	( <i>chem</i> .) a lateral
mildew	Mehltau, der Mildew refers to certain kinds of mold or fungus.	(pharm.)

#### **Chemical Engineering Vocabulary**

mildewed	von Mehltau befallen	(pharm.)
	The mildewed roses had to be discarded.	
mileage, milage	Kilometerstand, der; Laufleistung, die	(eng.)
	The mileage of the car was estimated at $>$ 500,000 km.	
miles per gallon (AE)	Meilen pro Gallone, die	(eng.)
	Acronym (engl.): mpg	
	A fuel consumption of 7.83 l/100 km corresponds to 30 mpg.	
miner	Bergmann, der	(eng.)
	Several hundred miners lost their jobs.	
mineral coal	Steinkohle, die	(eng.)
	Mineral coal accounts for approx. 10% of the primary energy pro-	duction in
	Brazil.	
mineral wool	Steinwolle, die	(eng.)
	Mineral wool, which is produced from molten rock, can be used for	or thermal
	insulation and filtration purposes.	

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182

minor constituent	Nebenbestandteil, der (chem.) Depending on regulations, minor constituents need not be mentioned on the packaging.
minute of arc	Bogenminute, die(eng.)1 minute of arc (MOA), which is 1/60 of 1 degree, corresponds to 2.91 cm in adistance of 100 m.
minutes (of meeting)	Besprechungsnotiz, die; Besprechungsprotokoll, das(eng.)Acronym (eng.) MoMThe minutes were distributed one week after the meeting.
miscellaneous	Verschiedenes, das(general)At the end of the meeting, miscellaneous items were discussed.
miscibility	Mischbarkeit, die (chem.) Octanol $(C_8H_{18})$ shows no miscibility with water. It is commonly used as a standard for partition equilibria.
miscible	mischbar (chem.) Water and ethanol are fully miscible, whereas copper and cobalt are not miscible.
misfire	Fehlzündung, die(eng.)Misfire leads to emissions of unburnt hydrocarbons.
misidentification	Verwechslung, die(pharm.)A misidentification of the samples led to a wrong treatment.
mist	Nebel, der (flüssig in gas)(chem.)The mist disappeared in the afternoon.
mixed fraction	gemischter Bruch, der (sci.) 3 ¹ / ₃ is a mixed fraction.
mixer	Mischer, der(chem. eng.)A plow mixer is more complicated to clean than a container mixer because the mixing tool cannot be removed.

mixture	Gemenge, das (cher A mixture of salt and iron particles can be separated easily.	<i>m</i> .)
MMBTU, mmBTU	1 Million BTU (er For natural gas, 1 mmBTU is defined as ~ 1.05 GJ (28.26m ³ of natural gas the defined temperature and pressure).	ıg.) s at
moisten, to	befeuchten (cher She moistened her finger before turning over the book page.	m.)
moisture	Feuchtigkeit, die(cherThe customer filed a complaint because of moisture in the product.	m.)
molar mass	molare Masse, die (cher The molar mass of NaCl is 58.443 g/mol. 1 mol is 6.02214×10 ²³ entities of given substance (Avogadro's number).	,
mole	Mol, das; Maulwurf, der (cher The mole (symbol: mol) is the SI base unit for the amount of substance. 1 m is the amount of substance which contains as many elementary entities as th are atoms in 0.012 kilogram of carbon 12, the most abundant of the two stat isotopes of the element carbon, accounting for 98.89% of carbon. Avogad constant in SI units is $6.022 \times 10^{23}$ mol ⁻¹ .	ole ere ble
monitor, to	überwachen (phart The study was closely monitored.	<i>m</i> .)
monocrystal	Einkristall, der (cher Wafers are produced from silicon monocrystals.	m.)
monograph	Monographie, die; Monografie, die; wissenschaftliche Einzeldarstellung, die (s She wrote a monograph about combustion diagnostics.	ci.)
monovalent	einwertig (cher Cl ⁻ is a monovalent ion.	<i>m</i> .)

mordant	Beize, die Mordants are used for dyeing fabrics. They include several salts of a chromium, copper, iron and tin.	( <i>chem</i> .) luminium,
mortar	Mörtel, der The bricklayer ran out of mortar.	(eng.)
mortar	Mörser, der Mortars and pestles were traditionally used in pharmacies to crus ingredients prior to preparing an extemporaneous prescription.	( <i>pharm</i> .) sh various
mother liquor	Mutterlauge, die The crystal was taken out of the mother liquor.	(chem.)
mother lye	Mutterlauge, die The mother lye was discarded.	(chem.)
motor control cabinet	Acronym (engl.): MCC	(eng.)

Acronym/Abbrevation referral: see motor control room

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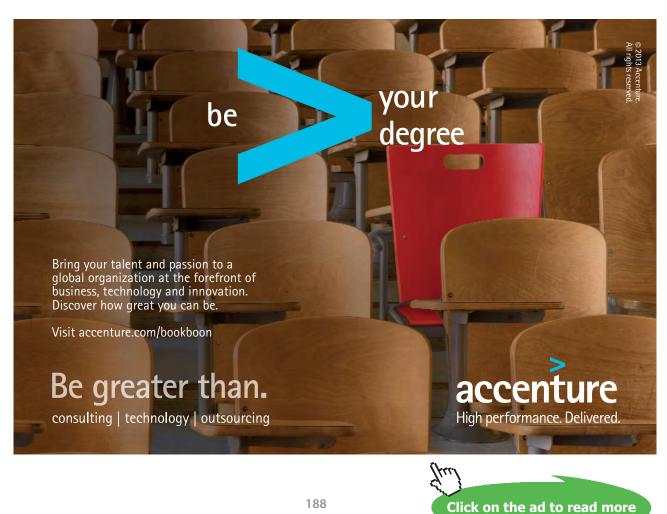
motor control room	Raum für Motorsteuerung, der <i>Acronym (engl.): MC room</i> The MC room was placed next to the transformer room.	(eng.)
mottled	gesprenkelt (pk The pill is mottled.	harm.)
MoU, MOU	( Acronym/Abbreviation referral: see memorandum of understanding	(econ.)
mould	Schimmel, der (a mold (AE)	chem.)
	In contrast to yeast, which has single fungi cells, moulds are fungi that gr multicellular filaments (hyphae).	row in
mould	Formkörper, der; Gießform, die <i>mold (AE</i> )	(eng.)
	The mould was designed for a lifetime of 2 years or 1,000,000 injection- mo parts.	oulded
moulded	geformt, gepresst Injection moulded parts can be mass manufactured.	(eng.)
mouldy	schimmelig (pk moldy (AE) Mouldy buildings pose a serious health risk.	harm.)
mount, to	montieren Mounting of the building took 2 weeks.	(eng.)
mouthwash	Mundwasser, das ( <i>pk</i> Active ingredients in mouthwash can include thymol, menthol, methylpa hydrogen peroxide and fluoride.	<i>narm</i> .) raben,
mpg (AE)	Acronym/Abbreviation referral: see miles per gallon	(eng.)
MSDS	(a Acronym/Abbreviation referral: see material safety data sheet	chem.)

### Chemical Engineering Vocabulary

mucilage	Schleimstoff, der; Schleim, der(chem.)Some carnivorous plants use mucilage to catch insects.	)
mucous	schleimig(pharm.)The precipitated substance had a muscous appearance.	)
mucous membrane	Schleimhaut, die(pharm.)HCl can cause severe irritations to the mucous membranes.	)
mucus	Schleim, der(pharm.)Mucus is a slippery secretion produced by and covering mucous membranes in vertebrates. Also some invertebrates like snails produce it.	
mud guard	Kotflügel, der(eng.)Mud guards increase air resistance and fuel consumption of a car.	)
multi stage	mehrstufig (chem. eng. Multi stage combustion can reduce pollutant emission.	)
n/a	(general) Acronym/Abbreviation referral: see not applicable	)
nail	Nagel, der(eng.)Joiners are skilled at using nails.	)
name plate	Typenschild, das(chem.eng.)The name plate capacity of the pump was 3,500 l/h.	)
naphtha	Rohbenzin, das; Naphtha, das (chem. eng. In a refinery, oil and gas are separated into different products (fractions) by distillation. Naphtha is the light fraction from oil. It can be further processed in a cracker.	у
narcotic drug	Rauschgift, das (pharm.) Effects of narcotic drugs, apart from addiction, include sleeplessness, inability to concentrate, apathy and vomiting.	

narcotic substance,	Betäubungsmittel, das	(pharm.)	
narcotic, anaesthetic			
	anesthetic (AE)		
	Anaesthetic agents in widespread current use are isoflur	ane (C ₃ H ₂ ClF ₅ O, a	
	halogenated ether), desflurane (C3H2F6O, a highly fluorin	nalogenated ether), desflurane ( $C_3H_2F_6O_3$ , a highly fluorinated methyl ethyl	
	ether) and sevoflurane ( $C_4H_3F_7O$ , a highly fluorinated methyl isopropyl ether).		
National Fire			
Protection	NFPA, US- Institution zum Feuerschutz, die	(eng.)	
Association			
	Acronym (engl.): NFPA		
	There are over 300 NFPA codes and standards.		
National Institute for	NIOSH	(chem. eng.)	
Occupational Safety		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	
and Health			
	Acronym (engl.): NIOSH		

Acronym (engl.): NIOSH NIOSH is an institution in the US.



native	gediegen (a Metals from the gold group and the platinum group can be found nat nature. The gold group is made up of gold, copper, lead, mercury, and silve platinum group is made up of platinum, iridium, osmium, palladium, rho and ruthenium.	er. The
natural gas	Erdgas, das (a Methane is the main constituent of natural gas.	chem.)
natural rubber	Kautschuk, der (a Natural rubber is produced from the sap of the rubber tree. It is a milky co suspension (latex) of natural, elastic polymers.	chem.) lloidal
nausea	Brechreiz, der; Übelkeit, die (p) Food poisoning can lead to nausea.	harm.)
nebulise, to	vernebeln ( <i>pl</i> <i>nebulize, to</i> ( <i>AE</i> ) The peroxide was nebulized by a nozzle with an orifice of 0.2 mm diamo	harm.) eter.
nebuliser	Zerstäuber, der ( <i>a</i> <i>nebulizer</i> ( <i>AE</i> ) Piezoelectric nebulizers are used in electronic cigarettes.	chem.)
necking	Einschnürung, die; Einschnüren, das Necking is a localised reduction in cross-section that can occur in a m under tensile stress as the start of failure.	( <i>eng</i> .) aterial
needle valve	Nadelventil, das; Kegelventil, das ( <i>chem</i> A needle valve is a type of valve with a small orifice and a threaded, needle plunger. It allows precise regulation of flow. It is only used for small flow	
negotiate, to	verhandeln ( In business, you do not get what you deserve, but rather what you negot	( <i>econ</i> .) tiate.
net	netto ( Her net income has increased by 7% over the last three years.	(econ.)

net present value	Barwert, der	(econ.)
	Acronym (engl.): NPV	
	The NPV is the economic value of a project calculated by sur	nming up its costs
	and revenues over its full life. Future costs and revenues need	d to be discounted
	by the relevant interest rate (e.g. the cost of capital).	
neutral conductor	Nullleiter, der	(eng.)
	The neutral conductor has the color green/yellow.	
	0 7	
NFPA		(eng.)
	Acronym/Abbreviation referral: see National Fire Protection A	-
niche	Nische, die	(pharm.)
	The company is specialized on the synthesis of nice chemica	-
NIOSH		(chem. eng.)
	Acronym/Abbreviation referral: National Institute for Occup	U U
	Health	allonial Sujery and
	11044474	
nitric acid	Salpetersäure, die	(chem.)
	White fuming nitric acid, also called 100% nitric acid, and	
	acid, which contains substantial quantities of dissolved	e
	$(NO_2)$ are strong acids.	introgen dioxide
	$(100_2)$ are strong actus.	
nitrile rubber	Nitrilkautschuk, der; Acrylkautschuk, der	(chem.)
	Nitrile rubber is a copolymer of acrylonitrile (CH ₂ CHCN) and	
	Nitrile rubber has considerable resistance to oils and abrasic	
	Traine rubber has considerable resistance to ons and abrasic	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
nitrogen	Stickstoff, der	(chem.)
0	Acronym (engl.): N,	
	Acronym (dt.): $N_2$	
	The triple bond in $N_2$ is extremely strong. Therfore, $NO_x$ from	N and O is only
	formed at elevated temperatures (thermal $NO_x$ ).	
	is included to the perturbed (the initial $100_x$ ).	
nitrogen blanketing,	Beschleiern mit Stickstoff, das; Spülen mit Stickstoff, das	(chem. eng.)
nitrogen flushing	2 control interestori, aus, option interestori, aus	(chent, eng.)
introgen nuoning	Nitrogen blanketing of the silo was used to prevent the format	ion of an evplosive
		ion of an explosive
	atmosphere.	

No Observed Adverse Effect Level	NOAEL	(chem.)
	<i>Acronym (engl.): NOAEL</i> NOAEL is the highest dose known to show no adverse effects.	
No Observed Effect Level	NOEL	(chem.)
	<i>Acronym (engl.): NOEL</i> NOEL is the highest dose known to show no effect.	
NOAEL	Acronym/Abbreviation referral: see No Observed Adverse Effect Level	(chem.)
noble gas	Edelgas, das $XeF_4$ was one of the first discovered noble gas compounds.	(chem.)
noble metal	Edelmetall, das Because of their resistance to corrosion and oxidation, copper and s counted to the group of noble metals.	( <i>chem</i> .) silver are



191



NOEL	(chem	.)
	Acronym/Abbreviation referral: see No Observed Effect Level	
noise	Lärm, der; Rauschen, das ( <i>eng</i> The signal-to-noise ratio (SNR or S/N) in the spectrum was not good enoug	
	to determine the concentration.	,11
non abrasive	abriebfest (eng	
	When processing glas fibres, non abrasive materials have to be used for a machine parts that are in contact with the product.	.11
non return valve, check valve	Rückschlagventil, das (chem. eng	ŗ.)
	A check valve only permits fluid flow in one direction.	
non-disclosure agreement	Geheimhaltungsvereinbarung, die (econ	.)
	When entering a cooperation with another company, it is wise to sign a nor disclosure agreement upfront.	1-
nonflammable	unbrennbar ( <i>chem</i> Water and carbon tetrachloride are nonflammable liquids.	.)
non-intrusive	berührungslos (chem. eng Laser spectroscopy works non-intrusively. Therefore, the probed system is hard influenced.	
non-positive, force-fit, friction-locked	kraftschlüssig (eng	<u>(</u> .)
	The metal piece was friction-locked.	
non-steroidal anti-inflammatory drug	Nicht-steroidaler Entzündungshemmer, der;(pharmNicht-steroidales Antirheumatikum, dasAcronym (engl.): NSAIDAcronym (dt.): NSAP	.)
	Acronym (dt.): NSAR Acetylsalicylic acid ( $C_9H_8O_4$ , Aspirin) belongs to the class of NSAIDs.	

nonvoven fabric	Vlies, das(eng.)In a nonwoven fabric, the single fibres have no defined order and are not connected through weaving, but by local attachment.
nootropics	Nootropika, die; Antidementiva, die(pharm.)Ginko is a herbal, nootropic substance.
noria	Wasserhebewerk, das; Paternosterwerk, das ( <i>eng.</i> ) One of the largest norias in the world, which has a diameter of 20 m, is located in Hama in Syria.
not applicable	keine Angabe, entfällt, nicht anwendbar (general) Acronym (engl.): n/a Vapour pressure of NaCl: n/a
notch	Kerbe, die(eng.)The worker made a notch in the wood using an axe.
notch, to	einkerben ( <i>eng.</i> ) The Charpy test uses a notched specimen in order to improve the reproducability of the results.
notification	In-Kenntnis -Setzen, das; Meldung, die;(general)Mitteilung, die; Benachrichtigung, dieA notification about potential delays in the project was not issued to the steeringcommittee in time.
novation	Forderungsübertragung, die; Novation, die; Schuldumwandlung, die ( <i>econ</i> .) The novation agreement was exercised.
noxious	giftig, schädlich ( <i>chem</i> .) Phosphine is a noxious gas.
nozzle	Düse, die(chem. eng.)It is recommended to use a filter upstream of the nozzle to prevent clogging.
nozzle head	Sprühkopf, der(chem.eng.)The spray from the nozzle head did not reach all corners of the vessel.

NPV		(econ.)
	Acronym/Abbreviation referral: see net present value	
NSAIDs, NAIDs	Acronym/Abbreviation referral: see non-steroidal anti-inflammatory di	(pharm.) rug
nuisance particles	Immisionsstaub, der (cl	hem.eng.)
	Nuisance particles are dusts that do not produce significant toxic effe	ects.
nuisance particulates	(ch Acronym/Abbreviation referral: see nuisance particles	nem. eng.)
nut	Gegenmutter, die; Schraubenmutter, die; Mutter, die	(eng.)
	A nut is a fastener with internal screw thread. Nuts can be left-thr right-threaded.	readed or
nutraceutical water	Funktionswasser, das	(pharm.)
	Nutraceutical water is a new lifestyle product.	



nutrient	Nährstoff, der Organic nutrients include carbohydrates, fats, proteins (or their bu amino acids), and vitamins.	( <i>chem</i> .) 1ilding blocks,
nuts and bolts	A und O, das; praxisbezogen The book claims to present the nuts and bolts of engineering.	(general)
oak	Eiche, die Oak wood, which has a density of about 750 kg/m³, shows good insects and fungi due to its high concent in tannins. Tannins are	
oar	Ruder, das The oar created an eddy in the water.	(eng.)
obtuse angle	stumpfer Winkel, der Angles between 90° and 180° are called obtuse angles. Angles of 1 straight angles.	( <i>eng</i> .) 180° are called
occlusion	Einschluss, der Natural occlusions are responsible for the pattern in marble.	( <i>eng</i> .)
occultation	Bedeckung, die; Verfinsterung, die; Verdeckung, die The smoke resulted in an occultation of the sunlight.	(general)
occupational exposure limit	e Acronym (engl.): OEL	(chem.)
	Acronym/Abbreviation referral: see Permissible Exposure Limit	
Occupational Health and Safety Assessmen Systems	gesundheitlicher und technischer Arbeitsschutz, der t	(chem. eng.)
	<i>Acronym (engl.): OHSAS</i> The company is certified according to OHSAS 18001.	
Occupational Health, Safety and Environme	nt Acronym/Abbreviation referral: see HSE	(general)

Occupational Safety and Health	OSHA (Arbeitsschutzorganisation in den USA, die) (ch	hem. eng.)
Administration (AE)	Acronym (engl.): OSHA OSHA is a branch of the Department of Labor (DOL). It regulates personal protective equipment in the workplace. Since the creation in 1971 with a mission to prevent work-related injuries, illnesses ar occupational deaths have been cut by 62% and injuries have decline in the US.	of OSHA nd deaths,
odd	ungerade 1, 3 and 5 are odd numbers.	(eng.)
odour	Geruch, der <i>odor</i> ( <i>AE</i> ) The foul odor of rotten eggs stems from $H_2S$ .	(chem.)
OEL	Acronym/Abbreviation referral: see occupational exposure limit	(chem.)
offensive smell	schlechter Geruch, der; Gestank, der H ₂ S is characterized by an offensive smell.	(chem.)
offer	Angebot, das The offer was sold out quickly.	(econ.)
OHSE	Acronym/Abbreviation referral: see Occupational Health, Safety and En	(general) vironment
oil	Öl, das Oil is not miscible with water.	(chem.)
ointment	Salbe, die; Heilsalbe, die; Wundsalbe, die The nurse put an ointment onto the wound.	(pharm.)
ointment base	Salbengrundlage, die Petrolatum (which can be hardened with wax) is the most widely us ointment base.	( <i>pharm</i> .) sed greasy

oleaginous	ölig, ölhaltig	(chem.)
	Petrolatum is suitable for the incorporation of oleaginous materials	S.
olefin	Olefin, das	(chem.)
	Olefins are mono-unsaturated hydrocarbons like ethylene and propy	
	are monomers for polyolefins.	
oleochemicals	oleochemische Produkte, die (	chem. eng.)
	Oleochemicals are chemicals derived from biological oils or fats	s. They are
	analogous to petrochemicals which are chemicals derived from	petroleum.
	Hydrolysis and alcoholysis of oils or fats form the basis of the ol-	eochemical
	industry.	
olfactory	den Geruch betreffend, Geruchs –	(chem.)
	Some vertrebrates have a well developed olfactory sense.	
ОР		(econ.)
	Acronym/Abbreviation referral: see operating profit	

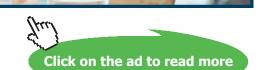
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197

operating pressure	Betriebsdruck, der The operating pressure of the pump was 2.5 barg.	(eng.)
operating profit	Betriebsergebnis, das; Gewinn, der <i>Acronym (engl.)</i> : <i>OP</i> The operating profit of the energy-intense products was	( <i>econ</i> .) adjusted by the
	controller.	
operating temperature	e Betriebstemperatur, die The lifetime of electronic components is often inversely prop operating temperature.	( <i>eng</i> .) ortional to their
operations	Betrieb, der; operatives Geschäft, das He enjoyed working in operations.	(chem. eng.)
operations research	Unternehmensforschung, die The student acquainted himself with operations research.	(econ.)
operator	Anlagenfahrer, der The operator had 10 years of experience in the process indust	(chem. eng.) ry.
opportunity	Möglichkeit, die Multinational corporations offer plenty of opportunities for g	(general) raduates.
optical rotation, optical activity	optische Rotation, die; optische Aktivität, die	(chem.)
	Optical rotation or optical activity is the rotation of linearly p it travels through certain materials. It occurs in solutions of such as sucrose (sugar), in solids such as quartz, and in gases of atoms or molecules.	chiral molecules
ore	Erz, das He is in the ore trading business.	(chem.)
orifice	Blende, die; Öffnung, die Lasers can be used to produce an orifice < 1 μm.	(eng.)
OSBL	Acronym/Abbreviation referral: see outside battery limits	(chem. eng.)

OSHA		(eng.)
	Acronym/Abbreviation referral: see Occupational Safety and Health A	-
osmosis	Osmose, die	(chem.)
	Reverse osmosis is a process to produce freshwater in dry areas.	
отс		(pharm.)
	Acronym/Abbreviation referral: see over the counter	-
ounce	Unze, die	(general)
	Acronym (engl.): oz	
	1 ounce (oz) is 1/16 of 1 pound (lb) or ~28.35 g	
outflow	Ausfluss, der	(chem. eng.)
	The outflow from the reactor has a temperature of 80°C.	
outlier	Ausreißer, der	(sci.)
	The outliner was detected using the student t test.	
outpatient,	ambulant	
out-patient	The nurse provided outpatient care.	(pharm.)
outside battery limits	OSBL, Bereich Peripherie der Anlage, der	(chem. eng.)
	Acronym (engl.): OSBL	
	As OSBL often does not get the same attention as ISBL, there potential for cost savings.	can be a big
over the counter	im Freihandel erhältlich, nicht rezeptpflichtig Acronym (engl.): OTC	(pharm.)
	Medications can be grouped into the following categories: ove	er-the-counter
	(OTC) medications, which are available in pharmacies and	
	without special restrictions, behind-the-counter (BTC), which	-
	by a pharmacist without needing a doctor's prescription, and pres medicines (POM).	scription only
<b>1</b> 1		<i>/</i>
overall	Gesamt- The overall project costs are often underestimated.	(eng.)
	the overall project costs are often underestimated.	

overexposure	übermäßige Belastung, die; Überbelichtung, die; übermäßige Exposition, die After overexposure, the MSDS recommends prompt medical atte	(chem.) ntion.
overhaul	Überholung, die Machines need to be overhauled regularly to ensure uninterrupte	( <i>eng</i> .) ed operation.
overpressure	Überdruck, der The safety valve opens at an overpressure of 2.5 bar.	(chem.eng.)
over-the-counter drug	rezeptfreies Medikament, das Acronym (engl.): OTC OTC drugs are generally used to treat conditions not necessar care from a health care professional. They are less prone for err medication by patients and often have a low strength.	, , ,
overvoltage	Überspannung, die The overvoltage damaged his PC.	(eng.)



200

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oxidizing agent	Oxidationsmittel, das	(chem.)
	Hydrogen peroxide is a powerful oxidizing agent.	
oxygen	Sauerstoff, der Acronym (engl.): O ₂	(chem.)
	Acronym (engl.): $O_2$ Acronym (dt.): $O_2$	
	Oxygen is a paramagnetic molecule.	
oxygenate, to	mit Sauerstoff versetzen	(chem.)
	The liquid turned turbid upon oxygenation.	
oxyhydrogen gas	Knallgas, das	(chem.)
	A mixture of methane and oxygen shows a similar behaviour as oxyl gas.	hydrogen
oz		(eng.)
	Acronym/Abbreviation referral: see ounce	
oz (tr)		(general)
	Acronym/Abbreviation referral: see troy ounce	
ozone	Ozon, das	(chem.)
	Acronym (engl.): O ₃	
	Acronym (dt.): O ₃	
	Ozone turns cyanides to the significantly less toxic cyanates accordin $CN^- + O_3 \longrightarrow CNO^- + O_2$ .	g to
ozone layer	Ozonschicht, die	(chem.)
	The ozone layer absorbs highly energetic UV light.	
ozt		(eng.)
024	Acronym/Abbreviation referral: see troy ounce	(013.)
P&ID	(ch	em. eng.)
-	Acronym/Abbreviation referral: see piping and instrumentation diagram	e
P&L		(econ.)
	Acronym/Abbreviation referral: see profit and loss statement	()

p. a.	Acronym/Abbreviation referral: see pro analysi	(chem.)
package	Packung, die The package contains 50 tablets.	(pharm.)
package insert, prescribing information, patient	Beipackzettel, der	(pharm.)
information leaflet	Acronym (engl.): PIL The section about contraindications on package inserts should be detail to learn about situations in which the medication should not be instance in patients with special medical conditions such as kidney or allergies.	e used, for
package, to	verpacken Medication should always be packaged in a child-proof way.	(pharm.)
packaging	Verpackung, die The packaging was damaged during transportation.	(pharm.)
pad	Tupfer, der Cotton pads are used for medical and cosmetic purposes.	(pharm.)
padlock	Vorhängeschloss, das For maintenance work, the machine was secured by a padlock.	(general)
РАН	Acronym/Abbreviation referral: see polycyclic aromatic hydrocarbons	(chem.)
pain killer, painkiller	Schmerzmittel, das Aspirin (acetylsalicylic acid, 2-acetyloxybenzoic acid, $C_9H_8O_4$ ) is ofte a painkiller (analgesic), as an antipyretic and as anti-inflammatory m	
pallet	Palette, die Pallets made from 25 kg bags are wrapped to be stable enough for trans	( <i>eng</i> .) portation.
palletize, to	palettieren Manual palletizing demands a lot of labour and is limited to low thr	( <i>eng</i> .) oughput.

palpitation	Herzklopfen, das; heftiges Schlagen, das; unregelmäßiger Herzschlag, der Caffeine $C_8H_{10}N_4O_2$ ) intake can trigger heart palpitations ( heartbeat).	(med.) irregular, rapid
panacea	Wundermittel, das The company was hoping to develop a panacea against cancer.	(pharm.)
panel	Bedienpult, das The panel was only labelled in English.	(chem. eng.)
panel operator	Messwartenfahrer, der The panel operator immediately called the fire bridage.	(chem. eng.)
partial pressure	Partialdruck, der According to Dalton's law (= Dalton's law of partial pressu pressure of a gaseous mixture is equal to the sum of the pa of each individual component in a gas mixture.	



particle	Teilchen, das(chem.)Nanoparticles have unique properties, but their health effects have not yet beenfully studied.
partition coefficient	Verteilungskoeffizient, der; Nernstscher Verteilungskoeefizient, der ( <i>chem</i> .) The partition coefficient is a ratio of the concentrations of a neutral compound between two solutions. In case of ionizable solutes, the pH of the aqueous phase is adjusted to transform the compound into its non-ionized state.
partner, shareholder, associate	Gesellschafter, der(econ.)The 3 partners decided to venture into oil trading.
pastille	Pastille, die (pharm.) A pastille is a medical pill. Originally, it was a pill made from compressed herbs, which was burnt to release its medicinal properties.
РАТ	(chem. eng.) Acronym/Abbreviation referral: see process analytical technology
patent infringement	Patentverletzung, die(econ.)Deliberate patent infringements are often difficult to prove.
patentable	patentfähig (econ.) Information that was already disclosed, e.g. in a scientific publication, is no longer patentable.
pathogen, infectious agent, germ	Erreger, der; Keim, der (pharm.)
	By water treatment, the threat from pathogens (pathogenic bacteria and viruses) can be reduced.
patient information leaflet	Beipackzettel, der (pharm.)
	<i>Acronym (engl.): PIL</i> A prescription drug usually contains a PIL.
РС	(chem.) Acronym/Abbreviation referral: see polycarbonate

РСВ	Acronym/Abbreviation referral: see polychlorinated biphenyl(s)	(chem.)
PEG	Acronym/Abbreviation referral: see polyethylene glycol	(chem.)
PEL	Acronym/Abbreviation referral: see permissible exposure limit	(chem.)
pelletize, to	granulieren Underwater pelletizing is a common process for thermoplastics.	(chem. eng)
pellets	Granulat, das Pellets of a product can be handled easily.	(chem. eng.)
pending	anhängig, bevorstehend, schwebend The pending lawsuit was a key topic at the shareholders' meeting.	(jur.)
peptide	Peptid, das Peptides are short polymers of α-amino acids.	(chem.)
perceive, to	wahrnehmen The color change could hardly be perceived.	(general)
percolating filter	Sickerkörper, der; Tropfkörper, der Perkolationsfilter, der The percolating filter was made from activated carbon.	(chem. eng.)
pe rester	Perester, der Peresters have the general structure RC(O)OOR.	(chem.)
perforated	gelocht Stamps are perforated.	(eng.)
performance	Leistung, die; Leistungsfähigkeit, die The performance of a team is dependent on the qualities of the le	( <i>general</i> ) ader.

periodic table of elements	Periodensystem, das; Periodensystem der Elemente, das	(chem.)
	Acronym (engl.): PTE Acronym (dt.): PSE The PTE finishes with element 111, Rg (roentgenium).	
peristaltic pump	Schlauchpumpe, die, Quetschpumpe, die Peristaltic pumps can be used to handle clean or aggressive fluids risk of contamination.	(chem. eng.) without the
Permissible Exposure Limit	PEL, Höchstbelastungsgrenze, die; maximale Arbeitsplatzkonzentration, die PEL is the highest concentration permitted under US OSHA regula	( <i>chem</i> .) ations.
Domonal Evnoques Lin		(channa)

#### Personal Exposure Limit

(chem.)

Acronym (engl.): PEL Acronym/Abbreviation referral: see Permissible Exposure Limit PEL is the highest concentration permitted under US OSHA regulations.



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personal protective equipment	Persönliche Schutzausrüstung, die	(general)
	Acronym (engl.): PPE	
	Acronym (dt.): PSA	
	Flame-resistant PPE is often made from aramid fibres, which are a substitute. The name is short for "aromatic polyamide".	n asbestos
Perturbation	Störung, die	(general)
	After the perturbation, the pendulum returned to its initial condition	n.
petrochemicals	Petrochemikalien, die (d	hem. eng.)
	Ethylene, propylene, toluene, and benzene are four major petrochen	nicals.
petrolatum, petroleum jelly	Petrolatum, das; Vaseline, die	(chem.)
	Petrolatum is a semi-solid mixture of hydrocarbons (with carbor mainly higher than 25).	n numbers
petroleum	Acronym/Abbreviation referral: see crude oil	(chem.)
PFD	(c Acronym/Abbreviation referral: see process flow diagram	hem. eng.)
PFD	(c Acronym/Abbreviation referral: see probability of failure on demand	hem. eng.)
PFR	(c Acronym/Abbreviation referral: see plug flow reactor	hem. eng.)
pharmacist	Apotheker(in), der (die); Pharmazeut(in), der (die)	(pharm.)
	Pharmacists are sometimes referred to as dispensing chemists, which confusion with scientists in the field of chemistry (chemists).	may cause
pharmacopoeia	Arzneibuch, das The European Pharmacopoeia, in its 2005 edition, includes 1,800 mo These contain quality standards with which all medicines must guarantee a certain quality level for consumers.	0 1

pharmacy, chemist's shop	Apotheke, die; Drogerie, die	(pharm.)
	drugstore (AE)	
	In the US, several drugstores are open 24/7.	
PhD	Dr. (doctor of philosophy), der	(chem.)
	Acronym (dt.): Dr.	
	She obtained her PhD from the University of Toronto/Canada.	
phlegm	Schleim, der; Gleichgültigkeit, die	(pharm.)
	Phlegm is expelled by coughing.	
phosphor	Leuchtstoff, der; phosphoreszierender Stoff, der	(chem.)
	Zinc sulfide (ZnS) with about 5 ppm of copper as activator is a	a common
	phosphor.	
phosphorus	Phosphor, der	(chem.)
	Acronym (engl.): P	
	Acronym (dt.): P	
	Phosphorus, a multivalent nonmetal of the nitrogen group, cannot b	be found as
	a free element in nature because of its high reactivity.	
physician, medical practitioner, medical doctor	Mediziner, der; Arzt, der	(pharm.)
	The physician worked in an interdisciplinary team with 2 chemists.	
РІ	(1	chem. eng.)
	Acronym/Abbreviation referral: see process intensification	0,
pickle, to	beizen, pökeln, abbeizen	(chem.)
	He did not like the taste of pickled meat.	
piecework	Akkordarbeit, die	(econ.)
	Piecework pay is the oldest form of performance pay.	
PIL		(pharm.)
	Acronym/Abbreviation referral: see Patient Information Leaflet	ч /

piling	Pfahltreiben, das; Stapeln, das; Pfählung, die	(eng.)
	For piling of the construction site, the contractor took 2 weeks.	
pillar	Pfeiler, der	(eng.)
	Pillars offer vertical support.	-
pilot plant	Technikumsanlage, die; Pilotanlage, die	(eng.)
	The pilot plant can produce samples of up to 200 kg.	C
pinch valve, squeeze	Quetschventil, das	(chem. eng.)
valve, squeezing valve		
	The pinch valve was damaged by abrasive material.	
pine	Kiefer, die	(general)
	The resin of pine trees, which are a significant source of softwood	, can be used
	to produce turpentine.	
pipe	Rohr, das	(chem. eng.)
	Plastics sewage pipes are designed for a lifetime exceeding 100 ye	ears.

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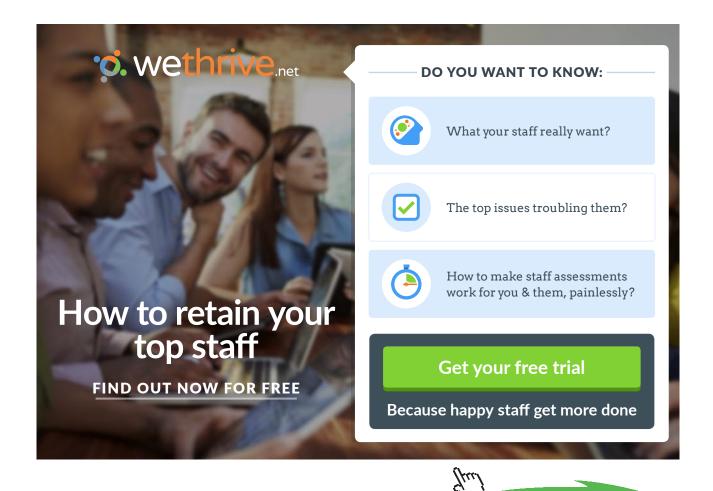
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209

pipe cap	Rohrkappe, die Pipe caps prevent contamination of pipes on a construction site.	(chem. eng.)
pipeline	Pipeline, die; Rohrleitung, die The Trans-Alaska Pipeline System (Alaska Pipeline) measures 48 in diameter and almost 800 miles (1,286 km) in length.	( <i>chem. eng.</i> ) inch (1.22 m)
piping and instrumentation diagram	Rohrleitungs – und Instrumentierungs-Schema, das	(chem. eng.)
	Acronym (engl.): P&ID, PID	
	Acronym (dt.): R&I, R&I Schema	
	A HAZOP study will be carried out as soon as updated P&IDs and	re available.
piston	Kolben, der	(eng.)
I	Pistons are used in reciprocating engines and some pumps.	(
pit	Grube, die	(eng.)
	Oil and water had accumulated in the pit.	
pitch	Neigungswinkel, der; Pech, das	(chem.)
piten	Petroleum -derived pitch is also called bitumen.	(chem.)
	renoleum denved pien is also caned brumen.	
pitting	Grübchenbildung, die	(chem.)
	Pitting is a special type of corrosion.	
• .		
pivot	Drehpunkt, der; Achse, die The technicer meinted to the nivet of the lover	(eng.)
	The technican pointed to the pivot of the lever.	
plaintiff	Kläger, der; Ankläger, der	(jur.)
	The plaintiff's damages may include compensatory and punit	ive damages.
	Punitive damages are only awarded in the event of wanton and recl	cless conduct.
•		
plant	Anlage, die; Pflanze, die	(chem. eng.)
	A modern pharmaceutical plant is highly automated.	

plant engineering and construction	Anlagenbau, der	(chem. eng.)
	Before becoming an independent consultant, he worked as pro a plant engineering and construction company.	ject manager in
plasma	Plasma, das Blood serum is blood plasma without clotting factors such as f	( <i>chem</i> .) ibrinogen.
plaster	Gips, der Plaster is a building material.	(chem.)
plastered wall	verputzte Wand, die The paint did not stick to the plastered wall.	(chem.)
plastics	Kunststoffe, die The worldwide plastics production has increased from 1.5 m 1950 to 245 million tonnes in 2006.	( <i>chem. eng</i> .) illion tonnes in
plate	Trennstufe, die The concept of theoretical plates (equilibrium stages, theoretic for the design of distillation processes.	( <i>chem. eng</i> .) al trays) is used
plate, blanking plate, isolating plate	Steckscheibe, die	(eng.)
	The isolating plate was not clearly visible from the ground.	
platinum	Platin, das Acronym (engl.): Pt Acronym (dt.): Pt	(chem.)
	The six platinum family metals (ruthenium, rhodium, palla iridium, platinum) show outstanding catalytic behaviour.	dium, osmium,
PLC	Acronym/Abbreviation referral: see programmable logic control(	(chem.) ler)
pliable	biegeweich, biegsam The shell was pliable.	(chem.)

pliers	Zange, die	(eng.)
	Pliers were probably first used to handle hot objects.	
plough	Pflug, der	(eng.)
	plow (AE)	
	Oxen were used to drag ploughs. (1 ox, 2 oxen).	
plug	Stöpsel, der	(chem.)
	She did not hear her cell phone because of the ear plugs.	
plug flow reactor, tubular reactor	Rohrreaktor, der; Strömungsrohr, das	(chem. eng.)
	Acronym (engl.): PFR	
	The model of a plug flow reactor (PFR) is used to describe chem	ical reactions
	in continuous, flowing systems under ideal situations.	
plug valve	Stopfenventil, das; Kegelhahn, der; Kegelventil, das	(chem. eng.)
	Plug valves are often used as shut-off valves in domestic natural gas lines.	

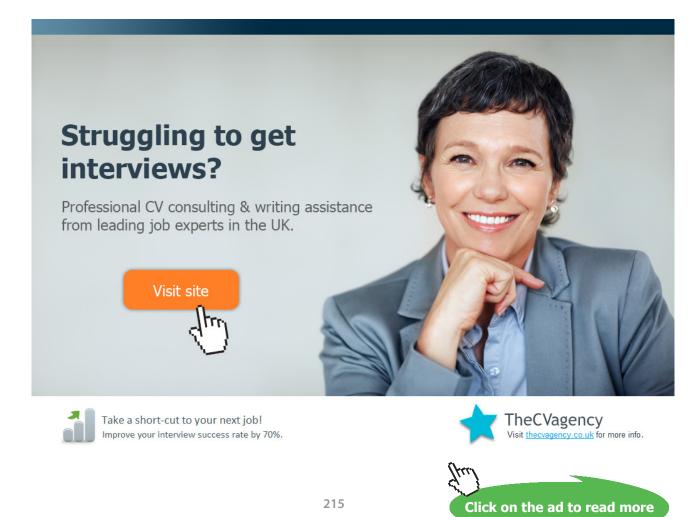


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plugged	verstopft	(eng.)
	When a pipeline is plugged, it needs to be brought back into opera as possible.	tion as fast
plumbing	Rohrleitungen, die; Klempnerarbeit, die; Armaturenfertigung, die The plumbing contractor did not meet the time schedule.	(eng.)
plywood	Schalungsplatte, die; Sperrholz, das	(eng.)
	The plies (layers) of plywood can be bonded together by phenol for resin. Therefore, plywood can be considered a composite material.	maldehyde
РМС	(	chem. eng.)
	Acronym/Abbreviation referral: see Project Management Consultancy	V
pneumatic conveying	pneumatische Förderung, die (	chem. eng.)
	Dense phase conveying (plug flow conveying) causes less product at dilute phase conveying.	trition than
РО		(econ.)
	Acronym/Abbreviation referral: see purchase order	
pollutant	Schadstoff, der	(chem.)
	PAH (polycyclic aromatic hydrocarbons) are combustion-derived p	ollutants.
polycarbonate	Polycarbonat, das; Polykarbonat, das	(chem.)
	Acronym (engl.): PC	
	Polycarbonates are thermoplastic polymers. They derive their n	name from
	carbonate groups (-O-(C=O)-O-) in the molecular backbone chain	
polychlorinated biphenyl(s)	Polychloriertes Biphenyl, das; polychlorierte Biphenyle, die	(chem.)
	Acronym (engl.): PCB	
	Acronym (dt.): PCB	
	PCBs $(C_{12}H_{10-x}Cl_x)$ were used as coolants and insulating fluids in tr and as additives in flexible PVC before their ban.	ansformers

polycyclic aromatic hydrocarbons	polyzyklische aromatische Kohlenwasserstoffe, die (chem.)
	Acronym (engl.): PAH
	Acronym (dt.): PAK
	Benzopyrene (Benzo[a]pyrene), $C_{20}H_{12}$ , is a five-ring polycyclic aromatic hydrocarbon that is mutagenic and highly carcinogenic. It acts as a procarcinogen, because the ultimate metabolite that causes cancer is benzo[a]pyrene diol epoxide, by interacting with the DNA.
polyethylene glycol	Polyethylenglykol, das (chem.)
	Acronym (engl.): PEG
	Acronym (dt.): PEG
	PEG (PEO, POE, HO-( $CH_2$ - $CH_2$ -O-) _n -H) is a polyether. It is the oligomer or
	polymer of ethylene oxide. Polyethylene glycol can be used to create very high
	osmotic pressures (>10 ⁶ Pa).
polyolefins	Polyolefine, die (Polyolefin, das) (chem.)
	Polyethylene and polypropylene are two ubiquitious polyolefins.
polyvalent	mehrwertig (chem.)
	Polyvalent atoms such as carbon are capable of forming more complex structures than monovalent ones.
POM (BE)	(pharm.)
	Acronym/Abbreviation referral: see prescription only medicine
poppet valve	Tellerventil, das (eng.)
	Poppet valves are generally very robust and resilient, so they are frequently used
	as industrial directional control valves.
port	Hafen, der (eng.)
	The goods could not leave the port because some documents were missing.
port, portside	backbord (general)
	Portside is the left side of a ship.
positioner	Stellungsregler, der; Stellgerät, das (eng.)
	Valve positioners are available as pneumatic, electro-pneumatic and digital
	models.

positive locking	formschlüssig, Formschluss, der The metal piece was installed with positive locking.	(eng.)
postgraduate	Aufbaustudiengangs – He earned a postgraduate degree in economics.	(sci.)
potable	trinkbar, genießbar The tap water was not potable.	(pharm.)
potable water	Trinkwasser, das 1.3 billion people do not have access to sufficient potable water.	(chem.)
potassium	Kalium, das <i>Acronym (engl.): K</i> <i>Acronym (dt.): K</i> Potassium ions are colorless in water.	(chem.)
pottery	Tonware, die Pottery is sensitive to shock.	(chem.)



poultice	Umschlagpaste, die; Kataplasma A poultice can be applied to inflamed parts of the body.	(pharm.)
pound	Pfund, das <i>Acronym (engl.): lb, lbm</i> 1 pound weighs approx. 0.45 kg.	(eng.)
pounds per square inc	c <b>h</b> Acronym/Abbreviation referral: see psi	(chem.)
pounds per square ind absolute	ch Acronym/Abbreviation referral: see psia	(chem. eng.)
pounds per square ind gauge	h Acronym/Abbreviation referral: see psig	(chem.)
pounds per square inch, Pfund pro Quadratzoll, das (lbf/in²)       (         pound-force per square       (         inch (lbf/in²)       (         Acronym (engl.): psi       (		(eng.)
	Acronym/Abbreviation referral: see psi 1 psi is approx. 0.069 bar or 6900 Pa. The atmospheric pressure (standard) is 14.7 psi.	at sea level
pounds-force per square inch absolute	Absolutdruck in Pfund pro Quadratzoll, der <i>Acronym (engl.): psia</i> <i>Acronym/Abbreviation referral: see psia</i> A 4.3 psia pressure suit was developed for astronauts in the Internat Station.	(eng.) tional Space
pounds-force per square inch gauge	Pfund pro Quadratzoll Überdruck, der Acronym (engl.): psig Acronym/Abbreviation referral: see psig The solenoid valve operates from vacuum to 3,000 psig.	(eng.)

pour point	Stockpunkt, der; Fließpunkt, der(chem.)The pour point is an important parameter for lubricants and other petroleum products.	
pour, to	gießen ( <i>eng.</i> ) The worker poured the mixture into the vessel.	)
powder	Puder, das; Pulver, das (chem.) The aerodynamic properties of powders can be used to transport them in industrial applications by pneumatic conveying. There are 2 regimes: dilute phase conveying and dense phase conveying. Hydraulic conveying (i.e. conveying with water instead of air) is another option.	1
power	Leistung, die (eng.) Power is measured in Watt (W).	)
power factor	Leistungsfaktor, der; Phasenwinkel, der (eng.) The power factor can be between 0 and 1. In a purely resistive AC circuit voltage and current waves are in phase. When reactive loads such as capacitors or inductors are present, energy storage in the loads results in a time difference between the current and voltage waves. The following memory hook helps to memorize the relations: "CIVIL" – in a Capacitor, I (current) leads Voltage. Voltage leads I (current) in an inductor L.	, 5 5 5
power plant	Kraftwerk, das(eng.)Power plants can be situated close to the feedstock or to the consumer.	)
PPE	(chem. eng.) Acronym/Abbreviation referral: see personal protective equipment	)
precious metal	Edelmetall, das ( <i>chem</i> .) The best-known precious metals are gold and silver.	)
precipitant	Fällungsmittel, das(chem.)Silver was reclaimed by precipitation of AgCl.	)
precipitation	Niederschlag, der; Fällung, die(chem.)The solution showed hardly any percipitation.	)

pre-clinical studies	vorklinische Studien, die Pre-clinical studies involve in vitro (test tube) and in vivo (animal) ex	( <i>med</i> .) periments.
precommissioning	Vorbereitungen zur Inbetriebnahme, die; Precommissioning, das (a In the construction of a (chemical) plant, precommissioning is t adjustment and verification that the entire installation is working ac the designed purpose so that the systems involved are brought to a s they are ready for commissioning. Precommissioning is a part of the M Completion activity.	he testing, cording to tage where
preliminary	vorläufig	(general)
premium	A preliminary report was issued 2 weeks after the incident. Prämie, die; Aufschlag, der; Zuschlag, der Fine chemicals of superior purity can be sold with a premium.	(econ.)
prescription	Verschreibung, die; Rezept, das He was given a prescription for sedative drugs.	(pharm.)



218

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prescription drug	Acronym/Abbreviation referral: see POM	(pharm.)
prescription drug, rx-only drug, legend drug, prescription only drug	rezeptpflichtiges Medikament, das	(pharm.)
	<i>Acronym/Abbreviation referral: see prescription only medicine</i> Vita generally no prescription drugs.	amins are
prescription only medicine	verschreibungspflichtiges Arzneimittel, das; rezeptpflichtiges Arzneimittel, das <i>Acronym/Abbreviation referral: see POM</i> Many antibiotics are POM.	(pharm.)
pressure	Druck, der The pressure in the combustion chamber can reach 142 bar.	(chem.)
pressure gauge	Druckmesser, der; Manometer, das The pressure gauge was destroyed by overstretching.	(eng.)
pressure regulator	Druckregler, der The pressure regulator was set at 2.3 bar.	(chem.)
pressure relief valve	Abblaseventil, das; Überdruckventil, das A pressure relief valve has to vent into an unconfined area.	(eng.)
pressure swing adsorption	Druckwechseladsorption, die (c.	hem. eng.)
	$\rm N_{_2}$ can be produced by fractionation of air, membrane separation o swing adsorption.	r pressure
prestressed concrete	Spannbeton, der With prestressed concrete, bridges with a longer span than feasible with reinforced concrete can be built.	( <i>eng</i> .) h ordinary
prestudy	Vorstudie, die (c. During the prestudy, it was discovered that the warehouse needs an e too.	<i>hem. eng</i> .) expansion,

prevailing	vorherrschend The prevailing opinion about waste incinceration is positive.	(general)
primary air	Primärluft, die The primary air preheater was designed for a maximum pressure	( <i>chem. eng.</i> ) of 2*10 ⁶ Pa.
primer	Grundieranstrich, der; Initialsprengstoff, der Azides are commonly used as primers.	(eng.)
pro analysi	in Analysenqualität <i>Acronym (engl.): p.a.</i> The company sells p.a. grade chemicals.	(chem.)
probability of failure on demand	Ausfallswahrscheinlichkeit bei Bedarf, die <i>Acronym (engl.): PFD</i> SIL 4 has a PFD better than 10 ⁻⁴ .	(chem. eng.)
probe	Sonde, die The sample was taken by a water-cooled probe.	(eng.)
procedure	Anweisung, die The operating procedure for the distillation column was updated ago.	(general) only 2 weeks
process	Verfahren, das The process has not yet been implemented in a large scale plant.	(chem. eng.)
process analytical technology (process analytical techniques)	Process Analytical Technology, Technologie zur (pharmazeut.) Prozessanalyse, die	(chem. eng.)
, <u>1</u> ,	Acronym (eng.): PAT Acronym (dt.): PAT Process Analytical Technology (PAT) has been defined by the Food and Drug Administration (FDA) as a concept to analyze pharmaceutical manufacturing processes through the measureme Process Parameters (CPP).	and control

process capability Prozessfähigkeit, die (chem. eng.) The process capability can be expressed by the  $c_{pk}$  (six sigma approach), which basically means that the standard deviation of a production process needs to be smaller than the product specifications. process chemistry, Verfahrenstechnik, die (chem. eng.) process engineering He holds a tenure in process chemistry. process development Verfahrensentwicklung, die (chem. eng.) During process development, one should also think about the energy consumption. process engineer Prozessingenieur (in), der (die); (chem. eng.) Verfahrenstechniker(in), der (die) The process engineer proposed to lower the temperature in the discharge zone. (chem. eng.) process flow diagram Fließbild, das Acronym (engl.): PFD A process flow diagram (PFD) is a diagram commonly used in chemical and process engineering to indicate the general flow of plant processes and equipment. The PFD displays the relationship between major equipment of a plant and does not show minor details such as piping details and designations (those can be seen on a P&ID). Another commonly-used term for a PFD is a flow sheet. process industry Prozessindustrie, die (chem. eng.) Chemicals, food and drinks and pharmaceuticals are produced by the process industry. process intensification Prozess-Intensivierung, die (chem. eng.) Acronym (engl.): PI Process intensification is an approach to build much smaller (i.e. intensified) chemical plants that are significantly cheaper and safer than existing ones. process measuring Mess-, Steuer- und Regeltechnik, die; MSR-Technik, die (chem. eng.) and control technology The process measuring and control technology department was reorganized.

process technology	Verfahrenstechnologie, die The process technology was covered by 3 patents.	(chem. eng.)
process water	Brauchwasser, das The process water was more corrosive than expected.	(chem. eng.)
process, to	verarbeiten The plants processes waste oil.	(chem.)
processing	Verarbeitung, die The processing of concrete is performed at throughputs of 50 t/h	( <i>chem. eng</i> .) and more.
procurement	Einkauf, der The procurement of local equipment is generally less costly than from offshore.	( <i>econ.</i> ) n to import it
prodrug	Pro-Pharmakon, das A prodrug is a pharmacological substance which is administered form. It is then metabolised in vivo into an active metabolite.	( <i>pharm</i> .) in an inactive



222

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produce	darstellen, herstellen The chemist produced H ₂ from water.	(chem.)
product	Produkt, das The new employee studied the product range of his company.	(chem. eng.)
production site	Produktionsstätte, die The company has production sites in three countries.	(chem. eng.)
profit	Gewinn, der The owners of a company are interested in its profit.	(econ.)
profit and loss statement, income statement	Gewinn- und Verlustrechung, die	(econ.)
	Acronym (engl.): P&L Acronym (dt.): GuV A profit and loss statement (P&L) or income statement indicates I ("top line") were transformed into net income ("bottom line") of a to see how much money was made in the period of interest, typ Thereby, the P&L differs from the balance sheet, which represents in time.	a corporation pically 1 year.
proforma invoice	Pro-forma -Rechnung, die A proforma invoice can be sent upfront to a buyer if not all detai It is often used for customs clearance purposes.	( <i>econ</i> .) ls are known.
profuse	übermäßig, reichlich Ingestion of large amounts of propylene glycol can result in rapid l profuse sweating.	( <i>general</i> ) heartbeat and
programmable logic control(ler)	PLC Steuerung, die; Speicher-Programmierbare Steuerung, die <i>Acronym (dt.): SPS</i> A programmable logic controller (PLC) is used for the automation processes.	(eng.) n of industrial

prohormone	Prohormon, das (pharm. Vitamin D is a group of fat -soluble prohormones, the two major forms of which are vitamin D2 (ergocalciferol) and vitamin D3 (cholecalciferol). Vitamin D3 is produced in skin exposed to sunlight.	n
Project Management Consultancy	Beratungsfirma für Projektmanagement, die; PMC-Firma, die(chem. eng.)Acronym (engl.): PMCAcronym (dt.): PMCThe PMC suggested to speed up the project.	)
propagation	Ausbreitung, die(general)The propagation of the flue was faster than expected.	)
propellant	Treibgas, das; Treibmittel, das (chem. A hypergolic propellant consists of fuel and oxidizer. It ignites spontaneously upon contact of the two media, e.g. hydrazine and nitrogen tetraoxide.	
properties	Eigenschaften, die(chem.)The professor wanted to know the properties of helium from the candidate.	)
proposed Internationa Nonproprietary Name	-	)
protective clothing	Schutzkleidung, die;Schutzanzug, der;Schutzbekleidung, die(chem.)A chemsuit (hazmat suit) is a special type of protective clothing.	)
protein	Eiweiß, das; Protein, das ( <i>chem.</i> ) Proteins are polypeptide molecules. The distinction is that peptides are shor and polypeptides/proteins are long. They are composed of amino acids.	
prussic acid	Blausäure, die(chem.)Prussic acid is a solution of hydrogen cyanide (HCN) in water. HCN reacts with ketones and aldehydes to give cy anohydrins.	

psi	Pfund pro Quadratzoll, das	(chem. eng.)
	Acronym/Abbreviation referral: see pounds per square inch	1 bar = 100,000 Pa =
	14.5 psi.	
psia	Pfund pro Quadratzoll absolut	(chem. eng.)
	Acronym/Abbreviation referral: see pounds-force per squar	e inch absolute
	Psia is the gauge pressure plus local atmospheric pressure	2.
psig	Pfund pro Quadratzoll (relativ, laut Manometer)	(chem. eng.)
	Acronym/Abbreviation referral: see pounds-force per squar	e inch gauge
	Psig is a unit of pressure relative to the surrounding atm	osphere. By contrast,
	psia measures the pressure relative to vacuum.	
pulley	Rolle, die; Flaschenzug, der	(eng.)
	A pulley is a grooved wheel that can accomodate a rope or	r cable. It can be used
	to change the direction of an applied force.	
pulp	Zellstoff, der	(chem.)
	Pulp is a fibrous material made from wood which can be	converted into paper.



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pump	Pumpe, die(chemThe impeller of the pump was destroyed by solids.	. eng.)
pump head	Pumpendruck, der The pump head was 3 bar.	(eng.)
punch	Prägestempel, der; Locheisen, das; Stanzer, der The punch was made from hardened metal.	(eng.)
punch list	Liste mit offenen Punkten, die(chemA punch list is a "to do" list which contains items of a project that rectification or completion before the entire work scope is completed.	0
pungent	beißend, scharf, stechend (a Glutaraldehyde (pentane- 1,5-dial, pentanedial, glutural, $C_5H_8O_2$ ) is a with a pungent odor. It is used to sterilize medical and dental equipment	
purchase order	Bestellung, die ( Acronym (engl.): PO A purchase order was issued.	econ.)
purchase, to	kaufen ( Raw materials can be purchased from one supplier in order to claim ve discount.	( <i>econ</i> .) olume
purge, to	spülen (a The reactor was purged with nitrogen.	chem.)
purification	Reinigung, die (a Reagents for delicate processes can be subjected to a purification st recrystallization, i.e. dissolution in a very pure solvent, crystallisation and a recovery.	
purportedly	angeblich, wie man sagt (ge Most medications are potent and safe after the expiration date. A rare exce is a case of renal damage purportedly caused by expired tetracycline.	eneral) eption

putrefaction	Fäulnis, die ( Putrefaction is the decomposition of animal proteins by putrefying bac usually yields amines such as putrescine $(NH_2(CH_2)_4NH_2 (1,4-diamine)$ butanediamine) and cadaverine $(NH_2(CH_2)_5NH_2, pentane-1,5-diamine)$	obutane,
pylon	Hochspannungsmast, der; Pylon, der A pylon has the shape of a truncated pyramid.	(eng.)
pyruvic acid	Brenztraubensäure, die Pyruvic acid (2-oxopropanoic acid, CH ₃ COCOOH) is the simplest alp acid. The carboxylate anion (-COO ⁻ ) of pyruvic acid is known as pyruvate plays an important role in biochemical processes.	
quantum well	Quantentopf, der; Potentialtopf, der Quantum wells, which can be produced in semiconductors, are used lasers.	( <i>phys</i> .) in some
quarry	Steinbruch, der Because of dust formation, quarries are situated in remote areas.	(eng.)
quarter-turn screw, flat leaf screw	Blattschraube, die The hose was connected to the tank by a flat leaf screw.	(eng.)
quartz	Quarz, der Quartz crystals exhibit the piezoelectric effect.	(chem.)
quaternary ammoniun compounds, quaterna ammonium salts, quaternary amines	n quaternäre Ammoniumverbindungen, die ry	(chem.)
	Acronym (engl.): quats Quats are positively charged ions of the structure NR ⁺ with R bein groups. Unlike the ammonium ion $NH_4^+$ , the primary, secondary, or ammonium cations, the quaternary ammonium cations are perm charged, independent of the pH of their solution.	tertiary
quats	Acronym/Abbreviation referral: see quaternary ammonium compouonds	(chem.)

quench, to	abschrecken, quenchen	(eng.)
	The radicals were quenched on the vessel wall.	
quenching	Löschen, das; Qenchen, das (4 Flame quenching on metal surfaces results in the formation of pollutant as CO and unburnt hydrocarbons.	<i>chem</i> .) ts such
quick lime	gebrannter Kalk, der(dAcronym (engl.): CaO(d.): CaOAcronym (dt.): CaO(d.): CaOCalcium oxide (CaO, burnt lime, quick lime) is obtained from the the decomposition of calcium carbonate (CaCO3, calcite) in a lime kiln above in a process called calcination or lime-burning.	
quicksilver, mercury	Quecksilber, das (A Acronym (engl.): Hg Acronym (dt.): Hg Quicksilver is a synonym for mercury (hydrargyrum).	chem.)



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quiescent, stagnant	ruhig, unbewegt The nearly quiescent flow was observed.	(general)
quotation	Kostenvoranschlag, der The quotation met the client's expectations.	(econ.)
R&D	Acronym/Abbreviation referral: see research and development	(sci.)
R. Ph.	Acronym/Abbreviation referra l: see Registered Pharmacist	(pharm.)
rack	Gestell, das Rack storage of pallets requires forklifts.	(eng.)
radial engine	Sternmotor, der Private planes are sometimes equipped with radial engines.	(eng.)
radiation	Strahlung, die Ionizing radiation can be divided into alpha, beta and gamma radiat	( <i>chem</i> .) tion.
railcar	Schienenfahrzeug, das In contrast to a railway car, a railcar is self-propelled.	(eng.)
rancid	ranzig Butyric acid, CH ₃ CH ₂ CH ₂ -COOH, gives the characteristic, unpleasar rancid butter.	( <i>chem</i> .) nt smell to
random sample	Stichprobe, die A random sample of employees was picked to test the new software.	(pharm.)
randomly	zufällig The sample was randomly selected.	(general)
range	Bereich, der; reichen The measurements range from 4 to 65 mg/m³.	(sci.)
rated capacity	Nennkapazität, die The rated capacity of the extruder is 7.5 t/h.	(eng.)

rated power	Nennleistung, die The engine has a rated powder of 3.7 kW.	(eng.)
ratholing	Schachtbildung, die The vibrating bottom is supposed to prevent ratholing in silos.	(chem. eng.)
rating	Dimensionierung, die; Klassifizierung, die The level sensor has no rating for use in dust -explosive atmosphe	(eng.) eres.
ratio	Verhältnis, das The 12C/16C isotope ratio can be measured to estimate the age o	( <i>general</i> ) f a sample.
raw material	Rohstoff, der He was looking for two missing raw materials in the warehouse.	(chem.)
RCRA	Acronym/Abbreviation referral: see Resource Conservation and Rec	(chem. eng.) covery Act
REACH	Acronym/Abbreviation referral: see Registration, Evaluation and Au Chemicals	(chem. eng.) thorisation of
reaction	Reaktion, die According to the IUPAC definition, a chemical reaction is a proces in the Interconversion of chemical species.	( <i>chem</i> .) ss that results
readily soluble	leichtlöslich The readily soluble heavy metals were extracted from the soil sam	( <i>pharm</i> .) 1ple.
reading	Anzeige auf einem Gerät, die The instrument reading was faulty.	(chem.)
reagent	Reagenz, das In contrast to solvents and catalysts, a reagent (or reactant) is a su is consumed during a chemical reaction.	( <i>chem. eng</i> .) ubstance that
real power	Wirkleistung, die The ratio between real power and apparent power in an AC cir power factor.	( <i>eng</i> .) cuit is called

#### **Chemical Engineering Vocabulary**

real-estate agent	Immobilienmakler, der; Makler, der	(general)
	The real-estate agent was very experienced in the area.	
rear axle	Hinterachse, die	(eng.)
	The rear axle broke during the accident.	(8.)
rear drive	Heckantrieb, der	(eng.)
	The truck is equipped with rear drive.	× 87
rear view	Rückansicht, die	(eng.)
	The rear view of some houses is more attractive than the front view.	•
reassessment	Neubewertung, die	(general)
	After the cost estimation, a reassessment of the project profitability w	vas carried
	out.	
rebars		(eng.)
	Acronym/Abbreviation referral: see reinforcing bars	



receipt	Beleg, der Reimbursement of expenses can only be made against original re	(econ.) eceipts.
receivables	Forderungen, die; Kundenforderungen, die; Außenstände, die To improve the cash flow, the receivables were screened for overd	(econ.) ue payments.
receptacle	Wandsteckdose, die; Auffanggefäß, das; Auffangbehälter, der Power plugs are inserted into power sockets (=power receptacles, p	( <i>eng</i> .) ower outlets).
reclaimed rubber	Altgummi, der Reclaimed rubber can be used to save natural resources.	(chem.eng.)
recommendation	Empfehlung, die The chemist made a recommendation about two suppliers.	(general)
recommended exposure limit	empfohlene Belastungsgrenze, die	(chem.)
	The recommended exposure limit is the highest allowable airborne concentration of a substance that is not expected to give damage to a person at work.	
recommended		
International		(pharm.)
International Nonproprietary Name		(pharm.)
International Nonproprietary Name	e Acronym (engl.): rINN Acronym/Abbreviation referral: see International Nonproprietary N	-
	Acronym (engl.): rINN	Name (chem. eng.)
Nonproprietary Name	Acronym (engl.): rINN Acronym/Abbreviation referral: see International Nonproprietary N Wiederinbetriebnahme, die	Name (chem. eng.) mmissioning. (chem. eng.)
Nonproprietary Name	Acronym (engl.): rINN Acronym/Abbreviation referral: see International Nonproprietary N Wiederinbetriebnahme, die After a 6-month shutdown, the plant was in a condition for recon Altglas, das	Name (chem. eng.) mmissioning. (chem. eng.)

rectangle	Rechteck, das(sci.)An sheet of paper in A4 format constitutes a rectangle.
rectangular	rechtwinkelig ( <i>sci.</i> ) The surface area of a rectangular piece of land can be figured out easily.
rectifier	Gleichrichter, der(eng.)A rectifier converts alternating current (AC) to direct current (DC). The oppositedevice is called an inverter.
red line drawing	Rotpause, die(chem. eng.)The engineer marked the changes in a red line drawing.
redox reaction	Redoxreaktion, die (chem.) Examples of a redox reaction are the oxidation of carbon by oxygen to carbon dioxide or the reduction of carbon by hydrogen to methane. The former reaction is associated with a loss of electrons (oxidation), the latter one with a gain of electrons (reduction) for the carbon.
reducer	Reduzierstück, das(chem.)A reducer is a component in a pipeline that reduces the pipe size from one diameter to another.
reducing agent	Reduktionsmittel, das(chem.)A reducing agent becomes oxidized in a redox reaction and is therefore the electron donor.
reducing valve	Überdruckventil, das; Druckminderventil, das(chem. eng.)The reducing valve on the gas bottle was frozen because of the Joule-Thomsoneffect. At room temperature, all gases except hydrogen, helium and neon cooldown upon expansion.
reduction	Reduktion, die ( <i>chem.</i> ) An example of a reduction is the reaction of benzene to cyclohexane in the presence of a platinum catalyst according to $C_6H_6 + 3H_2> C_6H_{12}$ .
redundancy	Redundanz, die(general)Critical process equipment can be built in redundancy.

reel	Rolle, die A reel is used to redirect a rope.	(eng.)
refinery	Raffinerie, die The world's largest refineries process over 500,000 barrels of cru	( <i>chem. eng</i> .) 1de oil per day.
	1 barrel (bbl) is 42 US gallons or 159 l.	
reflux	Rückfluss, der By boiling the sample under reflux for 8 h, 80% of the total dissolved.	( <i>chem. eng</i> .) mass could be
refraction	Brechung, die Refraction, as described by Snell's law, is the change in direction to a change in its speed, e.g. at an interface between 2 media.	( <i>eng</i> .) a of a wave due
refractive index	Brechungsindex, der The refractive index (n) of glass is around 1.5. Therefore, the sp glass (v) is $1/1.5 = 0.67$ times the speed of light in vacuum (c n= c/v. n is dependent on the wavelength.	-



### Chemical Engineering Vocabulary

		F (538°C).
	feuerfestes Erzeugnis, das The oxides of aluminium (alumina, $Al_2 O_3$ ), silicon (silica, $SiO_2$ ) and (magnesia, MgO) can be used to produce refractories.	( <i>chem. eng.</i> ) I magnesium
•	feuerfestes Material, das A furnace is typically lined with refractory material.	(chem. eng.)
oxidiser	thermische Nachverbrennungsanlage mit regenerativer Abluftvorwärmung, die; regenerative thermische Oxidationstechnik, die; RTO-Anlage, die <i>regenerative thermal oxidizer (AE)</i> <i>Acronym (engl.): RTO</i> An RTO unit can cope with sulfur-containing gases, which would catalyst in a CCU.	( <i>chem. eng.</i> ) d poison the
-	Registertonne, die; Bruttoregistertonne, die	(general)
	1 register ton, a unit of volume used for the cargo capacity of a sh as 100 cubic feet (2.83 m ³ ).	ip, is defined
-	zugelassener Apotheker, der <i>Acronym (engl.): R. Ph.</i> He worked as a Registered Pharmacist in the United States.	(pharm.)
Registration, Evaluation and Authorisation of Chemicals		(chem. eng.)
	Acronym (engl.): REACH REACH is a new European Chemicals Policy that came into eff REACH applies to all chemicals with a production or import volum 1 tonne/year.	
registry of toxic effects of chemical substances	RTECS (Datenbank toxikologischer Informationen, die)	(chem. eng.)
	<i>Acronym (engl.)</i> : <i>RTECS</i> Published by NIOSH, RTECS presents basic toxicity data of numerou	s substances.

reinforced	verstärkt The cover is made from fibre-reinforced plastics.	(eng.)
reinforced concrete	Stahlbeton, der Reinforced concrete is used in most skyscrapers.	(eng.)
reinforcing bars	Betonrippenstahl A rebar, or reinforcing bar, is a carbon steel bar that is commonly reinforced concrete and reinforced masonry structures. It has ridges mechanical anchoring into the concrete.	•
release	Freisetzung, die; Freigabe, die In that accident, 2 tons of chlorine were released.	(pharm.)
remainder	Rest, der When dividing 27 by 4, 6 is the quotient and 3 is the remainder $27=6\times4+3$ .	( <i>chem</i> .) ; because
remains	Rückstand, der There were some metallic remains in the ash.	(chem.)
remedy	Abhilfe, die; Lösung, die; Medikament, das In homeopathy, concordant remedies are remedies of similar actio dissimilar origin.	( <i>pharm.</i> ) on but of
remittance	Geldüberweisung, die; Geldsendung, die; Remission, die A remittance, or "money sent home", is a transfer of money by a foreig to his home country.	( <i>econ.</i> ) gn worker
remitter, buyer, client, principal		(econ.)
remuneration	Extra costs are to be borne by the principal. Bezahlung, die; Entgelt, das; Vergütung, die The employee's remuneration included stock options.	(econ.)
repatriation	Wiedereinbürgerung, die; Rückführung, die After 12 years abroad, repatriation of the employee was a challenging	(general) g task.

reportable quantity	meldepflichtige Menge, die <i>Acronym (engl.): RQ</i> RQ is the amount of a substance that, when spilled, must be authorities under CERCLA.	( <i>chem. eng.</i> ) e reported to
research	Forschung, die Research and development are vital to the growth of any chemica	( <i>sci</i> .) al company.
research and development	Forschung und Entwicklung, die	(sci.)
	Acronym (engl.): R&D Acronym (dt.): F&E In Finland, R&D spendings amount to 3.4% of the GNP.	
researcher	Forscher(in), der (die) The researcher was hired from competition.	(sci.)
residence time	Verweilzeit, die A narrow residence time distribution is often advantageous.	(chem. eng.)

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237

residue	Rückstand, der Ash and soot are combustion residues.	(eng.)
	Asir and soot are combustion residues.	
resilient	rückstellfähig, rückfedernd	(eng.)
	A resilient material can store energy elastically.	C
resin	Harz, das	(chem.)
	Since two weeks, the resin has been more sticky than usually.	
Resource Conservation	n	(chem.)
and Recovery Act	Acronym (engl.): RCRA	
	RCRA (pronounced as "rick-rah" or "Wreck-rah") is an US law g disposal of solid and hazardous waste.	overning the
respirator	Atemgerät, das; Gasmaske, die; Beatmungsgerät, das A respirator is a device designed to protect the wearer from inha dusts, fumes, vapors, and/or gases. There are cost-effective, dispo and reusable models with replaceable filter cartridges.	e
respiratory system	Atemwege, die Ammonia can cause irritation to the respiratory system, the eyes	( <i>pharm</i> .) and the skin.
responsibility	Verantwortung, die It is a responsibility of engineers to check and verify their assump	(general) otions.
retail customer	Kleinabnehmer, der; Einzelhandelskunde, der Retail customers are entitled to extensive warranties.	(econ.)
retention	Zurückhaltung, die The adsorption column did not show any retention for $H_2S$ .	(eng.)
retention time	Retentionszeit, die Retention time is an important parameter in gas chromatography	(chem. eng.)
reticule, reticle, crosshair	Fadenkreuz, das	(eng.)
	In old instruments, the reticule was made from a thread of the b spider, an animal with 3 pairs of eyes.	rown recluse

retractable	einziehbar ( <i>eng.</i> ) Planes usually have a retractable landing gear.
retrofit, to	nachträglich hinzufügen, nachrüsten, nachrüstbar, Nachrüstung, die ( <i>eng.</i> ) A larger column was retrofitted into the HPLC instrument.
return line	Rücklauf, der(chem.)The return line showed strong fouling.
revamp	Überholung, die; Modernisierung, die(chem. eng.)A revamp is a major modification to an industrial plant in operation.
reverse osmosis	Umkehrosmose, die(chem. eng.)The desalination of seawater to freshwater is based on reverse osmosis.
revolutions per minut	e Umdrehungen pro Minute, die(eng.)Acronym (engl.): rpm(eng.)Acronym (dt.): U/min, UPM(dt.): U/min, UPMA dental drill runs with up to 800,000 rpm.(eng.)
reward	Belohnung, die(general)A working machine is an inventor's greatest reward.
rhomb, rhombus	Rhombus, der; Raute, die(sci.)The area of a rhombus is the product of the lengths of its diagonals divided by two.
ribbon	Band, das(eng.)The man attached the wooden stick to the scaffold using a rubber ribbon.
right angle	rechter Winkel, der (sci.) When placing tiles on the floor, right angles in the corners come in handy for the do-it-yourselfer.
right-hand(ed) thread	Rechtsgewinde, das(eng.)Most threads are right-handed. This means that a bolt or nut, seen from the top, is tightened by turning it in clockwise direction.

rigid	steif By using H-type steel bars, he could build a rigid structure.	(eng.)
rim	Rand, der; Felge, die The rim was too rough for the next processing step.	(eng.)
rinse, to	ausspülen, abspülen, spülen After cutting the meat, the cook rinsed the knife with water.	(eng.)
rivet	Niete, die The rivets are made from stainless steel.	(eng.)
rock salt	Steinsalz, das; Kochsalz, das The solubility of rock salt (NaCl) in water is 359 g/l at 25°C.	(chem.)
rod	Stange, die The mechanic used a rod to bridge the gap.	(eng.)

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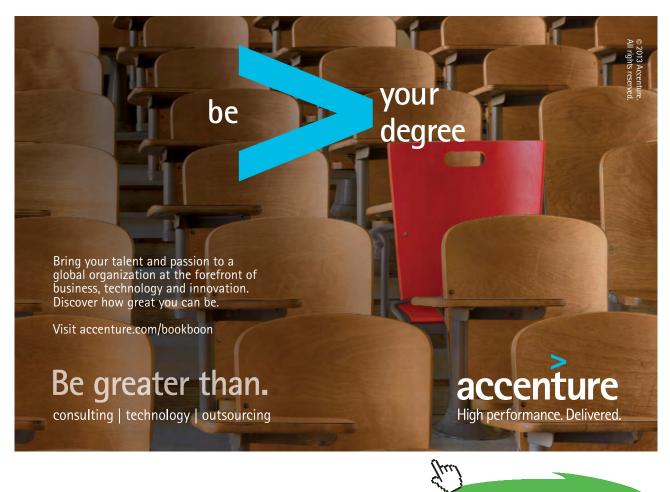
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rodent	Nagetier, das Rodent poisons fall into 2 categories: anticoagulant agents and h agents. Anticoagulants (most common type) block the production so that the rodent will bleed to death. Hypercalcemic agents conta These poisons work by raising the calcium content in the rodent's to toxic levels.	of vitamin K in vitamin D.
roller mill	Walzwerk, das A roller mill can be found in a steel factory.	(eng.)
rolling friction	Rollreibung, die Rolling friction is smaller than static friction.	(eng.)
Roots blower	Roots-Gebläse, das The Roots blower is a positive displacement pump. This type frequently used as supercharger in cars.	( <i>chem. eng.</i> ) of blower is
rope ladder	Strickleiter, die A rope ladder was supplied for emergencies.	(eng.)
rotary cement kiln	Zementdrehrohrofen, der The heat losses of the rotary cement kiln were analysed.	(chem. eng.)
rotary evaporator	Rotavapor, der A rotary evaporator is used to gently remove solvents from evaporation under reduced pressure.	( <i>chem</i> .) a sample by
rotary feeder, rotary valve	Drehschieber, der; Drehventil, das; Zellenradschleuse, die; Zellenrad, das A rotary valve can be used to transfer solids between 2 pressure l	(chem. eng.) evels.
rotary kiln	Drehrohrofen, der The rotary kiln was plugged by molten ash.	(chem. eng.)
rotary pump, rotary vane pump	Drehkolbenpumpe, die; Kreiselpumpe, die A rotary vane pump uses vanes mounted to a rotor that operates	(chem. eng.) in a cavity.

rotating current, three -phase current	Drehstrom, der	(eng.)
	Three phase current is used on engines. There are hardly any engite that use single phase electricity (design, vibration, efficiency ad industry, such engines are used to drive pumps, fans, blowers and	vantages). In
rough calculation	Überschlagsrechnung, die A rough calculation revealed that the pump had been designed to	(eng.) 00 small.
round off, to	abrunden 3.74 can be rounded off to 3.7.	(eng.)
round robin test	Ringversuch, der The lab participated in a round robin test.	(eng.)
round up, to	aufrunden 3.76 can be rounded up to 3.8.	(eng.)
royalty	Tantieme, die; Autorenhonorar, das; Kreiselpumpe, die Lizenzgebühr, die; Lizenz, die; Nutzungsgebühr, die The author received 2% royalties on the sales of his book.	(econ.)
RQ	Acronym/Abbreviation referral: see reportable quantity	(chem. eng.)
RTECS	Acronym/Abbreviation referral: see registry of toxic effects of chemic	(chem. eng.) cal substances
RTO	Acronym/Abbrevation referral: see regenerative thermal oxidizer	(chem. eng.)
rubber	Gummi, der Rubber is a soft material.	(eng.)
rubber hose	Gummischlauch, der A rubber hose can be connected to a silo truck to unload it.	(eng.)
rubber tube	Gummischlauch, der The rubber tube burst from the high pressure.	(eng.)

rubbing alcohol	Reinigungsalkohol, der; Franzbranntwein, der Isopropanol is used as rubbing alcohol.	(chem.)
rule of thumb	Faustregel, die As a rule of thumb, the lifetime of electronic equipment can be assum 5 years.	( <i>eng</i> .) ned to be
running water	Fließwasser, das A water ring pump consumes a high amount of running water.	(eng.)
rust	Rost, der Stainless steel does not develop rust.	(eng.)
Rx-only drugs (AE)	Acronym/Abbreviation referral: see POM	(pharm.)
sacrificial anode	Opferanode, die The pipeline was protected by equally spaced sacrificial anodes.	(eng.)



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SADT	(chem.)
	Acronym/Abbreviation referral: see self accelerating decomposition temperature
safety	Sicherheit, die (general)
	Safety has to be a key concern in the design, operation and decommissioning of a chemical plant.
safety data sheet	(chem. eng.)
	Acronym/Abbreviation referral: see SDS
safety instrumented function	SIF (chem. eng.)
	Acronym (engl.): SIF
	A Safety Instrumented Function (SIF) is defined as a function implemented by an SIS, which is intended to achieve or maintain a safe condition of the plant at all times.
Safety Instrumented System	SIS (chem. eng.)
,	Acronym (engl.): SIS
	A Safety Instrumented System (SIS) is a common form of process control for industrial processes.
Safety Intergrity Level	SIL, Sicherheitsintegritätslevel(chem. eng.)Acronym (engl.): SIL
	Safety Integrity Level SIL is a measure of risk reduction provided by a SIF based
	on four levels. Each level represents an order of magnitude of risk reduction.
	Every SIF has a SIL assigned to it. The SIS and equipment does not have a SIL assigned to it.
safety relief valve	Sicherheitsventil, das (eng.)
	A safety relief valve has to be designed for the maximum flow rate.
safety wire, lockwire	Sicherheitsdraht, der (eng.)
	Safety wires (lockwires) are common in the aircraft and racing industries as additional precaution to keep vital fasteners from unintentionally loosening due to vibration.

sales force	Verkaufsmannschaft, die; Außendienst, der The hit rate of the competitor's sales force was 17%.	(pharm.)
sales margin	Verkaufsspanne, die <i>Acronym (engl.</i> ): <i>SM</i> The sales margin of the chemical was 50 €/ton below expectation	(econ.) Is.
saliva	Speichel, der Human saliva consists to 98% of water.	(pharm.)
salve, ointment	Salbe, die Salves can be based on hydrocarbons (e.g. hard paraffin, soft para water soluble substances (e.g. polyethyleneglycol (PEG)).	( <i>pharm</i> .) affin), fat and
sampler	Probennehmer, der The sampler was installed in the wrong location.	(chem. eng.)
sandstone	Sandstein, der Sandstone can be easily processed.	(eng.)
sanitiser	Desinfektionsmittel, das <i>sanitizer (AE)</i> The nurse used a sanitizer for her hands before touching the tool	(pharm.) s.
saponification	Verseifung, die Soap, which consists of sodium or potassium salts of fatty acids, i the saponification of fat with lye. Thereby, the fats are hydrolyzed of fatty acids and glycerol.	•
saponification value	Verseifungszahl, die The saponification value is a measure of the average molecular v length) of fatty acids, which are carboxylic acids with long unbrance tails (chains). These can be either saturated or unsaturated.	e
sarcoma	Sarkom, das A sarcoma is a cancer of the connective tissue (bone, cartilage, fat mesoderm proliferation.	( <i>med</i> .) t) resulting in

saturated	gesättigt Hexane is a saturated hydrocarbon.	(chem.)
saturated steam	Sattdampf, der The temperature of dry saturated steam at 10 bar (absolute) is 180°C.	(chem.)
saturation vapor pressure	Sättigungsdampfdruck, der	(chem.)
pressure	At saturation vapor pressure, a substance in the gas phase is in equilibri the liquid phase of that substance beneath.	um with
scaffold	Baugerüst, das A scaffold is no permanent installation.	(eng.)
scale	Maßstab, der The scale on the layout diagram is 1:75.	(eng.)
scale-up	Scale-up, das; Übertragung auf die Großanlage, die ( <i>che</i> Scale-up often relies on the use of dimensionless numbers.	em. eng.)



246

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scaly	schuppig Muskovite is a scaly mineral with a pearlescent shine.	(pharm.)
scanty	knapp, spärlich, notdürftig The information provided by the MSDS is scanty.	(general)
scattering	Streuung, die Scattering of sunlight on air molecules makes the sky appear blue.	(chem.)
schedule	Plan, der; operativer Ablauf, der; Terminplan, der; Fahrplan, der; Ablaufplan, der The project schedule was endangered by the results of the soil investig	( <i>econ</i> .) gation.
scholar	Gelehrter, der A good scholar is able to explain a complicated situation in simple wo	( <i>sci.</i> ) ords.
science	Wissenschaft, die Calculating the Peclet number is not rocket science.	(sci.)
scientist	Wissenschafter(in), der (die) On international conferences, scientists can exchange thoughts with the	( <i>sci</i> .) eir peers.
scope	Geltungsbereich, der; Rahmen, der; Spielraum, der; (Projekt)Umfang, der The project scope was not clearly defined.	(general)
SCR	(che Acronym/Abbreviation referral: see selective catalytic reduction	em. eng.)
scrap	Schrott, der; Abfall, der There is a scrapyard close to the plant.	(eng.)
scrap copper	Altkupfer, das Scrap copper is collected and processed by specialized companies.	(eng.)
scraper	Schaber, der Kitchen scrapers can be made from metal, plastics, wood or rubber.	(eng.)

### Chemical Engineering Vocabulary

screen	Bildschirm, der; Filter, der; Sieb, das The process engineer studied the temperature drop on his screen.	(eng.)
screen cloth	Siebgewebe, das The industrial screen cloth has 10 mesh, i.e. 1651 μm wide openings.	(eng.)
screen pack	Siebplatte, die; Siebpaket, das The screen pack was blocked by metallic parts.	(eng.)
screw	Schraube, die The bar was secured by two screws.	(eng.)
screw cap	Schraubdeckel, der; Verschlusskappe, die A screw cap is a closure on a container, i.e. a mechanical device which is on and off (reclosable).	( <i>eng</i> .) screwed
screw conveyor	Schneckenförderer, der A screw conveyor can be used to transport solids or sludges.	(eng.)
screw driver	Schraubenzieher, der His screw driver was too small to losen the connection.	(eng.)
screw gauge	Gewindelehre, die The workshop was not equipped with a screw gauge.	(eng.)
screw joint	Schraubverbindung, die The screw joint failed due to too high forces.	(eng.)
scrubber	Wäscher, der; Gaswäscher, der (che The scrubber was designed for a maximum $SO_2$ capturing capacity of	<i>m. eng</i> .) 500 g/h.
SD	Acronym/Abbreviation referral: see shutdown	(chem.)
SDS	(che Acronym/Abbreviation referral: see material safety data sheet	em. eng.)
seal	Dichtung, die; Abdichtung, die In contradiction to the vendor's statement, the seal was not completely g	( <i>eng</i> .) gas tight.

sealing compound	Dichtungsmasse, die	(eng.)
	The application limit of the sealing compound was overlooked.	
	Naht dia	(2007)
seam	Naht, die	(eng.)
	The seam between the steel plates was ground.	
seaport	Seehafen, der; Hafenstadt, die	(eng.)
	Dover in the UK is one of the busiest seaports for passengers.	
seaworthy	seetüchtig	(eng.)
	After the storm, the ship was not seeworthy any more.	
second order reaction	Reaktion zweiter Ordnung, die	(chem.)
second order reaction	C	
	In a second order reaction, the reaction rate is determined by the c	concentration
	of two chemical species.	
secondary air	Sekundärluft, die; Zusatzluft, die	(chem. eng.)
	By using secondary air, the CO emissions could be reduced by 85	5%.



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seed crystal	Impfkristall, der(chem.)Impurities on the vessel wall can act as seed crystals.
segregation	Seigerung, die; Trennung, die (eng.) The day supervisor proposed to wet the powder in an attempt to limit segregation.
seizure	Krampf, der(med.)Ingestion of the herbicide by humans can lead to seizures.
selective catalytic reduction	SCR-Verfahren, das; selektive katalytische Reduktion, die (chem. eng.) Acronym (engl.): SCR Acronym (engl.): SCR SCR catalysts are manufactured from various ceramic materials used as carriers, e.g. titanium dioxide. As active catalytic components, oxides of base metals (e.g. vanadium and tungsten), zeolites, and various precious metals are used.
selective non-catalytic reduction	SNCR-Verfahren, das; selektive(chem. eng.)nicht-katalytische Reduktion, dieAcronym (engl.): SNCRAcronym (engl.): SNCRSNCR is a method to reduce NOx emissions in power plants that burn biomass,waste and coal. The process involves injecting either ammonia or urea into thecombustion chamber to react with the nitrogen oxides. The reduction can bedescribed as $4 \text{ NO} + 4 \text{ NH}_3 + \text{O}_2> 4 \text{ N}_2 + 6 \text{ H}_2\text{O}.$
self accelerating decomposition temperature	selbstbeschleunigende Zersetzungstemperatur, die; SADT, die (chem.) Acronym (engl.): SADT Acronym (engl.): SADT The SADT of an organic peroxide needs to be looked up in its MSDS to determine a safe storage temperature.
self acting	selbsttätig(eng.)Self acting filling machines can operate over the weekend.
self cleaning	selbstreinigend(eng.)The lotus effect explains self cleaning surfaces.

self supporting	selbsttragend The self supporting roof was designed to withstand wind speeds of 130	( <i>eng</i> .) m/s.
self-aspirated	selbstansaugend The flare has a self-aspirated igniter.	(eng.)
self-contained breathing apparatus	umluftunabhängiges Atemschutzgerät, (chen das; schwerer Atemschutz, der In order to enter the vessel, the worker put on a self-contained bre apparatus.	n. eng.) eathing
semi finished product	Halbzeug, das Over the last month, the company had built up a too high stock level of finished products.	( <i>eng</i> .) of semi
semi metal	Halbmetall, das (A semimetal is a material with a small overlap in the energy of the cond band and valence band. Metalloids are a group of chemical elements to neither metal nor nonmetal. Semimetals, in contrast to metalloids, elements (arsenic, antimony, bismuth) or compounds (HgTe). Tin and g are semimetals, but no metalloids.	hat are can be
semi-batch	Teilfließbetrieb, der (chen In a semi-batch operation, one reactand is already present, while the seco is continuously fed to the process. It is also possible to withdraw one p continuously. A typical avantage of a semi-batch operation is a com reaction with higher yields. Examples of this reaction type are esterificat	product
semiconductor	Halbleiter, der ( By doping, silicon can be made a p-type or an n-type semiconductor. The common dopants are acceptors from group III ( $\rightarrow$ p-type) or donors from V elements ( $\rightarrow$ n-type).	
semilog graph, semi-log plot, semi-log	halblogarithmische Darstellung, die A semilog graph is a convenient way to visualize data that are changing an exponential relationship.	( <i>sci</i> .) g with

senior advisor	Chefberater, der; leitender Berater, der ( <i>econ</i> .) The senior legal advisor left the company to found his own business.	
senior management	gehobenes Management, das The investment proposal was not approved by senior management.	(econ.)
sensitiser	Sensibilisator, der sensitizer (AE) Tetracene ( $C_{18}H_{12}$ , naphthacene) is a common sensitiser. It is used in light-emitting diodes (OLEDs).	( <i>chem</i> .) organic
sensitising	allergisierend, Sensibilisierung, die ( <i>sensitizing</i> ( <i>AE</i> ) The risk of allergic sensitization and the development of allergies var age.	pharm.)
sensitive to heat	wärmeempfindlich The researcher was not aware that his construction was sensitive to he	(eng.) eat.

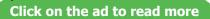
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separating funnel	Scheidetrichter, der(chem.)A separating funnel is used for liquid-liquid extractions to separate the components of a mixture between two immiscible solvent phases of different densities, which are typically water and an organic solvent.
separation process	Trennverfahren, das(chem. eng.)Common separation processes in chemical engineering are adsorption, centrifugation, chromatography, crystallisation, drying, extraction, filtration and sieving.
set screw	Stellschraube, die(eng.)The apprentice did not know which set screw he should engage.
setting time	Abbindezeit, die(eng.)The man disregarded the setting time of the formulation.
settle, to	sich absetzen(eng.)The flocculated material was allowed to settle for 10 min prior to filtration.
settling tank	Absetzbecken, das(eng.)The level sensors in the settling tanks of the waste water treatment plant didnot work.
sewage	Abwasser, das(eng.)Untreated sewage water from the mill was sent to the river.
sewer	Abflusskanal, der(eng.)A leak in the sewer system was discovered by accident.
sewing machine	Nähmaschine, die (eng.) The knowledge how to operate a sewing machine is not so widespread among men.
shackle	Lastöse, die; Haltebügel, der; Zuglasche, die(eng.)Shackles are common construction elements.
shaft	Welle, die; Schacht, der(eng.)The shaft has a specific torque density of 10 Nm/mm³.

share	Anteil, der(econ.)Everybody had contributed his share to the success of the project.
shavings	Hobelspäne, die (Hobelspan, der)(eng.)Shavings can be converted into wood pellets.
shear	Scherung, die(eng.)Shear is the deformation of materials when parallel internal surfaces slide pasteach another.
shear modulus	Schubmodul, der ( <i>eng.</i> ) The shear modulus (modulus of rigidity, G) of diamond is 480 GPa, whereas it is only 80 GPa for steel and 0.1 GPa for polyethlyene (room temperature). G is defined as the ratio of shear stress to shear strain.
shear strength	Scherfestigkeit, die(eng.)Shear strength is an important parameter in material science. Ductile materials generally fail in shear (e.g. aluminum), whereas brittle materials (e.g. cast iron) fail in tension.
sheath	Hülle, die; Schutzhülle, die; Mantel, der(eng.)The sheath is the outer layer of a cable.
sheathing	Verkleidung, die; Betonschalung, die(eng.)By sheathing, he applied a weatherproof cladding to his house.
sheet metal	Blech, das(eng.)Sheet metal is used for the production of cars.
shelf life	Lagerbeständigkeit, die; Lagerfähigkeit, die(pharm.)The shelf life of a product is influenced by its exposure to light and heat.
shielding gas	Schutzgas, das(chem. eng.)Nitrogen, carbon dioxide or argon can be used as shielding gas.
shift	Schicht, die (Arbeitsteam, das)(econ.)At shift handover, valuable information was lost.

shift supervisor, shift leader	Schichtführer, der; Schichtmeister, der	(chem. eng.)
	The shift supervisor was responsible for a team of 6.	
ship yard	Schiffswerft, die	(eng.)
	The boat was taken to the ship yard for maintenance.	
shock absorber	Stoßdämpfer, der	(eng.)
	Screens for the removal of over-and undersized particles are e	-
	shock absorbers so that they do not disturb the equipment close	e by.
shock wave	Stoßwelle, die	(eng.)
	An object moving at supersonic speed creates a shock wave.	
shop floor	Fabrikshalle, die; Werkstatt, die; Produktionsstätte, die	(chem. eng.)
	In contrast to white collar workers, blue collar workers in the pro-	e e
	generally perform their tasks on the shopfloor.	
short circuit	Kurzschluss, der	(eng.)
	The short circuit was caused by a broken glass inside a heating h	nood.



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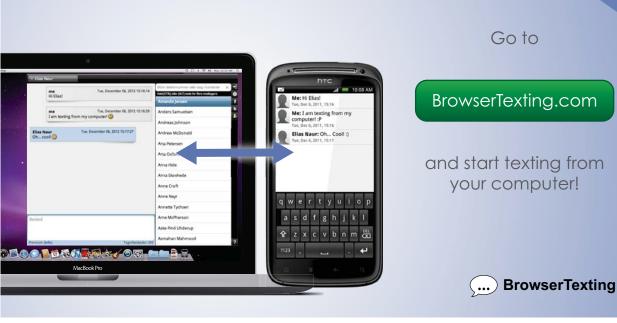


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Short Term Exposure Limit	STEL, Durchschnittswert der letzten 15 Minuten, der	(chem.)
	Acronym (engl.): STEL STEL is the highest concentration permitted for short periods of time, g 15–30 minutes.	enerally
short-pass filter	für kurzwelliges Licht durchlässiger Filter, der A short-pass filter transmits wavelengths below a specific wavelength.	(eng.)
short-term exposure value		(chem.)
	Acronym/Abbreviation referral: see STEV	
shotcrete	Spritzbeton, der Shotcrete can be applied on vertical and overhead surfaces.	(eng.)
shovel	Schaufel, die With the larger shovel, he could easily dig a hole into the ground.	(eng.)
shunt	Nebenwiderstand, der; Nebenschlusswiderstand, der; Messwiderstand, der; Shunt, der	(eng.)
	In electronics, a shunt is a device which allows electric current to pass another point in the circuit.	around
shutdown, shut down	abfahren; Stillstand, der <i>Acronym (engl.</i> ): <i>SD</i> The plant was shut down in a controlled way.	(chem.)
shutoff device, isolation valve, shutoff valve	Absperrarmatur, die (ch	em.eng.)
	The shutoff valve was stuck.	
SI unit	<ul> <li>SI- Einheit, die</li> <li>The SI system (International System of Units, SI from French "Système International d'Unités") has seven base units:</li> <li>1) metre (m) for length,</li> <li>2) kilogram (kg) for mass,</li> <li>3) second (s) for time,</li> </ul>	( <i>eng</i> .) e

	<ul> <li>4) ampere (A) for electric current,</li> <li>5) Kelvin (K) for thermodynamic temperature,</li> <li>6) candela (cd) for luminous intensity, and</li> <li>7) mole (mol) for the amount of substance.</li> <li>Three nations have not officially adopted the SI system as their sole measurement system: Liberia, Myanmar and the United State</li> </ul>	
sickle	Sichel, die Some country flags show a sickle.	(eng.)
side effect	Nebenwirkung, die Dolasetron $(C_{19}H_{20}N_2O_3)$ is a well-tolerated drug with few side headache, dizziness, and constipations.	( <i>pharm</i> .) e effects, e.g.
side valve	Seitenventil, das The engine was equipped with side valves.	(chem.)
sieve	Sieb, das This sieve has 500 mesh.	(chem.)
SIF	Acronym/Abbreviation referral: see safety instrumented function	(chem. eng.)
sign a contract, to	einen Vertrag unterschreiben The general manager refused to sign the contract.	(econ.)
SIL	Acronym/Abbreviation referral: see Safety Integrity Level	(chem. eng.)
silencer	Schalldämpfer, der Blowers that are installed inside a production building should be e silencers.	( <i>eng</i> .) quipped with
silica, silicon dioxide	Siliziumdioxid, das Acronym (engl.): $SiO_2$ Acronym (dt.): $SiO_2$ Fibers for data transmission via light are produced from silica.	(chem.)

silicic acid	Kieselsäure, die Silicic acid is a general name for compounds with the form In dilute aqueous solutions, metasilicic acid ( $H_2SiO_3$ ), ortho disilicic acid ( $H_2Si_2O_5$ ) and pyrosilicic acid ( $H_6Si_2O_7$ ) can b state, they condense to polymeric silicic acids.	silicic acid ( $H_4SiO_4$ ),
silicon	Silizium, das The Czochralski process is used to produce single crystal (e.g. silicon), metals and salts. Typical ingot diameters are 20 The thickness of standard silicon wafers is 0.2 to 0.75 mm	00 mm and 300 mm.
silicone, polysiloxane	Silikon, das Silicone (not to be confused with silicon) consists of po (polysiloxanes). Silicones are mixed inorganic-organic formula $[R_2SiO]_n$ , where R stands for organic groups such phenyl, that are attached as side groups to an inorganic silico (Si-O- Si-O-Si-O).	polymers with the as methyl, ethyl or
silk	Seide, die Silk is a natural protein fiber, i.e. a chain of amino acids.	(chem.)
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single crystal, monocrystal	Einkristall, der	(chem.)
	Wafers are made from silicon single crystals. These can be obta Czochralski process.	uned in the
sink	Ausguss, der The sink must not be misused for solvents.	(chem.)
SIS	Acronym/Abbreviation referral: see Safety Instrumented System	(chem. eng.)
sketch	Skizze, die He captured his idea in a sketch inside his laboratory notebook.	(eng.)
skill	Fähigkeit, die Each employee should be deployed according to his individual skil optimum results.	( <i>general</i> ) ls to achieve
skimmer	Abstreifer, der; Abschäumer, der; Siphon, der; Skimmer, der Skimmers are frequently used to remove oil floating on water.	(chem. eng.)
skylight	Dachfenster, das; Luke, die; Oberlicht, das The skylight was properly dimensioned.	(eng.)
slide, to (slid, slid)	gleiten The mercury droplets were sliding on the laboratory bench.	(eng.)
sliding friction	Gleitreibung, die The new tire causes lower sliding friction than the previous model	( <i>eng</i> .) I.
slit	Spalt, der At the slit, the waves were diffracted.	(eng.)
slope	Neigung, die; Böschung, die The slope of the ramp was 10°.	(eng.)
slot	Schlitz, der The student tried to model nitrogen conversion in a slot burner.	(eng.)

slotted	gekerbt, geschlitzt, genutet A slotted spoon can be compared to a sieve.	(eng.)
slotted hole, slot hole	Langloch, das The slotted hole showed sharp edges.	(eng.)
sludge	Schlamm, der Sewage sludge cannot be readily used as a fertilizer.	(chem. eng.)
sluice valve	Keilschieber, der; Hauptschieber, der; Absperrschieber, der Sluice valves normally have flanged ends.	(chem. eng.)
slurry	Slurry, der; Schlamm, der; Aufschlämmung, die Slurry pipelines are used to transport coal, copper, iron, bauxi but also trailings for disposal.	( <i>chem. eng</i> .) te and oil sands,
SM	Acronym/Abbreviation referral: see sales margin	(econ.)
smear	Ausstrich, der; Abstrich, der She performed a smear test.	(pharm.)
smear, to	ausstreichen, schmieren He smeared the paint onto the wall.	(pharm.)
smell	riechen; Geruch, der The smell of natural gas comes from butanethiol ( $C_4H_9SH$ ), whi odor.	( <i>chem</i> .) ch has a "skunk"
smelter	Metallhütte, die; Hüttenwerk, das In a smelter, metal is obtained by reduction from its ore.	(eng.)
smoke	Rauch, der (fest in gas) Cigarette smoke contains more than 600 substances.	(chem.)
smooth	sanft A coupling is used for smooth engine power transmission.	(eng.)

snake venom	Schlangengift, das (a Snake venom is a mixture of toxins and different enzymes used for purposes like increasing the prey's uptake of toxins.	chem.) other
snap ring, retainer, circlip	Sprengring, der	(eng.)
-	A circlip is a fastener that permits rotation, but prevents lateral moveme	nt.
SNCR	(chem. Acronym/ Abbreviation referral: see selective non-catalytic reduction	. eng.)
soap bubble	Seifenblase, die A good recipe for soap bubbles consists of dishwashing detergent, glyceri water in the ratio of 5:1:100.	( <i>eng</i> .) in and
soap stone	Speckstein, der (a Soap stone is largely composed of talc, which is a hydrated magnesium s with the chemical formula $Mg_3Si_4O_{10}(OH)_2$ .	chem.) silicate



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soda ash, soda	Soda, das Acronym (engl.): $Na_2CO_3$ Acronym (dt.): $Na_2CO_3$ Soda ash, which is industrially produced in the Solvay process accord NaCl + CaCO ₃ > Na ₂ CO ₃ + CaCl ₂ , can be found in the ash of many	•
sodium	Natrium, das <i>Acronym (engl.): Na</i> <i>Acronym (dt.): Na</i> Sodium has a cubic body centered crystal structure and melts at 98°C	(chem.)
sodium dodecyl sulphate	Natriumlaurylsulfat, das; Natriumdodecylsulfat, das <i>Acronym (engl.): SDS, NaDs</i> <i>Acronym (dt.): SDS</i> NaC ₁₂ H ₂₅ SO ₄ ; SDS is an anionic surfactant used in many cleaning agen	(chem.) nts.
sodium hydroxide	Natriumhydroxid, das <i>Acronym (engl.): NaOH</i> <i>Acronym (dt.): NaOH</i> Sodium hydroxide, which can be bought as pellets, is deliquescent if ex air moisture. Also, it will absorb CO ₂ and therfore has to be sealed for	-
sodium hydroxide	Natronlauge, die <i>Acronym (engl.): NaOH</i> <i>Acronym (dt.): NaOH</i> Unlike NaOH, the hydroxides of most metals are insoluble in water, so hydroxide can be used to precipitate metal hydroxides.	(chem.) sodium
sodium silicate, soluble glass, water glass	Wasserglas, das	(chem.)
	An aquaeous solution of sodium metasilicate, $Na_2SiO_3$ , is used in the "organden".	chemical
SOF	Acronym/Abbreviation referral: see solar occultation flux	(eng.)

soften, to	erweichen	(chem.)
	Glass can be made from pure silica $(SiO_2)$ , but fused silic transition point of approx. 1200°C. The softening temperat lowered, however, by adding lime $(CaCO_3)$ and soda $(Na_2C)$ to incorporate calcium and sodium oxide into the glass.	ture of glass can be
softener	Weichmacher, der	(chem.)
	Fabric softeners work by coating the surface of the cloth fibe of chemicals which act as lubricant and are electrically condu- the fibers feel smoother and preventing the buildup of static softeners are based on quaternary ammonium salts with on chains.	uctive, thus making c electricity. Typical
soil	Boden, der	(eng.)
	To determine the required length of the ground pillars, a so performed.	•
solar occultation flux	Verdeckung des solaren Strahlungsflusses, die Acronym (engl.): SOF	(eng.)
	SOF is a method to quantify emissions from point sources or industrial production plants.	s such as volcanoes
soldering	Weichlöten, das	(eng.)
0	For soldering, it is advantageous to use an eutectic alloy (e. lead), because it is easier to obtain reliable joints.	-
solenoid	Magnet-; Magnet, der	(chem.)
	The solenoid valve broke down.	()
solicitor	Rechtsanwalt, der	(jur.)
	attorney, attorney-at-law (AE) An attorney is knowlegdeable about the jurisdiction in his	country.
solid	fest; Feststoff, der	(chem.)
sonu	Aerogels are the lightest known solids. Their density can be	
solid solution	Mischkristall, der	(chem.)
	In a solid solution, some atoms or molecules in a crystalline substituted without a change in the structure.	

solid state physics	Festkörperphysik, die Electrical and thermal properties of condensed matter are described state physics.	( <i>chem</i> .) by solid
solid state reaction	Festkörperreaktion, die A solid-state reaction is a chemical reaction system in the absence of a Advantages can be easy purification, a high reaction rate and cost save	
solid wood	Vollholz – Furniture from solid wood is regarded as superior quality.	(eng.)
solidification	Erstarrung, die Solidification usually starts at the surface, which is the coldest area.	(chem.)
solidify, to	erstarren When a material starts to solidify, multiple crystals begin to grow in th to yield a polycrystalline solid.	( <i>chem</i> .) he liquid

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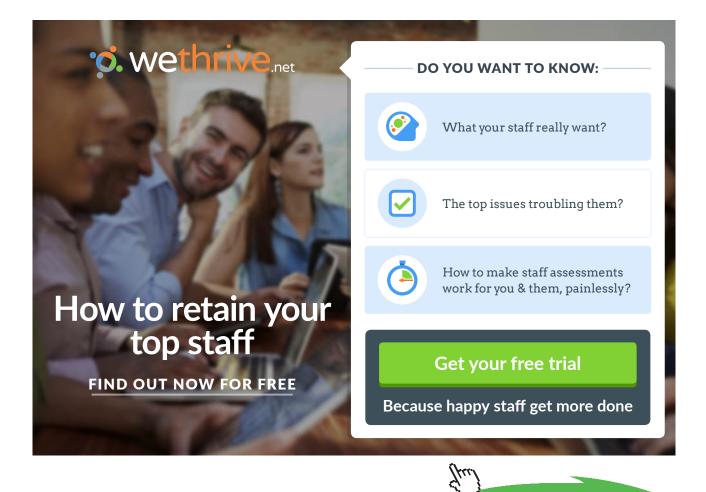
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264

solubility	Löslichkeit, die (chem.) When added to water, ethanol can act as solubility enhancer for trichloroethylene, a substance which was widely used as a degreasing agent and that can now be found in contaminated soil.
solute	gelöster Stoff, der (chem.) Glucose $(C_6H_{12}O_6)$ is a solute in blood. The concentration of blood sugar is between 4 and 6 mM (mmol/l).
solvent	Lösungsmittel, das(chem.)Acetone ( $CH_3COCH_3$ ), the simplest ketone, is a polar, aprotic solvent (i.e. does not release acidic hydrogen H ⁺ ). It dissolves most plastics.
soot	Ruß, der(chem.)Soot is a byproduct of fuel-rich combustion processes.
sophisticated	ausgeklügelt(general)He has developed a sophisticated formula to predict the yield of his reaction.
soundproofing	Schalldämmung, die; Lärmschutz, der(eng.)Soundproofing can be achieved by noise reduction and noise absorption.
source	Quelle, die(general)She forgot to quote the source of her information.
space group	Raumgruppe, die(chem.)There are 230 space groups to describe all possible crystal symmetries.
spacer	Distanzstück, das; Abstandshalter, der(chem.)The patent is about a molecular spacer that is covalently bonded to the substrate.
spacing	Abstand, der(chem.)In hexa-tert-butyldisilane, the spacing between the 2 Si atoms is longer than in any other silane.
spare part	Ersatzteil, der(eng.)For each critical process equipment, spare parts need to be kept on stock.

spark	Funke, der(chem.)A spark caused by static electricity can ignite several gases.	
spark plug	Zündkerze, die (eng.) A spark plug is used in internal combustion engines working on the Otto principle.	
SPC	(chem. eng.) Acronym/Abbreviation referral: see statistical process control	
speciality gas	Spezialgas, das(chem. eng.)specialty gases (AE)The company sells over 30 speciality gases.	
species	Spezies, die(chem.)CO, H2O and OH are species present in flames.	
specific density, relative density	spezifische Dichte, die; relative Dichte, die(eng.)The specific density (relative density) of a substance is the ratio of its density to that of a given reference material, for instance air or water.	
specific gravity, relative gravity	spezifisches Gewicht, das; relatives Gewicht, das (en Aluminium has a specific gravity of 2.7, so it is 2.7 times as dense as water. Le has a specific gravity of 11.35, so it is 11.35 times as dense as water.	
specifications	Spezifikationen, die (econ.) The technical specifications of the plant were derived from laboratory experiments.	
specifications, product requirement specifications	Pflichtenheft, das (econ.)	
Specifications	The supplier handed over the draft of his product requirement specifications to the client for review.	

specifications, specification sheet, functional specification,	Lastenheft, das	(econ.)
customer requirement		
specifications		
	The specifications were based on the input of 2 engineers.	
specimen	Probe, die; Testkörper, der	(chem.)
	The specimen was characterized by its emission spectrum.	
specs.		(econ.)
	Acronym/Abbreviation referral: see specifications (short form for ~)	
spectrometry	Spektrometrie, die	(chem.)
	Mass spectrometry is a sensitive technology to determine the mass/cha	rge ratio
	of sample (fragments).	

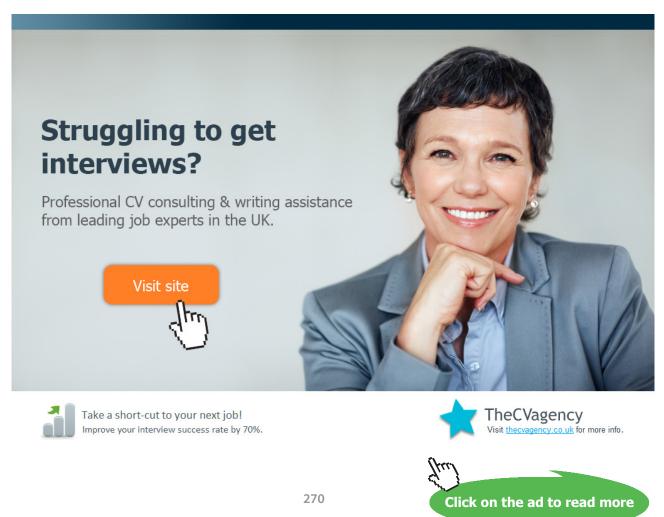


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spectroscopy	Spektroskopie, die	(chem.)
	In spectroscopy, the interaction of light with matter is me	asured as emission,
	absorption or scattering in order to gain information on th	ne sample.
speed	Geschwindigkeit, die; Drehzahl, die	(eng.)
	The speed of ships is commonly stated in knots.	
speed of sound	Schallgeschwindigkeit, die	(eng.)
	The speed of sound in water and in steel is approx. 1,5 respectively.	500 and 4,500 m/s,
sphere	Kugel, die	(sci.)
	A sphere has a minimum surface/volume ratio.	
splash proof	spritzwassersicher	(eng.)
	Splash proof equipment is classified as IP54. The IP C Protection Rating, Ingress Protection Rating) is an interna describes the degree of protection provided against the intru dust and water into electrical enclosures.	tional standard that
splash water	Spritzwasser, das	(eng.)
	When manual cleaning is performed in a plant, all electric be protected against splash water.	cal equipment must
splash, to	spritzen	(eng.)
	Protective goggles avoid harm to the eyes from aggressive	liquid splashes.
splice, to	verbinden, spleißen, zusammenfügen	(eng.)
	The technician spliced the two cables.	
spoke	Speiche, die	(eng.)
	Spokes can be made of different materials, depending on w	hether they have to
	withstand tension (e.g. bicycle wheel) or compression (hor	se carriage wheel).
spool	Spule, die; Rolle, die	(eng.)
	The solenoid spool was malfunctioning.	
spoonful	einen Löffel voll	(chem.)
	She added a spoonful of pigment to the mixture.	

stagnant	stillstehend, unbewegt (general) The nearly stagnant flow was observed.
staggered	gestaffelt ( <i>eng.</i> ) The student drew the alkane in staggered conformation in Newman projection.
staff	Belegschaft, die(econ.)The staff was invited to visit the customer.
square with	rechtwinkelig zu (eng.) The warehouse is sited square with the main road.
spruce	Fichte, die (general) Spruce, an evergreen tree, is amongst the most important woods for paper manufacture.
sprinkle, to	bespritzen, bestreuen, berieseln(chem.)He sprinkled the surface with powder.
spring	Feder, die(eng.)A spring is described by Hook's law.
spreadsheet	Tabellenblatt, das(eng.)The assistant prepared a spreadsheet with all costs.
spray, to	sprühen, spritzen(eng.)A protective coating was sprayed onto the conveyor belt.
spotting test	Tüpfelprobe, die(chem.)The spotting test for Mo (Molybdenum) in CrNi steel can tell the materials1.4401 and 1.4571 apart.

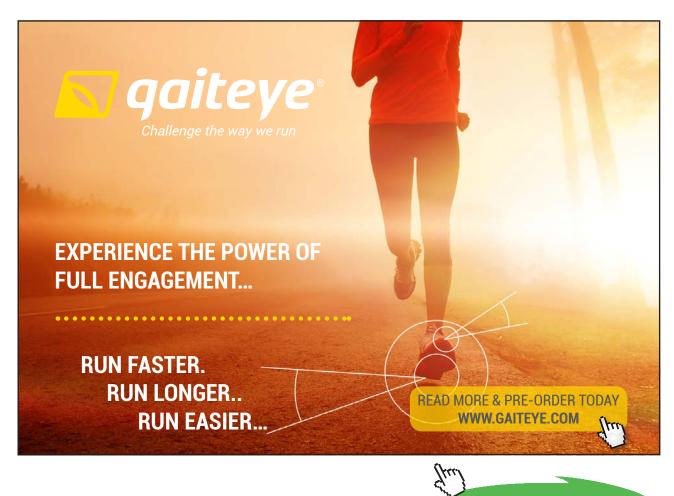
standard deviation	Standardabweichung, die	(sci.)
	Acronym (engl.): σ	
	<i>Acronym</i> ( <i>dt</i> .): σ	
	In case of a Gaussian distribution, 66% of all values fall within t	he mean +/- 1
	standard deviation.	
standard temperature	Normalbedingungen, die	(chem. eng.)
and pressure		
	Acronym (engl.): STP Acronym (dt.): NTP	
	The current version of IUPAC's definition of STP is a temperature	of 0°C (273.15
	K, 32 °F) and an absolute pressure of 100 kPa (14.504 psi).	
stannous	zinnhaltig, Zinn, das	(chem.)
	Acronym (engl.): Sn	
	Acronym (dt.): Sn	
	Stannous fluoride (tin(II) fluoride) is a common ingredient	in toothpaste,
	because it converts apatite into fluoroapatite in the enamel.	



starboard	Steuerbord Starboard is the right side of a ship (green navigation light). The referred to as port (red navigation light).	( <i>eng</i> .) he left side is
starch	Stärke, die The carbohydrate starch $(C_6H_{10}O_5)_n$ ) is a polysaccharide. It is glucose monosaccharide joined together by glycosidic bonds. components: amylose (linear polymer of glucose) and amylop branched polymer of glucose).	Starch has 2
start up, to	anfahren; Anfahren, das	(chem. eng.)
start-up	Starting up a cracker can take several days.	C
starting torque	Anlaufmoment, das The extruder was heated to 240°C to lower the starting torque.	(eng.)
state of matter	Aggregatzustand, der Plasma is the fourth state of matter.	(chem.)
state of the art,	Stand der Technik, der	(eng.)
state-of-the -art	In patent law, the state of the art or "prior art" is the starting poin novelty of an invention.	e
state variable	Zustandsvariable, die State variables (state parameters, thermodynamic variables) momentary condition of a thermodynamic system. Examples temperature, mass, density, entropy and enthalpy.	
state friction	Haftreibung, die The coefficient of static friction between steel and steel was deter in case of dry surfaces and as 0.3 in the presence of a thick oxide	
statistical process control	statistische Prozesskontrolle, die	(chem. eng.)
	Acronym (engl.): SPC	
	Using SPC tools, the product quality could be improved signification	antly.

steam	Wasserdampf, der; Dampf, der(chem.)Plants that have oversized boilers and steam distribution systems shouldinvestigate a steam pressure reduction in order to save energy.
steam boiler	Dampfkessel, der(chem. eng.)Steam boilers fall under the pressure vessel directive and therefore have to meet certain minimum requirements.
steam engine	Dampfmaschine, die (eng.) A steam engine can convert heat from almost any source into mechanical work. Without steam condensation, the efficiency is on the order of 1–10% (historic steam locomotives) compared to 85–90% for power plants that use steam in cogeneration.
steam reforming	Dampfreformieren, das (chem. en g.) In steam reforming, the following endothermic reaction takes places: $C_n H_{2n+2}$ + $nH_2O \rightarrow nCO + (2n+1)H_2$ .
steel	Stahl, der(chem.)Steel is an alloy consisting mostly of iron, where the carbon content lies between0.2% and 2% by weight. In 2004, the global steel production surpassed 1 billiontonnes/year.
steel refining	Stahlfrischen, das(chem. eng.)During steel refining, vacuum can be applied to remove unwanted gaseouscomponents such as hydrogen before further processing.
steel wool	Stahlwolle, die(eng.)Because of its high surface area, steel wool can be ignited with a lighter.
steelmaking	Stahlproduktion, die(eng.)Some people say that steelmaking is more an art than a science.
steelmaking plant	Stahlwerk, das(eng.)The profitability of a steelmaking plant is driven by its production costs.
STEL	zulässige Kurzzeitbelastung, die(chem.)Acronym/Abbreviation referral: see Short Term Exposure Limit

stencil	Schablone, die	(eng.)
	The labelling of the silos was done with a stencil.	
sterilise, sterilize, to	keimfrei machen, sterilisieren <i>sterilize, to (AE)</i> Ultraviolet light was used to sterilize (i.e. to completely elim microorganisms) the tools.	( <i>pharm</i> .) ninate all
STEV	zulässige Kurzzeitbelastung, die Acronym/Abbreviation referral: see STEL	(chem.)
sticky	klebrig The first adhesives were natural sticky substances such as plant resin	( <i>chem</i> .) s or saps.
stimulant	analeptisch, stimulierend, Stimulant Caffeine $(C_8H_{10}N_4O_2)$ and nicotine $(C_{10}H_{14}N_2)$ are two common stim	( <i>pharm</i> .) Julants.



273

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stirrer tank, stirrer vessel, stirred tank, stirred vessel	Rührkessel, der	(chem. eng.)
	The key process variables of the stirrer tank (residence time, volume pressure, species concentrations and heat transfer coefficients) we the kick-off meeting.	-
stock solution	Stammlösung, die A stock solution is generally a concentrated solution which will actual use. Their use helps to save preparation time and storage they can improve the accuracy of an analysis.	
stock(s)	Aktie(n), die At company A, employees are entitled to free stock.	(econ.)
stockpile	Halde, die; stapeln The sulphur stockpile was ready for transportation.	(chem.)
stoichiometric	stöchiometrisch The air/fuel eqivalence ratio lambda is 1 for a stoichiometric mi	( <i>chem</i> .) xture.
stop valve	Absperrhahn, der; Absperrventil, das; Absperrarmatur, die The stop valve was designed for a pressure of 100 bar.	(chem. eng.)
stopcock	Absperrhahn, der The stopcock made from glass did not move any more, becaus hydroxide had reacted with the glass to form sodium silicate.	( <i>chem. eng.</i> ) se the sodium
stopper	Stopfen, der He used a ground glass stopper to temporarily seal the flask.	(pharm.)
stopper plug	Stöpsel, der The stopper plug in the drain was not tight any more due to cor	( <i>chem</i> .) rosion.
stopping device	Arretiervorrichtung, die He placed a stopping device in front of the door to prevent it fro	( <i>chem</i> .) om closing.

storage	Lagerung, die(general)The storage of combustible material has to meet certain regulations.
stove	Ofen, der; Zimmerofen, der(chem.)In order to store the heat, the stove was surrounded by soapstone.
STP	(chem.) Acronym/Abbreviation referral: see standard temperature and pressure
strainer	Abscheider, der; Schmutzfänger, der(eng.)The strainer was blocked with rust particles.
streak	Schliere, die(general)She carefully tried to remove the streaks from the lens.
strength	Stärke, die(eng.)The strength of the connection was overestimated.
stress	mechanische Beanspruchung, die ( <i>eng.</i> ) In material science, stress can be defined as the average amount of force exerted per unit area (SI unit: Pa).
stress cycle	Lastwechselfolge, die(eng.)She investigated the effect of stress cycle frequency upon fatigue and corrosionof the alloy.
stress strain curve	Spannungs -Dehnungskurve, die; Kraft-Dehnungskurve, die ( <i>eng.</i> ) The stress strain curve of a material shows the relationship between stress (based on the applied force), and strain (derived from the deformation of the sample such as elongation, compression or distortion). Ductile and brittle materials behave differently.
stress whitening	Weißbruch, der(chem. eng.)The formation of white areas in a deformation process of a polymer article, created by microvoids in the material, is called stress whitening. It is especially critical for polypropylene.
stretch, to	dehnen, recken(eng.)The rubber ribbon was stretched until it tore.

strip chart	Meßstreifen, der	(chem.)
	The housewife used a stripchart to determine the hardness of her wat	er.
strip, to	abreichern By steam stripping, polycyclic aromatic hydrocarbons (PAH) can be from harbor soils.	( <i>chem</i> .) removed
stroke	Takt, der	(eng.)
	The car has got a 4 stroke engine.	
structural change	Gefügeänderung, die The metastable phase underwent a structural change when it was heat	( <i>chem</i> .) ted.
stud	Bolzen, der; Gewindebolzen, der; Dübel, der	(eng.)
	The mechanic was looking for a suitable stud.	-
study	Studie, die A feasibility study typically ends up at a cost estimation of +/- 40%.	(general)



276

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stuff	Dinge, die (ugs.)(generalFoodstuff production has to follow several strict regulations.	l)
stupor	Stupor, der; Benommenheit, die(medVitamin D deficiency can cause stupor.	.)
subcontractor	Unterauftragnehmer, der(econThe work of subcontractors is difficult to assess.	.)
submarine	U-Boot, das (eng On submarines, $CO_2$ has to be filtered out of the air.	.)
submerged	unter Wasser ( <i>eng</i> After the heavy rainfalls, parts of the cellar were submerged in water.	.)
submersible pump	Tauchpumpe, die(chem. engA submersible pump is a pump which has a hermetically sealed motor.	.)
subsidiary	Tochterunternehmen, das(econForeign subsidiaries are often controlled by the headquarters.	.)
subsidy	Subvention, die; Zuschuss, der; Beihilfe, die (econ Extensive subsidies were granted for companies who decided to move to the region.	
substance	Stoff, der(chemTo the over 81 million organic and inorganic chemical substances that haveCAS Registry Number (CASRN), approx. 4,000 new substances are added evenday.	a
substation	Schaltanlage, die; Umspannwerk, das(engThe substation was placed next to the production hall.	.)
succinic acid	Bernsteinsäure, die(chemSuccinic acid, a dicarboxylic acid, has the formula $C_4H_6O_4$ .	.)

succussion	Erschütterung, die	(pharm.)
	"Dynamisation" or "potentisation" is a process used by home	opaths whereby a
	remedy is diluted with alcohol or water and then vigorously sl	
	strikes against an elastic body, which is called "succussion".	
suck off, to	absaugen	(eng.)
	In welding processes, fumes have to be sucked off.	-
suction filter,	Nutsche, die; Büchnertrichter, der	(chem.)
Büchner funnel,		
Buechner funnel		
	A Büchner funnel is used for suction filtration with a piece	of filter paper as
	filter medium.	
suction pressure	Saugdruck, der	(eng.)
	The pump can provide a suction pressure of 200 mbar.	
sulfuric acid	Schwefelsäure, die	(chem.)
	The largest fraction of the more than 150 million tonnes/year o	f sulfuric acid that
	are produced worldwide is used for ore processing and fertilize	er manufacturing.
sulphur	Schwefel, der	(chem.)
-	sulfur (AE)	
	Acronym (engl.): S	
	Acronym (dt.): S	
	Thioethers (R-S-R') are the sulfur equivalents of ethers (R-O	-R'). While ethers
	are relatively stable, thioethers are easily oxidized to the sulf	foxides (R-S(=O)-
	R'), which can be further oxidized to sulfones $(R-S(=O)_2-R')$ .	
sundry costs	diverse Kosten, die; sonstige Kosten, die	(econ.)
	The cost estimation did not consider sundry costs.	
superconductor	Supraleiter, der	(sci.)
	Transformers, power storage devices, magnetic levitation de	vices and motors
	are promising future applications of superconductors.	
supercooled	unterkühlt	(chem.)
	Water can be supercooled to -42°C.	

supercritical	überkritisch	(chem.)
	$\text{CO}_2$ behaves as a supercritical fluid above its critical temper	ature of 31.1°C and
	its critical pressure of 72.9 bar. When used as a solvent, sup	percritical CO ₂ does
	not denature most substances due to the low temperatures	involved.
superficial	oberflächlich	(general)
	He took a superficial look at the article.	
superfund (AE)	US-Gesetz zur Beseitigung von Umweltschäden, das	(chem. eng.)
	Superfund is the common name for CERCLA (Comprehen	sive Environmental
	Response, Compensation, and Liability Act).	
superheated	überhitzt	(chem.)
	Superheated water is liquid, pressurized water at temper	atures between the
	boiling point (100°C) and the critical temperature (374°C).	
superheated steam	überhitzter Dampf, der	(chem.)
	Superheated steam and liquid water cannot coexist und equilibrium.	er thermodynamic



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superheater	Überhitzer, der(eng.)A superheater in a boiler increases the capacity of the plant and reduces the steam consumption of the steam turbine.
supernatant	obenstehend; Überstand, der(chem. eng.)Traces of mineral oil were discovered in the supernatant.
supersaturate, to	übersättigen(chem.)Both liquids and gases can become supersaturated. An example are scuba divers'tissues that become supersaturated with $N_2$ . If the divers ascend too fast, the $N_2$ forms bubbles, resulting in decompression sickness.
supersonic	überschall-(eng.)The Concorde was a commercial supersonic jet.
supplier	Lieferant, der (econ.) Suppliers, customers, shareholders and employees are some of the relevant stakeholder groups of a corporation.
supply line, supply pipe, feed, forerun	Vorlauf, der(chem. eng.)The supply line was manufactured from stainless steel.
suppository	Zäpfchen, das (pharm.) Suppositories can be based on a greasy substance such as cocoa butter, in which the active ingredient and other excipients are dissolved. They can also be made from a water soluble base such as polyethylene glycol (PEG). Suppositories are used for rectal administration.
surface	Oberfläche, die (chem.) SERS (surface enhanced Raman spectroscopy) is a technique to gain information about the surface of a sample.

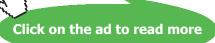
surface tension	Oberflächenspannung, die (eng.) It is surface tension and not buoyancy that prevents a water strider from sinking.
survey	Untersuchung, die; Umfrage, die; Befragung, die (general) She did not participate in the survey because she felt that she would not stay anonymous.
susceptible	anfällig (general) Steel under water is susceptible to corrosion.
suspension point	Aufhängepunkt, der(eng.)The suspension point was chosen to balance the load.
sustainable	nachhaltig(general)The engineer did not consider the work instruction for operators a sustainable solution to prevent the incident from reoccurring.
sweetener	Süßstoff, der (pharm.) Aspartame (Aspartyl-phenylalanine-1-methylester) is an artificial sweetener. The compound is a methyl ester of the dipeptide of aspartic acid and phenylalanine, 2 amino acids. Phenylalanine is an a-amino acid with the formula $HO_2CCH(NH_2)$ $CH_2C_6H_5$ .
switch	Schalter, der(eng.)The woman activated the switch.
swivel arm	Schwenkarm, der(eng.)The swivel arm proved to be a major improvement.
synthesis	Synthese, die(chem.)The dream of many organic chemists is the synthesis of a new blockbuster drug.
synthon	Synthon, das; Synthesebaustein, der(chem.)Carbon dioxide, carbon monoxide and cyanide are C1 synthons. Acetylene and acetaldehyde are C2 synthons.
syringe	Spritze, die (pharm.) A glass syringe can be used to inject small samples (1-10 µl) into a gas chromatograph or mass spectrometer.

T&C		(econ.)
	Acronym/Abbreviation referral: see general terms and conditions	
T&G		(eng.)
	Acronym/Abbreviation referral: see tongue and groove	
ТА		(chem.)
	Acronym/Abbreviation referral: see turnaround	
tablet	Tablette, die	(pharm.)
	A tablet is a mixture of active substances and excipients (e.g. binders	s, flavours,
	pigments) compressed to a small solid.	
tabular	tafelförmig	(eng.)
	Talc is composed of tabular particles.	
tag	Aufkleber, der; Etikett, das; Bezeichnungsschild, das; Tag, der (c	hem. eng.)
	In a chemical plant, a tag is a unique code defining the location and	d function
	of a physical component in an installation.	



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tagging	Kennzeichnung, die; Identifizierung, die The project team started tagging of the plant.	(chem. eng.)
tail fin	Schwanzflosse, die; Heckflosse, die Airlines have their logos painted on the tailfins of their aircraft.	(eng.)
tailrace	Unterwasser, das; Unterwasserkanal, der The race bringing water to the water wheel is called headrace. The water away from the wheel is the tailrace.	( <i>eng</i> .) one carrying
talc	Talk, der; Talkum, das In plastics compounds, talc influences the shrinkage behaviour of	( <i>chem</i> .) T the product.
tamper proof seal	Entnahmesicherung, die A tamper proof seal on a tablet packaging prevents unnoticed ope	(pharm.) ening.
tamper-resistant	manipulationssicher, fälschungssicher Packages which cannot be resealed are considered tamper-resistar	( <i>pharm</i> .) nt.
tantalum	Tantal, das <i>Acronym (engl.): Ta</i> <i>Acronym (dt.): Ta</i> Unlike gold, tantalum is not dissolved by aqua regia.	(chem.)
tap	Hahn, der The water tap was dripping for months before it was repaired.	(eng.)
tapped coil	Abzweigspule, die; Anzapfspule, die The transformer has 2 tapped coils made of copper.	(eng.)
tapped hole	Gewindeloch, das The tapped hole was suitable for M6 bolts.	(eng.)
tar	Teer, der Tar is obtained by destructive distillation of organic matter s petroleum or wood, often as a byproduct. Destructive distillation i of pyrolysis carried out in a distillation apparatus where the vola are collected and the tar remains in the bottom.	is the process

tar pitch	Pech, das Pitch that is made from petroleum is called bitumen.	(chem.)
tare	Tara, die The tare is the weight of an empty container, vessel or vehicle. minus tare = net weight (weight of the goods loaded).	(eng.) Gross weight
tartaric acid	Weinsäure, die Tartaric acid, which is one of the main acids in wine, is added to s an antioxidant. $C_4H_6O_6$ is chiral, meaning that it has molecules w be superimposed on their mirror-images.	
task force	Arbeitsgruppe, die The task force did not have a clear mandate.	(econ.)
tax	Steuer, die Value added tax is between 10 and 30% in most countries.	(econ.)
TBR	Acronym/Abbreviation referral: see trickle bed reactor	(chem. eng.)
тсо	Acronym/Abbreviation referral: see total costs of ownership	(econ.)
technical	technisch For technical reasons, the throughput was reduced.	(eng.)
technical guidelilne	technische Richtkonzentration, die	(chem.)
concentration	<i>Acronym</i> ( <i>dt</i> .): <i>TRK- Wert, der; TRK, die</i> The technical guidance concentration for butadiene is 5 ppm.	
technician	Techniker(in), der (die) The technican could fix the problem with the transducer easily.	(eng.)
technique	Technik, die Filtration is a widespread sample purification technique.	(eng.)

technology	Technologie, die	(eng.)
	Wireless communication is an emerging technology.	
tee	T-Stück, das	(general)
	A legal golf tee must not be longer than 4 inches (~102 mm), and	it must not
	indicate the line of play or influence the movement of the ball.	
telemetry	Fernmessen, das; Telemetrie, die	(eng.)
	Telemetry is used in industrial production plants.	
temper, to	tempern	(eng.)
	Like annealing, tempering is a heat treatment technique for metals	and alloys.
	Steel can be tempered to render it more tough by transforming brittle	martensite
	into bainite or a combination of ferrite and cementite.	
template	Vorlage, die	(general)
	Using a template can save a considerable amount of time.	
temporary	befristet, temporär, kurzzeitig	(general)
	The temporary work permit was already expired.	-



285

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tender	Gebot, das; Angebot, das (nach einer Ausschreibung) After the invitation to bid, 5 tenders were received.	(econ.)
tendering, call for bid	<b>s</b> Ausschreibung, die The tendering (call for bids) process took 3 months.	(econ.)
tensile	dehnbar, zugbeanspruchbar The instrument measures tensile deformation.	(eng.)
tension	Spannung, die Tension, the pulling force exerted by a cable or chain, is measured in the SI unit of force [kgm/s ² ]. It always acts parallel to the string by w applied.	
teratogenic	teratogen, reproduktionstoxisch, reprotoxisch, fortpflanzungsgefährdend, fruchtschädigend The following chemicals are known or suspected teratogenic substat butadiene, cadmium oxide, ethyl benzene, ethylene glycol, and styrer	
terpolymer	Terpolymer, das; Terpolymerisat, das ( <i>chem</i> .) A terpolymer consists of polymer chains composed of three distinct m such as vinyl chloride (CH ₂ =CHCl), vinyl acetate (CH ₃ COOCH=C maleic acid (COOH -CH=CH-COOH).	
test piece	Prüfkörper, der Test pieces that were produced under varying conditions will distort th	( <i>eng</i> .) ne results.
test tube	Reagenzglas, das Test tubes can be found in most laboratories.	(chem.)
tetrahedron	Tetraeder, das A tetrahedron is a triangular pyramid with a dihedral angle of 70. composed of 4 triangles.	( <i>chem</i> .) 53°. It is
tetravalent	vierwertig Carbon is a tetravalent atom.	(chem.)

thaw, to	auftauen (chem.) If the Russian permafrost soil started to thaw, methane would be liberated. Permafrost is defined as soil at or below the freezing point of water (0°C, 32°F) for at least two years.
theoretical plate	theoretischer Boden, der(chem. eng.)In order to improve the separation, the number of theoretical plates in the column should be increased.
theory	Theorie, die(sci.)A good theory describes a model which is derived from experimental data.
thermocouple	Thermoelement, das(eng.)The thinner a thermocouple is constructed, the faster its response time can be.
thermoplastics	Thermoplaste, die(chem.)Thermoplastics are polymeric materials without crosslinking. They can be brought into a defined shape in the liquid state (melt) by e.g. injection moulding or extrusion.
thermoset	Duromer, das(chem.)Thermosets are crosslinkable or crosslinked polymeric materials that, unlike thermoplastics, cannot be formed in the molten state.
thermowell	Schutzrohr, das; Wärmesonde, die(eng.)A temperature sensor sitting in a thermowell generally has a slower responsethan an in-situ temperature sensing device.
thesis	Dissertation, die(sci.)He wrote a cumulative thesis composed of 8 journal articles.
thickening	Eindicken, das (chem.) In cooking, starch is a common thickening agent. Starch, a carbohydrate with the formula $(C_6H_{10}O_5)_n$ , is a polysaccharide.
thin fluid, low viscosity	dünnflüssig (chem.) The viscosity of water at 20°C is $1 \times 10^{-3}$ Pa·s. Compared to glycerol (viscosity of 1.5 Pa·s), water is a low viscosity liquid. The study of viscosity is known as rheology.

thread	Gewinde, das; Faden, der The droplet was suspended on a thin thread.	(eng.)
thread gauge	Gewindelehre, die The thread gauge did not fit, because it belongs to a different stan	(eng.) Idard.
three way stopcock	Dreiwegehahn, der He could not find a supplier for a three way stopcock made from	( <i>chem</i> .) Teflon [™] .
three way valve	Dreiwegeventil, das; Dreiwegehahn, der Three-way valves have three ports.	(chem. eng.)
threshold	Schwelle, die Below the threshold current, a laser does not emit light.	(eng.)



threshold limit value, maximum allowable concentration	zulässige Höchstbelastung, die; TLV-Wert, der	(chem.)
	<ul> <li>Acronym (engl.): TLV</li> <li>TLV is the airborne concentration of a substance below which no advin people is observed. One can distinguish between</li> <li>TLV-C (ceiling limit, concentration that should not be exceeded instantaneously).</li> <li>TLV-STEL (short term exposure limit, maximum concentration continuous 15-minute exposure period).</li> <li>TLV-TWA (time-weighted average, concentration for a normal 8 work day or 40-hour work week).</li> </ul>	even for a
threshold value	Schwellenwert, der The threshold value that the oxygen sensor can detect is 0.5%.	(eng.)
throat lozenge	Hustenbonbon, das A throat lozenge is a small, medicated candy to soothe irritated tiss throat, e.g. from an influenza.	( <i>pharm</i> .) sues of the
throttle, to	drosseln In order to slow down the polymerization reaction, the feed of the ca throttled.	( <i>eng</i> .) atalyst was
through-hole	Durchgangsbohrung, die In contast to a blind hole, a through-hole goes all the way through the	( <i>eng</i> .) e substrate.
throughput	Durchsatz, der; Ausstoß, der ( <i>c</i> The throughput of the plant was limited by the raw material convey	<i>hem. eng</i> .) ing.
thrust	Schub, der The thrust of the engine is 135 kN.	(eng.)
tie rod	Zugstange, die; Verbindungsstrebe, die The spokes of bicycle wheels are tie rods.	(eng.)
tie-in point	Einbindepunkt, der (c The tie-in points for cooling water and instrument air were not sho layout diagram.	<i>hem. eng</i> .) wn on the

tighten, to	festziehen, abdichten(eng.Screws on vibrating machinery have to be tightened from time to time.	)
tile	Fliese, die(eng.Tiles break easily when there is a cavity below them.	)
tilted	geneigt ( <i>eng.</i> The water ran down the tilted board.	)
Time Weighted Average	Durchschnittswert, der(chem.Acronym (engl.): TWATWA is the average amount of an agent's concentration over a specified periodof time, usually 8 hours.	
tin	Zinn, das(chem.Acronym (engl.): SnAcronym (dt.): SnTin (atomic number 50) is the element with the greatest number of stable isotopes (ten). There are 28 additional unstable isotopes.	
tin can, tinned can	Weißblechdose, die (eng. A tin can combines the physical strength and relatively low price of steel with the corrosion resistance of tin. Similar properties can be reached by aluminium though.	h
tin pest	Zinnpest, die (chem. Below 13.2 °C, pure tin transforms from the allotrope of white tin (ß modification, ductile) to grey tin ( $\alpha$ -modification, brittle). Eventually, i decomposes to powder, which is known as tin pest.	-
tissue	Gewebe, das ( <i>eng.</i> Tissue paper is a special thin, translucent paper that is used for wrapping variou items.	
titer	Titer, der; Normalfaktor, der(chem.The titer deviated by 12% and had to be discarded.	)
titrimetric standard	Urtiter, der(chem.Benzoic acid ( $C_6H_5$ COOH) was used as titrimetric standard.	)

TLV		(chem.)
	Acronym/Abbreviation referral: see threshold limit value	
toe	Acronym/Abbreviation referral: see tonne of oil equivalent	(eng.)
ton	Tonne, die	(eng.)
	The chemicals were transported in a plastic ton.	
tongue and groove, key and slot	Nut und Feder, die	(eng.)
key und slot	Acronym (engl.): T&G	
	Tongue and groove joints are common for fitting together boards	s of wood, e.g.
	for a parquet floor.	
tonnage	Raumgehalt, der; Tonnage, die; Frachtraum, der	(general)
	Harbour dues are generally based on tonnage.	

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tonne of oil equivalent	Rohöleinheit, die	(eng.)
	Acronym (engl.): toe	
	Acronym (dt.): RÖE	
	The tonne of oil equivalent (toe) is a unit of energy: It correspo	nds to 41.87 GJ
	or 11.63 MWh.	
tonne, metric	Tonne, die (1000 kg)	(eng.)
tonne	Acronym (engl.): t, MT	
	Acronym (dt.): t	
	The tonne of trinitrotoluene (TNT, $C_6H_2(NO_2)_3CH_3$ , 2,4,6-Trinused as a proxy for energy.	nitrotoluene) is
tool	Werkzeug, das	(eng.)
	The workers had brought along their own tools.	-
toothed wheel	Zahnrad, das	(eng.)
	The toothed wheel could withstand a torque of 500 Nm.	
torque	Drehmoment, das	(eng.)
•	The engine has a torque of 50 Nm at 2,000 rpm.	
total costs of ownership	Gesamtkosten während des Lebenszyklus, die	(econ.)
• · · · · · · · · · · · · · · · · · · ·	Acronym (engl.): TCO	
	In an investment project, it is advisable to judge different vendo total costs of ownership of their equipment.	ors based on the
toxic	giftig	(chem.)
	Botulinum toxin, a protein which is produced by the bacterin	
	botulinum, is one of the most toxic naturally occurring substar	nces.
trace analysis	Spurenanalyse, die	(chem.)
	In trace analysis, detection limits below 1 $\mu$ g/kg (1 ppb) can achieved.	sometimes be
trace constituent	Spurenbestandteil, der	(chem.)
	Ozone $(O_3)$ is a trace constituent of the atmosphere.	

trade fair	Messe, die(eng.)A trade fair is a good opportunity to get an overview about competitors.	
trademark	Handelsmarke, die; Schutzmarke, die(econ.)Trademark infringements can lead to serious legal action.	
trailer	Anhänger, der(econ.)A trailer is generally an unpowered vehicle pulled by a powered vehicle.	
transducer	Messumwandler, der; Messumformer, der; Signalumwandler, der ( <i>eng.</i> ) A transducer is an electric or electronic device that transforms energy from one manifestation into another, e.g. pressure into a current signal.	
transesterification	Umesterung, die (chem.) Transesterification is the process of exchanging the alcohol group of an ester by a different one according to: $R'OH+R'COOR>R''OH+R'COOR$ . The process is used in the synthesis of polyesters, in which diesters undergo transesterification with diols to form macromolecules. For example, dimethyl terephthalate and ethylene glycol react to form polyethylene terephthalate (PET) and methanol (CH ₃ OH).	-
transient	kurzlebig (chem.) Radicals are transient species.	
transition metal	Übergangsmetall, das ( <i>chem.</i> ) Many interesting properties of the transition metals are the result of their partly filled d subshells.	
translucent	durchscheinend(eng.)Thin metal films are translucent.	
transmission	Übertragung, die (eng.) Power transmission at high voltage is associated with lower losses than at medium voltage.	
transmission gear	Übersetzungsgetriebe, das(eng.)The transmission gear accounts for 25% of the total weight of his car.	

transmitter	Fühler, der; Geber, der; Messwertgeber, der The pressure transmitter seemed to be defect.	(eng.)
transshipment, transhipment	Umladung, die	(econ.)
transnipitent	Negotiations about a new transshipment center in China failed.	
trial	Versuch, der	(eng.)
	The trials did not prove his theory.	
triangular file	Dreikantfeile, die To finish the corners, she used a triangular file	(eng.)
	To finish the corners, she used a triangular file.	
trickle bed reactor	Rieselbettreaktor, der Acronym (engl.): TBR	(chem. eng.)
	A TBR is a three-phase reactor that consists of flow of liquid and g bed of catalyst. It is often used in the petroleum industry for hy- of oils.	

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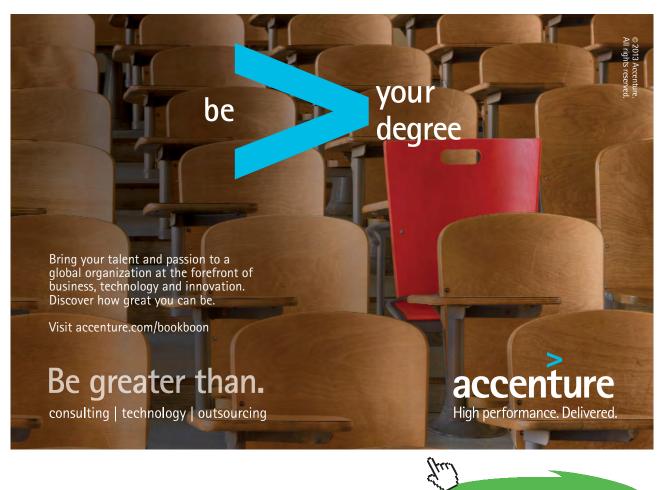
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tripod	Dreibein, das (en The photographer was looking for his tripod.	ıg.)
tripotic	dreiprotonig ( <i>cher</i> Citric acid (2-hydroxypropane-1,2,3-tricarboxylic acid, $C_6H_8O_7$ ) is a we organic acid. It is triprotic.	
trituration	Zerreibung, die (phare Trituration, a process in homeopathy, is the grinding of powders in a mor with a pestle.	
trityl	Trityl, das (cher In organic chemistry, a trityl group is a triphenylmethyl group $Ph_3C$ (examp triphenylmethyl chloride = trityl chloride).	
troy ounce	Feinunze, die(enAcronym (engl.): ozt, oz (tr)One troy ounce (ozt) weighs 31.10g, which is approx. 10% more than to avoirdupois ounce (oz), which is 28.35 g.	-
truncated cone	Kegelstumpf, der (so The foundation of the building looks like a truncated cone.	ci.)
tubular heat exchanger	Rohrbündelwärmeaustauscher, der ( <i>chem. en</i> The tubular heat exchanger could be cleaned faster than the previously install plate heat exchanger.	U U
tungsten	Wolfram, das(cherAcronym (engl.): WAcronym (dt.): WOf all pure metals, tungsten has the highest melting point with 3422°C.	n.)
turbid	trüb (en The solution is passed through a filter to remove the turbid appearance.	ıg.)
turbulence	Wirbel, der; Turbulenz, die (en The Reynolds number describes the transition from a laminar to a turbule flow.	0

turn key, turnkey	schlüsselfertig(chem. eng.)A turn key installation of a (chemical) plant is a lump sum contract under which the contractor engineers, delivers and installs the facility until it is ready for operation.
turnaround	Turnaround, der; Abschaltung, die; Shutdown, der; Revision, die ( <i>chem. eng.</i> ) <i>Acronym</i> ( <i>engl.</i> ): <i>TA</i> A turnaround is a scheduled stop of a plant for maintenance purposes. The plant is brought to a safe status, including making it gas -free to allow work in relevant areas.
turnbuckle	Spannschraube, die; Kettenspanner, der; Spannvorrichtung, die(eng.)A turnbuckle is a device for adjusting the tension or length of ropes and cables.
turnover	Umsatz, der(econ.)The company's turnover quadrupled within 2 years.
turnover rate	Lagerumschlagszeit, die(econ.)The turnover rate could be accelerated from 40 to 25 days.
turnstile	Drehkreuz, das(general)A turnstile cannot be used as an emergency exit.
tuyère	Windform, die; Blasdüse, die(chem. eng.)Blast furnaces have several tuyères through which the hot blast is injected into the furnace. Tuyères are usually made from copper (melting point 1084°C) and cooled by a water jacket.
TWA	(chem.) Acronym/Abbreviation referral: see Time Weighted Average
tweezers	Pinzette, die(sci.)The scientist carefully picked up the sample with his tweezers.

twenty-foot container,	20 Fuss Container, der	(eng.)
20-ft container		
	The capacity of a container ship is measured in Twenty-foot Equivalent Unit (TEU), which is the number of standard 20-foot containers that it can carry. One 20-ft container measures $20 \times 8.0 \times 8.5$ feet (6.1 × 2.4 × 2.6 m ³ ). Most	
	containers used today measure 40 feet (12 metres) in length.	
twist	Drall, der	(eng.)
	An inlet valve is designed to give some twist to the gas entering the	ne combustion
	chamber.	
UEL		(chem.)
	Acronym/Abbreviation referral: see upper explosive limit	
UL		(chem. eng.)
	Acronym/Abbreviation referral: see Underwriters Laboratories	-
unambiguous	eindeutig	(general)
	Asbestos was unambiguously proven to be a cancerogen.	



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unbreakable	bruchsicher (eng.) Laboratory glassware made out of virtually unbreakable glass would be very handy.
undergraduate	Grundstudium- (sci.) The lecture was easy to understand for undergraduate students.
underground mining	Bergbau untertage, der (eng.) Underground mining is carried out in depths exceeding 3,700 meters, for instance in the Savuka gold mine in South Africa.
underpressure	Unterdruck, der ( <i>eng.</i> ) Silos are normally designed to withstand an underpressure of 10 mbar.
Underwriters Laboratories	Underwriters Laboratories (general)
	Acronym (engl.): UL UL is an American product safety testing and certification organization. It evaluates products and materials for compliance to specific requirements, and permits acceptable products to carry a UL certification mark, as long as they remain compliant with the standards. Such products are said to be "UL Listed". UL in the US can be compared to the TÜV in Germany.
undiluted	unverdünnt ( <i>chem.</i> ) The student poured undiluted glycerine into the flask.
uniform	einheitlich (general) The company follows an engineering policy so that all plants have uniform safety systems.
uninterrupted power supply, uninterruptile power supply	unterbrechungsfreie Stromversorgung, die (eng.)
power suppry	Acronym (engl.): UPS Acronym (dt.): USV The UPS was designed to supply power for 15 minutes.
union	Gewerkschaft, die(econ.)Unions in Scandinavia are very powerful.

unit	Einheit, die	(chem.)
	The SI unit of length is meter (m).	
unit operation	Verfahrensschritt, der; Unit Operation	(chem.eng.)
	Mixing, crystallisation, adsorption and drying are unit operations.	
United States Adopted Name	United States Adopted Name	(pharm.)
	Acronym (engl.): USAN Acronm (dt.): USAN	
	United States Adopted Names are unique nonproprietary names pharmaceuticals marketed in the United States. An example is p (INN), which is called acetaminophen (USAN) in the US.	÷
unload, to	entladen, löschen (Ladung) The cargo was unloaded from the ship.	(eng.)
unskilled worker	Hilfsarbeiter, der By following training courses, the unskilled worker qualified himself job.	( <i>general</i> ) f for a better
untight	undicht Untight pipelines can contaminate the environment.	(eng.)
upmanning	Personalaufstockung, die The additional orders of the last months necessitated upmanning by 10%.	( <i>econ</i> .) of the plant
upper explosion limit	Acronym/Abbrevation referral: see upper explosive limit	(chem.)
upper explosive limit	obere Explosionsgrenze, die <i>Acronym (engl.): UEL</i> <i>Acronym (dt.): OEG</i> The UEL of hydrogen is ~77%.	(chem.)
upright	senkrecht The steel structure was brought into an upright position.	(eng.)

UPS		(eng.)
	Acronym/Abbreviation referral: see uninterrupted power supply	
upstream	vorgelagert, vorgeschaltet,	(chem. eng.)
	flussaufwärts	
	Fractionated distillation occurs upstream of fuel blending.	
urea	Harnstoff, der	(chem.)
	Urea, $NH_2CONH_2$ , is used as a raw material for the production	of melamine.
uric acid	Harnsäure, die	(chem.)
	Uric acid, $C_5H_4N_4O_3$ , is a heterocyclic compound.	
USAN		(pharm.)
	Acronym/Abbreviation referral: see United States Adopted Name	-
USCSB		(chem.)
	Acronym/Abbreviation referral: see CSB	. ,





used paper	Altpapier, das(general)In many countries, used paper from households is collected and recycled.
utilities	Betriebsmittel, die(chem. eng.)Typical utilities in a plant are water, compressed air, nitrogen, electricity and steam.
utility boiler	Dampfkessel der Energieerzeuger, der; Dampfkessel, der(chem. eng.)Utility boilers are used to produce steam.
value	Wert, der(general)The value reported by the lab confirmed the first analysis.
value creation	Wertschöpfung, die (econ.) In order to offer attractive products, the value creation of a company's customers has to be understood.
value engineering	Value Engineering, das; Wertanalyse, die (chem. eng.) By value engineering, the process could be simplified and the investment costs reduced by 5%.
valve	Ventil, das(chem. eng.)After the acquisition of the valve manufacturer, the quality of his parts improved.
valve seat	Ventilsitz, der ( <i>eng.</i> ) The valve seat is the surface against which the intake and exhaust valves of an internal combustion engine rest.
valve, instrument	Armatur, die(chem.)The instruments were labelled.
vanilla pod	Vanilleschote, die ( <i>chem.</i> ) <i>vanilla bean (AE)</i> Vanillin (4-hydroxy -3-methoxybenzaldehyde, C ₈ H ₈ O ₃ ) is contained in vanilla
vaporize, to vaporise, to	pods. verdampfen (chem.)
	<i>vaporize, to (AE)</i> To vaporize a substance, the heat of vaporization (latent heat) has to be supplied.

vapour	Dampf, der vapor (AE)	(chem.)
	Unrefined oil has a high vapour pressure due to the presence of subst propane.	ances like
vapour lock	Dampfblasensperre, die; Dampfsack, der <i>vapor lock (AE)</i>	(eng.)
	If normal diesel fuel is used in some aircraft engines instead of dangerous vapour locks in the fuel lines can occur.	kerosene,
vapour pressure	Dampfdruck, der vapor pressure (AE)	(chem.)
	According to Raoult's law, the vapor pressure of an ideal solution can be from the vapor pressure of each chemical component and the mole for the components present in the solution.	
variable costs	variable Kosten, die The target for this quarter was to cut the variable costs by 5%.	(eng.)
varnish	Lack, der A varnish is a transparent, hard, and protective film applied to w protection from environmental effects.	( <i>chem</i> .) vood as a
vendor package	Einheit des Lieferanten, die The air supply system should be bought as a complete vendor packag	(econ.) ge.
venom	Gift, das; Schlangengift, das The dose of a bee sting is approximately 0.1 mg of venom per "shot".	(chem.)
vent, to	belüften, entlüften ( <i>ch</i> The exhaust gases are vented outside the production hall.	nem. eng.)
ventilation	Entlüftung, die; Belüftung, die In production halls, natural ventilation is generally not sufficient.	(eng.)
venting	Entlüftung, die (ch Venting of explosion panels has to be directed towards unconfined s	nem. eng.) pace.

## **Chemical Engineering Vocabulary**

vertigo	Schwindel, der; Schwindelgefühl, das Formaldehyde can cause coughing, dyspnea, headache and vertig	( <i>med</i> .) 0.
vessel	Gefäß, das The vessel was coated with enamel.	(eng.)
vial	Gefäß, das; Fläschchen, das The vial was filled with 100 ml of hydrochloric acid.	(pharm.)
vice	Schraubstock, der When it fell onto the floor, the vice left behind a big hole.	(eng.)
visbreak, to	cracken, aufspalten Peroxides can be used for the visbreaking of polymers.	(chem. eng.)
visbreaking	Cracken, das; Aufspalten der langkettigen Kohlenwasserstoffe bei der Rohölraffinierung, das Visbreaking is an important process to obtain olefins.	(chem. eng.)



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303

viscous	dickflüssig The reaction product was so viscous that it could hardly be removed fi flask.	( <i>eng</i> .) rom the
visible	sichtbar Visible light ranges from approx. 400 nm (red) to 800 nm (blue).	(chem.)
visualisation	Visualisierung, die; Anzeige, die <i>visualization (AE)</i> The visualisation in the control room was overloaded with information	(eng.) 1.
vitiate, to	verunreinigen The river was vitiated by various effluents.	(eng.)
vitiated air pipe	Abluftrohr, das The vitiated air pipe was 15 m long.	(eng.)
VOC	Acronym/Abbreviation referral: see volatile organic compounds	(chem.)
volatile	flüchtig Hexane is more volatile than octane.	(chem.)
volatile organic compounds	flüchtige organische Verbindungen	(chem.)
	Acronym (engl.): VOC Trees are an important biological source of VOC; it is known that th large amounts of VOC, especially isoprene (2-methyl-1,3-butadiene, $C_5$ terpenes ( $(C_5H_8)_n$ ).	•
volumetric standard	Urtiter, der (j A volumetric standard has to be stored in a way that its concentration is constant.	oharm.) remains
vortex	Wirbel, der; Strudel, der Directly downstream of the hydropower plant, strong vortices could be in the water.	( <i>eng</i> .) spotted

WACC	(econ.)
	Acronym/Abbreviation referral: see weighted average cost of capital
wage garnishment	Lohnpfändung, die (econ.)
	He tried to avoid wage garnishment by selling his car.
warehouse	Lager, das; Lagerhaus, das (econ.)
	The insurance company insisted on an upgrade of the fire protection system in
	the warehouse.
warpage	Verzug, der; Wölbung, die (eng.)
	Warepage is an undesired shape change of an injection-moulded article due to anisotropic shrinkage during cooling down.
warranty	Gewährleistung, die (econ.)
	For new products, consumers get a warranty for 2 years.
wash bottle	Waschflasche, die (chem.)
	The wash bottle was used to remove liberated HCl from the reaction.
washer	Dichtungsring, der; Beilagscheibe, die ( <i>eng</i> .)
	Washers are commonly used as spacers. Also, they distribute load more evenly.
waste heat	Abwärme, die (chem. eng.)
	Waste heat can be minimized by using cogeneration.
waste incineration	Müllverbrennung, die (chem. eng.)
	In a modern waste incineration plant, the flue gas treatment systems are more
	complex than the plant as such.
waste water	Abwasser, das (chem. eng.)
	Wastewater is a collective term for any water which has been contaminated by anthropogenic influence.
water gas	Wassergas, das (chem.)
	Water gas is a synthesis gas that contains carbon monoxide and hydrogen. It
	can be produced by passing steam over red-hot coke.

water jet	Wasserstrahl, der For water jet cutting, plain water jets and abrasive water jets that contain particles can be used.	( <i>chem</i> .) abrasive
water level, spirit level	Wasserwaage, die The bricklayer used a water level.	(eng.)
water repellent	wasserabweisend The wall was rendered water- repellent by a PVC coating.	(pharm.)
water softening	Wasserenthärtung, die Citric acid ( $C_6H_8O_7$ ) is used in soaps for water softening.	(pharm.)
waterproof, watertight	wasserdicht Standard concrete is not waterproof.	(chem.)
waterproofing	Imprägnierung, die; Imprägnieren, das; Wasserabdichtung, die Waterproofing of the basement was achieved by applying an HDPE m to the walls.	( <i>eng</i> .) embrane

wave	Welle, die (che Waves of electromagnetic radiation can travel through vacuum. They propag at the speed of light (299,792,458 m/s).	,
wave number	Wellenzahl, die (che In contrast to the wavelength, the wave number is directly proportional to energy of a photon. A wavelength of 10 $\mu$ m corresponds to a wave number 1000 cm ⁻¹ .	the
wavelength	Wellenlänge, die (che Acronym (engl.): Acronym (dt.):	em.)
	An acoustic wave in air of 500 Hz has a wavelength of 0.68 m, travelling at 3 m/s (20°C).	343
wear and tear	Verschleiß, der (en Wear and tear are excluded from vendor warranties.	ng.)
weathering	Verwittern, das (en Weathering has turned the wood surface to a greyish color.	ng.)
wedge	Keil, der(end)The door was arrested with a wedge.	ng.)
weighted average cost of capital		on.)
	Acronym (engl.): WACC The WACC is the minimum rate that a company needs to earn on its cap employed (which has different sources: debt and equity). It is the minim return that a company must earn in order to satisfy its creditors (debt) a owners (equity).	um
welding	Schweißen, das(endTo ensure a lasting connection, the steel pipes were welded together.	ng.)
well	Brunnen, der (en The landlord had the nitrate content in the water from his well measured.	ng.)

wet steam	Nassdampf, der Wet steam reduces the thermal efficiency of a steam engine.	(chem.)
wet, to	benetzen A hydrophobic surface is non-wettable for water.	(chem.)
white collar worker	Angestellter, der; Büroangestellter, der The fraction of white collar workers in his company is 35%.	(econ.)
wholesale customer	Großhandelskunde, der Wholesale customers typically benefit from different payment terms tha customers.	( <i>econ</i> .) an retail
winch	Winde, die Winches are used on cranes.	(eng.)
window of opportunity	Chance, die; Marktchance, die A window of opportunity for a certain product only exists for a limited of time.	( <i>econ</i> .) period
wine cellars	Kellerei, die (g CO ₂ accumulation is a risk in wine cellars.	general)
wing	Flügel, der Wings provide lift to an aircraft.	(eng.)
wire gauze	Drahtnetz, das The wire gauze was placed over the Bunsen burner.	(eng.)
wire mesh	Drahtgeflecht, das A fine metal and nylon wire mesh can be used as a water filter.	(eng.)
wiring diagram, wiring scheme	Schaltplan, der	(eng.)
withstand, to	The wiring diagram was printed on A3. standhalten Polypropylene (PP) can withstand higher temperatures than polyethyler	( <i>eng</i> .) ne (PE).

wood drill	Holzbohrer, der A wood drill is not suitable for concrete.	(eng.)
work in the field, to	im Außendienst tätig sein People working in the field need to have a driving licence.	(econ.)
workers' representative	e Betriebsrat, der Last year, the company elected a workers' representative.	(econ.)
workforce	Belegschaft, die Our workforce is 50 men strong.	(econ.)
working experience, work experience	Arbeitserfahrung, die	(general)
	He has gained most of his working experience abroad.	
write off, to	abschreiben After the fire, the total inventory had to be written off.	(econ.)
year to date	seit Jahresbeginn <i>Acronym (engl.</i> ): <i>YTD</i> After the fire, the total inventory had to be written off.	(econ.)
yield stress	Streckgrenze, die After surpassing the yield stress, a given material will begin to deform Some of this deformation is permanent.	( <i>eng</i> .) plastically.
YTD	Acronym/Abbreviation referral: see year to date	(econ.)
zinc	Zink, das <i>Acronym (engl.): Zn</i> <i>Acronym (dt.): Zn</i> Zinc oxide is a commonly used white pigment.	(chem.)