BILTON LEDON
TECHNOLOGY

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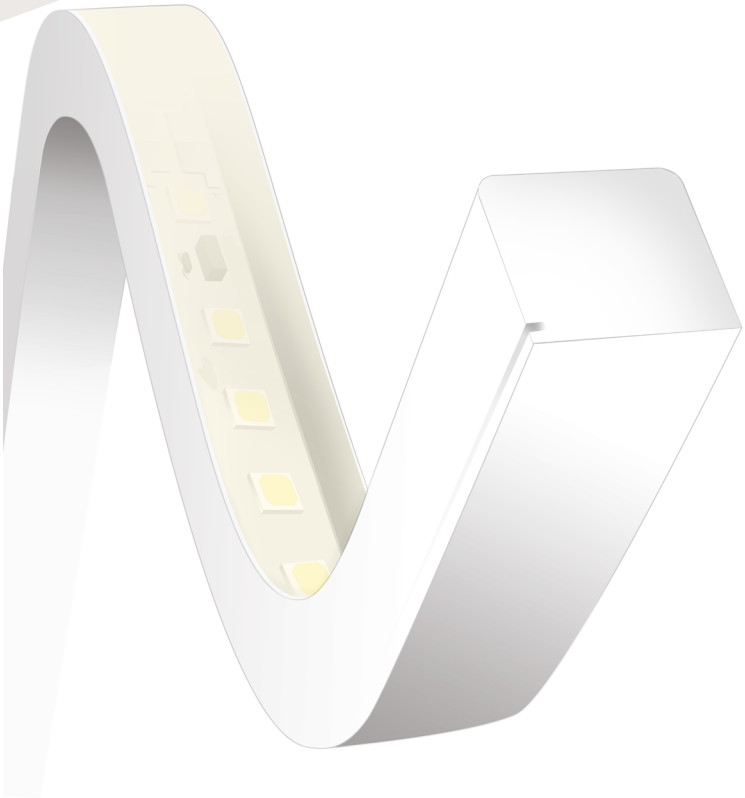
Technical Datasheet

BILTON AIR



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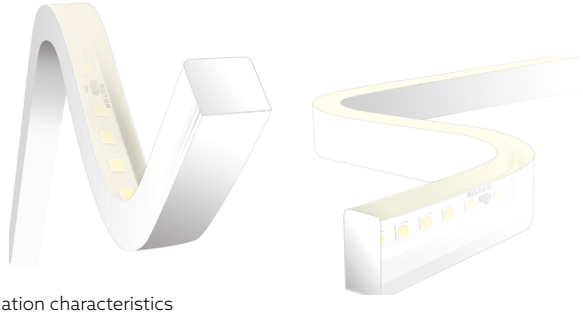
HIGHLIGHTS
BILTON AIR



// **Very homogeneous** photograph with diffuse radiation characteristics
// **Wave or curved bendable** with a radius of curvature up to 10 cm and thus ideally suited for organically shaped light bands
// **High luminous flux output** (up to 850 LM/m)
// Available in a wi**de range of light colours**: different colour temperatures, colour-rich RGB
// **Excellent aging and Weathering behavio**r (no yellowing, no brittleness)
// **Closed plastic coat** made of high quality silicone with unique material properties and the following highlights:

/ High resistance to almost all chemicals, especially alkalines, acids and salts

/ Highly resistant to UV and ozone

/ Stable against oil vapours

/ halogenfrei

/ High temperature range from-20 °c to more than + 40 °c

/ High mechanical form stability

/ High temperature resistance

// Degree of protection – **IP Rating - IP67**
// **Dirt resistant surface** due to special SBAS coating
// BILTON Air is **freely configurable** when installed in the respective lighting application
// **Customer-specific coat geometries** can also be realized according to customers , needs.

With these features, BILTON air enables highly attractive applications of linear led bands for indoor and outdoor use:
// In the interior area, it is mainly the light-technical properties with which both direct and efficient indirect lighting can be realized. The possibilities for bending and wave-shaped flexing can be used to realize demanding lighting scenes.
// In the outdoor area, the unique material properties of the light-technical characteristics are the basis for unrivalled ageing and Weathering behavior. This even under challenging conditions, as can be expected for example in the application in ship design

// Made in Europe

LIFE AT AMBIENT TEMPERATURES

Ambient temperature	Lifetime	Parameters
25 °C	50,000 h	L80B10
40 °C	36,000 h	L80B10
50 °C	36,000 h	L80B10

SILICONE AND ITS ADVANTAGES

The BILTON air is processed with a special surface treatment (SBAS treatment)

Opinions on the market for silicone material:
1.) Silicone is easily soilable
3.) Silicone-surface (e.g. surface coatings) are easily damageable
4.) Fixing silicone is difficult

Arguments for the material silicone and SBAS treatment
1.) Due to the surface treatment SBAS-treatment the silicone is difficult to soil and can be easily cleaned if necessary.
2.) The BILTON air uses crosslinked peroxide silicone, which has a better molecular Construction and therefore no maintenance is required
3.) BILTON Air consists of a silicone sheath-the silicone is continuous and can only be severely damaged.
4.) The BILTON air accessory has been specially developed for the BILTON Air series, including Day profile and mounting clips made of plastic, which is a simple installation of the product warranty
Clean.

Other benefits

/ The use of a more cost-intensive material has significant advantages.
/ Mechanical back neuroplasticity very good-pressure deformation rest much better
/ Silicone: High net density/molecular density
/ Medically sterilized surface (for clean room applications)
/ Silicone has a hybrid range of properties that is not achieved by any other plastic material.

General advantages of Silicone

/ Can be used in a large temperature range
/ No yellowing
/ UV and ozone-resistant (radiation and Laterungsresistent)
/ Mechanical recoverability
/ Resistant to most chemicals
/ fire resistance
/ No smoke and development of the fuel
/ plasticizer-free

Surface treatment of Silicone

The challenge
Due to its surface texture, silicone tends to cause stickiness and buildup of dust. This disadvantage limits the application and/or use strongly. The sticky and haftfreu surfaces of the components should become more friction-poorer and cleaner!

The solution: Low Friction Surface Treatment
A new surface treatment will achieve a reduction in sliding friction. This tribological effect is achieved by a specific modification of the silicon surface. The silicone-technological properties (mechanical and physical) remain completely influential. The surface modification remains not affected by over

the life time of the silicone product.

Conclusion:
The silicone feel is permanently improved by surface modification. Result: no more stick-slip effect. Unwanted dirt particles can no longer cling or stick. The testing requirements of relevant regulations for contact with foodstuffs are met by silicone with surface modification.

GENERAL PROPERTIES OF SILICONE

Silicone is a high temperature crosslinked synthesis rubber, based on the Element silon, which is the basic component of the chemical structure.
BILTON Air is manufactured with a platinum-crosslinked catalyst, which provides significant advantages compared to peroxide-crosslinking.

//__Free of Plasticizers
//__temperature resistance
Up to + 300 °c cold temperature flexibility
No brittleness up to-60 °c
//__water steam resistance
Silicone is very durable against boiling water and water vapor and has a low volume increase of 1%
//__weatheringAging
Even after years of weathering, the properties of silicone do not change significantly. Additives are not required for improved weather resistance. In addition, there is excellent resistance to ozone and UV exposure without a significant aging over the years.
//__Chemical resistance
The chemical resistance depends on the crosslinking density as well as the type and quantity of the applied fillers. Aqueous solutions of weak lye, acids and salts as well as polar liquids are not critical for silicone. However, non-polar liquids cause relatively high swelling-> details in the Resistance list

PHTHALATES

Phthalates were often used as plasticizers in polymeric materials. However, their use is restricted or prohibited by law.
Silicone rubber is an elastomer that is chemically different from the usual organic chewing schuke and plastics, which is why phthalates are not used for this purpose.
We hereby confirm that we do not use phthalates as a recipe and therefore we assume that they are not included in our products, apart from ubiquitous quantities, in the extraditable state.
We can confirm that our products, as described, do not contain any substances, as described in the above guidelines, are added or deliberately included.

These are listed in article 4 of Directive 2002 -95-EU + 2005/717/EC:
- Heavy metals such as lead, Quecksiber, cadmium, chromium 6 +
- Polybromierte biphenyle (PBB)
- Polybromierte diphenyl ether (PBDE)

- Deca BDE

Since we do not expect the listed substances, no measurements are taken on the finished product. Please note that we cannot rule out that raw material suppliers add these substances without our knowledge or that they are contaminated.

Phthalate
Phthalates

Sehr geehrte Damen und Herren,

Phthalate wurden oft benutzt als Weichmacher in polymeren Materialien. Ihre Nutzung ist aber zunehmend eingeschränkt oder gesetzlich verboten.

Siliconkautschuk ist ein Elastomer, das chemisch anders aufgebaut ist als übliche organische Kautschuke und Kunststoffe, weshalb Phthalate hierfür keinen Einsatz finden.

Wir bestätigen hiermit, daß wir Phthalate rezepturmäßig nicht einsetzen und wir deshalb davon ausgehen, daß diese in unseren Produkten, von ubiquitären Mengen abgesehen, im Auslieferungszustand nicht enthalten sind.

Dear Sirs

Phthalates have been commonly used as plastifier in polymeric materials. Their use is nowadays more and more restricted or prohibited by law.

Silicone rubber is an elastomer with a different chemical structure, compared with common organic rubber and thermoplastics, and thus phthalates are not used for the production of silicone rubber.

We herewith confirm that phthalates are not intentionally used in our formulations and thus they are – besides ubiquitious amounts – expected to be not present in our products at shipment.

Mit freundlichem Gruß
Best regards

Dr. H.-W. Tunger
- REACH -

HEAVY METALS AND HALOGENS

The products/product groups are made of materials that are free of heavy metals and free of halogens. Ubiquitous impurities cannot be excluded.

Schwermetalle und Halogene
Haevy metals and halogens

[redacted] Produkte/Produktgruppen sind aus Werkstoffen gefertigt, die frei von Schwermetallen und frei von Halogene sind. Ubiquitäre Verunreinigungen können nicht ausgeschlossen werden.

[redacted] product`s/product group`s are manufactured from materials, which are free of heavy metals and halogens. Ubiquitary contamination`s are possible.

Harald Schnellenbach

Anwendungstechnik

ANIMAL PRODUCTS

The BILTON Air series is free of products of animal and vegetable origin.
According to TSE guideline EMEA/410/01 of the European Union.
(TSE = Transmissible spongiform Enzephalopathy)

FOOD CONTACT

Food Contact:
Silicone components are often used in applications in which they have potential contact with food products. They must pass tests in accordance with FDA regulations (21CFR § 177.2600), EC 1935 (2004), BFR recommendation XV and LFGB § 31. This also applies to parts with surface treatment.
In an external examination of the TÜV Süd (Test Report No. 0003102248/70 AZ169750, sample number 5004804-02-14), the tests were carried out on a test specimen made of silicone rubber with surface treatment according to the aforementioned guidelines. In particular, migrating or volatile constituents are determined, certain ingredients, such as paks and other alternating effects.
The test requirements in accordance with the aforementioned directives have been surface treated Silicone rubber.

STORAGE AND MINIMUM SHELF LIFE

This product information is not intended as a specification. The specified data is a typical value. Deviations cannot be precluded for reasons of production or application. Material and toxic properties are to be removed from the corresponding safety data sheet.
Storage conditions and minimum shelf life. Doc Status: August/Apr. 2012 RP

Minimum Durability (MHD)

Silicone and textile glass do not age significantly in natural environment. Bearing arrangements of 5 Years lead to no material restrictions. Here are some things to keep in mind. Per Products which have a shorter shelf-time are on the label or in connection with the delivery note
Particularly marked.

Restrictions

//__dry bearings at temperatures between >-20 °c and <50°C, humidity between >30% and <50%></50°C,>

//__Silikon can absorb odors and exhalations from the environment. Therefore a owned storage of strongly smelling or exhaling products is not recommended

//__store for a long period of time not under air (e.g. dense PE bags), otherwise reversion may occur.

//__Products in which a disturbing deformation may occur due to the storage, should be removed from the shipping packaging if necessary.

//__transparent products can easily yellowing.

//__Products that have been deformed (rolled) over time can anneh this shape.

//__Products without release agent (talcum free) can stick together. This can lead to visual surface changes.

SILICONE STERILIZABILITY

Silicone sterilizability

Silicone can be sterilized repeatedly with the following procedures:

//__heated air at 200 °c (with polyester reinforcement 180 °c)

//__water steam 120°C/ 2bar

//__Etylenoxid at 70 °c

All of the above methods show an insignificant change in mechanical properties after 168h. Interactions from the application can lead to significant Merkmalsänderun in the mechanics. Boundary characteristics are to be defined by the user in consideration of safety aspects, especially for pressurised hoses or toxic media which are guided by hoses. In practice, a 50malige sterilization with steam as non-functional has been shown in the clinical area when Durchlei breathing air.

OZONE AND UV RESISTANCE OF SILICONE

Silicone is characterized by a very high ozone and UV resistance.

The high resistance to ozone and radiation results in extreme weather resistance of silicone. Even after 5 years of Außenbewitterung, only a 50% drop in Reißfes activity is expected. On a representative silicone sample (VHE, F40) A Xenontest 1200 was carried out according to DIN 53 387:

Silikon VMQ-70			**transparent**	
Duration			-	8000 h
Hardness	(Shore A)	(DIN 53505)	72	76
Tensile strength	(N/mm^2)	(DIN 53504-S1)	10,4	8,4
Elongation at breakt	(%)	(DIN 53504-S1)	410	460

CHEMICAL RESISTANCE

Chemical resistance of silicone rubber articles

Very good resistance in chlorinated water - pools with a usual dosage between 0.3 bsi 0.6 mg/l chlorine.

Chemical resistance of silicone rubber articles				
Agent	Temperature C/7 days	Change the Shore hardness	Swelling %	Beurteilung
Acetamid	150	+1	+1	Usable
Acetone	R.-T.	-9	+17	Usable
Ammonium hydroxide concentrates Triert Triert	R.-T.	+3	+2	Usable
Aniline	100	-7	+7	Usable
Gasoline	R.-T.	-24	+150	cond. usable
Benzene Chem. In	R.-T.	-15	+60	cond. usable
Benzylalkohol	R.-T.	-5	+2	Usable
Brake fluid	100	-8	+3	Usable
Butanol	117	-36	+65	cond. usable
Butylacetat	R.-T.	-19	+105	cond. usable
Calcium hydroxide Saturated	R.-T.	unchangend	1	Usable
Chlorbenzol	R.-T.	-15	+100	cond. usable
Chloroform	R.-T.	-10	+230	unusable
Clophen	150	-6	+16	Usable
Cyclohexane	R.-T.	-16	+130	unusable
Cyclohexane	81	-16	+135	unusable
Diacetonalkohol	R.-T.	unchangend	+4	Usable
Dibutyläther	142	-25	+145	unusable
Dibutylamin	137	Test specimen decay	----	unusable
Dimethylormamid	100	-17	+7	Usable
P-Dichlorbenzol	R.-T.	+4	+150	unusable
Diglykol	R.-T.	-2	1	Usable
Frigen 22	----	----	----	unusable
1,4 - Dioxan	101	-20	+68	Usable
Diphyl	150	-12	+29	cond. usable
Steam 1.0 Atü	119	unchangend	1	Usable
Steam 1.5 Atü	127	-6	1	Usable
Steam 2.0 Atü	132	-8	1	Usable
Steam 2.5 Atü	138	-8	1	Usable
Steam 3.0 Atü	142	-12	1	cond. usable
Steam 3,5 atü	147	-13	+ 2	unusable
ICE COMPRESSOR OILS:				
BC 8	150	-19	+ 14	Usable
LPT 50	150	-35	+ 36	cond. usable
LPT 80 heavy	150	-26	+ 29	cond. usable
Epichlorohydrin	117	-11	37	cond. usable
Acetic anhydride 100%	R.-T.	unchangend	+ 3	Usable
Acetic acid, Konz.	R.-T.	-6	+ 8	Usable
Essigsäureethylester	R.-T.	-5	+ 5	Usable

FATS:				
Becherfett	150	-21	+ 25	Usable
Kugellagerfett	150	-23	+ 15	Usable
Sovarex 3	150	-23	+ 22	Usable
Staufferfett	150	-26	+ 63	unusable
"Vaseline Flußsäure 5%-IG „	"150 R.-T."	"- 12 Test specimen „	+ 10	Usable
		Disintegrate	----	unusable
GEAR OILS				
DTEBB	150	-5	+4	Usable
DTE Extra Heavy	150	-9	+5	Usable
DTEHH	150	-4	+1	Usable
DTE medium	150	-15	+10	cond. usable
HP 20	150	-21	+12	Usable
Glycol	R.-T.	-1	1	Usable
Glycerine	100	-1	11	Usable
Hexaäthoxydisiloxan	R.-T.	-11	+30	cond. usable
N-hexane	R.-T.	-14	+110	unusable
Isoamylalkohol	132	-39	+105	unusable
Isopropylalkohol	82	-28	+59	cond. usable
Potassium dichromate LSG. 100%	R.-T.	-1	1	Usable
"Potassium dichromate Lsg. 20%-ig	R.-T.	-2	1	Usable
Potassium hydroxide 50%-IG	R.-T.	-2	1	unusable
Kaliumpermanganat Lsg. Saturated Saturated	R.-T.	-4	1	Usable
Karbolineum	R.-T.	-1	+ 6	Usable
Saline	R.-T.	-1	1	Usable
Linseed oil	100	-1	1	Usable
Methanol	65	-26	+ 8	cond. usable
Methylethylketon	80	-19	+ 79	cond. usable
Methylenchlorid	R.-T.	-17	+ 160	unusable
Methylmethacrylat	R.-T.	-15	+ 83	cond. usable
Methylglykol	124	-14	+ 10	Usable
Mineral oil brake Fluid	R.-T.	unchangend	+ 3	Usable
mineral oil, transmission fluid SAE 90	150	-1	+ 3	Usable
Mineral oil, shock absorber oil	R.-T.	-4	+ 3	Usable
Mineral oil ASTM No. 1	150	-5	+ 3	Usable
Petroleum ASTM No. 3	150	-38	+ 26	cond. usable
Motor Oils				
SAE 10	150	-26	+ 15	Usable
SAE 20	150	-12	+ 12	Usable
SAE 30	150	-17	+ 5	Usable
Fuel oil	R.-T.	----	----	unusable
Viscostatic	150	-22	14	Usable
Mono glycol: water 1:1	R.-T.	-2	1	Usable
Monostyrol	R.-T.	-12	+ 64	cond. usable
Natriumchlorat Lsg. 20%-ig	R.-T.	-1	1	Usable
Sodium carbonate lsg. Saturated	R.-T.	unchangend	1	Usable
Sodium hydroxide Solution 50%-IG	R.-T.	-3	-2	unusable
Sodium hydroxide solution 10%-IG	R.-T.	1 - 2	1	Usable

Natriumperchlorat Lsg. 20%-ig	R.-T.	-1	1	Usable
"Nitrobenzene Various oils: „	R.-T.	-3	----	Usable
Diesel	R.-T.	-18	-66	cond. usable
Dynamoöl	150	-32	+28	cond. usable
Hochdruckkompressorenöl	150	-4	+4	Usable
Hochdruckkompressorenöl	150	-16	+12	Usable
Normal machine oil	150	nicht meßbar	----	unusable
Regleröl	150	-42	+63	cond. usable
Trafoöl	150	-49	-2	unusable
Oleic acid	150	-7	+1	Usable
Olive oil	150	-5	+1	Usable
Castor oil	R.-T.	-13	+200	unusable
Perchloräthylen and	R.-T.	-14	+200	unusable
Perchloräthylen, STABILIZED	R.-T.	-15	+79	cond. usable
Petroleum	R.-T.	-14	+105	unusable
Petroläther	60	-1	+5	Usable
Phenol	R.-T.	-3	+3	Usable
Phenollösung	R.-T.	+2	-1	Usable
Phosphoric acid 84%	R.-T.	-1	1	Usable
Phosphoric acid 50%	R.-T.	-2	1	Usable
Phosphoric acid 30%	150	-1	+2	Usable
Phthalic anhydride	R.-T.	-16	+17	cond. usable
Pyridine	R.-T.	+1	1	cond. usable
Nitric acid 10%-IG	R.-T.	+5	+2	unusable
Nitric acid concentrated	R.-T.	unchangend	0	Usable
Hydrochloric acid 10%-IG	R.-T.	-39	1	cond. usable
Hydrochloric acid Konz.	130	+1	1	Usable
Sulphur Carbon	"R.-T. R.-T."	"+ 2 Test specimen De-cay „	"1 ----"	"Usable unusable"
Sulfuric acid 10%-IG Felsäure concentrated	R.-T.	-10	+72	cond. usable
"Speisefette: Coconut oil"	100	+1	0	Usable
Margarine	100	-1	+1	Usable
Olive oil	100	-1	1	Usable
Stearic acid	150	-39	-2	unusable
Turpentine	R.-T.	-17	+115	cond. usable
Tetraäthylsilicat	R.-T.	-15	+67	unusable
Tetrachloräthan	R.-T.	-25	+79	cond. usable
Tetrachlorkohlenst.	R.-T.	-14	+250	cond. usable
Tetrahydrofuran	65	-19	+160	unusable
Trichloräthylen	R.-T.	-10	+230	unusable
Triglykol	R.-T.	-4	1	Usable
Toluene	R.-T.	-15	+105	cond. usable
"Detergent: (1%-ige Lsg.)"	R.-T.	-2	1	Usable
Wacker Silicone Oil AK 100	150	11	+25	cond. usable
Wacker Silicone Paste P4	150	-2	+7	Usable
Water	100	-6	1	Usable
Glass	R.-T.	-4	1	Usable
Hydrogen peroxide 10%-ig	R.-T.	+2	1	Usable
Hydrogen Peroxide 30%	R.-T.	+1	1	Usable
Plasticizer: Citroflex a 4 Acetyl-tributylcitrat	100	-7	+12	Usable
Dioctyladipat	100	-10	+15	Usable
Dioctylphthalat	100	-8	+11	Usable

Epoxydweichmacher D 8 (CE poxydiertes Sojabohnenöl)	100	-1	1	Usable
Mesamoll (Alkylsul- fonsäu reester des Kresols u. Phenols)	100	-7	+4	cond. usable
Polymerweichmacher ABG (Polyester from adipic acid and This-Tylenglykol)	100	+1	1	Usable
Tritolylphosphat	100	-2	+2	Usable
Xylene	R.-T.	- 9	+ 110	bed. Usable

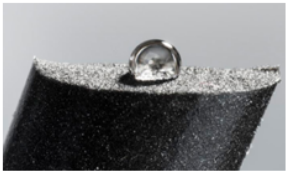
CLEANING INFORMATION

Spread the water and detergent on a cotton rag and clean the silicone with it.
Silicone resistant to detergents (on alkaline basis) with short-term contact.

CHEMICAL STRUCTURE

Typical structure of a silicone polymer

//__at high humidity (e.g.: Over 70%) the chemical structure of pur is attacked: hydrolysis
//__Silicone: Other chemical composition
--> Therefore, no water absorption



CHEMICAL RESISTANCE

1 = Excellent durability 2 = good resistance 3 = Medium Resistance x = Non-persistent	"Ester-While"	"Ether	Silico-ne	Hypa-lon®	Viton®	PVC	PE	PTFE	Neota-ke®	Hood	TPV	"After spez"
Waste water	x	x	2	1	1	1	1	1	1-2	1	2	2
Acetaldehyde, FL.	3	2	2	3	2	x	3	1	3	1	1	3-x
acetamide	x	x	2	2	1-2	x	1	1	2		1	1
Acetone	3	x	2	2-3	x	3	1-2	1	3	1	1	2
Acetylacetone (pentandion)	3	x	x		x	x	x	1		1	1	
acetylene	2-3	2-3	2	2	1	1	3	1	2	1	1	3
Acetylsalicylic acid (aspirin)					1	1	1	1				1
Acrylonitrile	x	x	3	3	2	2-3	1	1	3	1	1	
Acrylic acid ethyl ester (ethyl acrylate)	x	x	2	1	x	x	x	1	x	1	1	
Adipic acid (hexanedioic acid)	3	1-3	x	1	1	1	1	1	2	1		2
adipate				1	x	x		1		1	1	1
Candles Oils 1)	2	2	x	3	1	x	x	1	x	1	2	
Quicklime (calcium hydroxide)	3	2	1	1	1	2	1	1	1	1	1	1
Caustic Potash S. Potassium hydroxide												
Caustic soda S. Sodium hydroxide												
Battery acid (sulfuric acid 30%)	x	2	x	1	1	1	1	1	2	1	1	1
Alum (potassium aluminum sulphate)	2	1	1-2	1	1	1	1	1	2	3	1	2
Aliphaten S. Gasoline and Alcohols S. Spec. Used	2	2	x	x	1	3	x	1	x	1		x
Alcohols S. Spec. Used General applies 1	2	2	1-2	1	1-2	1-2	1-2	1	2	1	2	1-2
Allyl alcohol (propenol)	3	3	x	1-3	3	3	1	1			1	1-2
Allyl chloride (3-chlorine-props)	x	x	1		x	x	x	1		1		x
Aluminum acetate, W. (Vinegar	x	3	x	1	x	1	1	1	1	1	1	2
Aluminum chloride, w.	3	1-2	2	1-2	1	1	1	1	1	1	1	2
aluminum fluoride	3	3	1	1	1	1	1	1	1	1	1	2
aluminum hydroxide	3	2	1	1	1	1	1	1	1	1	1	2
Aluminum nitrate, w.	3	2	2	1	1	2	1	1	1	1	1	
Aluminum phosphate, w. (Phosphoric acid clay)	2	1	1	1	1	1	1	1	1	1	1	
Aluminum sulphate w.	3	2	1	1	1	1	1	1	1	1	1	1
Formic acid (methanoic acid) 3%	2	1	1	1	2	1	1	1	1		1	2
10%	3	2	2	1-2	3	1-2	1	1	1		2	2
100%	x	x	x	x	x	2-3	1	1	1	2-x		2
Amines s. specific terms												
Ammonia, liquid 100%	x	x	3	2	x	3	2	1	1	1	1	3
Ammonia, w. 25% (ammonia)	x	x	1	3	1	1	1	1	2	x	1	2
Ammonia, gaseous 20 ° C	x	3	1	2	1	1	1	1	1	1	1	2
Ammonium acetate, w.	x	x	3-x	1	x	1	2	1			1	3
Ammonium carbonate, w.	x	x	2-3	1	1	1	1	1	1	1	1	
Ammonium chloride (sal ammoniac), w. 3%	3	1	1	2	1	1	1	1	1	1	1	2
Ammonium diphosphate, w.	3	1	1-2	1	1	1	1	1	1	1	1	2
Ammonium fluoride, w.	x	x		1	1-2	1-3	1	1			1	2
Ammonium hydroxide, w. (Ammonia, w.)	x	x	1	3	1	1	1	1	2	x	1	2

Ammoniummetaphosphat	2	1	1	1	1	1	1	1	1	1	1	2
Ammonium nitrate, w.	3	2	1	3	3	2	1	1	2	1	1	2
ammonium nitrite	1	1	2	1	1		2	1	1	1	1	2
Ammonium persulfate, w.	3	2	2-3	2-3	1	1	1	1	2-3	1	1	2
Ammonium phosphate, w.	3	1	1	1	1	1	1	1	1	1	1	2-3
ammonium sulfate	2	1	1	2	1	1	1	1	1	1	1	2
ammonium thiocyanate	3	2	1		1	1	1	1		1	1	2
Amyl acetate 1) (pentanoacetate, banana oil)	x	x	3	x	x	x	2	1	3	1	1	2-3
Amyl alcohol (pentanol)	3	3	3	1	2	1	1-2	1	1	1	1	2
Amylborat	x	x	x	1	1			1	1	1	1	
amyl chloride	x	x	3	x	2	x	x	1	x	1	2	x
Aniline (aminobenzene, phenylamine)	x	x	2	3	1-2	2-3	2-3	1	x	1	1	3
aniline hydrochloride	x	x	x	3-x	x	x	2-3	1	3-x			x
aniline dyes	x	x	2-3	2-3	1	1	3	1	2	1	1	
anise						x	3-x	1	x			3
Anol s. cyclohexanol	3	x	2-3	1-2	1	x	1	1	2	1	2	1-2
Anon s. cyclohexanone	3	x	x	x	x	x	2-3	1	x	1	2-3	3
Antichloro (sodium thiosulfate)	3	2	1	1	1	1	1	1	1	1	1	1
Anthraquinone. w.	x	x	x	1	1	1	1	1			1	
Antimony chloride, anhydrous	x	x	3	1	1-2	1	1	1			1	2
Antimony chloride 50%	3	2	x	1	1	1	1	1	1	1	1	2
Malic acid, w. 1) (apple juice)	x	3	1	1	1	1	1	1	1	1	1	1
Arctone = Freetype of the ICI												
argon gas	1	1	1	1	1	1	1	1	1	1	1	1
Aromatics s. Benzene, toluene, xylene and the like homologous												
in general	x	x	x	3-x	2	x	x	1	2-3	1	3-x	x
arsenic acid	3-x	3-x	1	1	1	1	1	1	1	1	1	2
arsenic acid		3	1	1	1	1	1	1	1	1	1	
Ascorbic acid (vitamin C)					1	1	1					
Asphalt (earth pitch)	2	2	2	2	1	2	1	1	2	1	2-3	
ASTM Oil # 1	1	1	3	1	1			1	1		x	
ASTM Oil No. 2 20 ° C	1	2	3	2	2	2	3	1	1	1	x	
ASTM Oil No. 3	3	3	x	2-3	1			1	1		x	
ASTM fuel A	1	1	x	1	1	3-x		1	1		x	
ASTM fuel B	x	x	x	x	1	3-x		1	x		x	
ASTM fuel C	x	x	x	x	1	3-x		1	x		x	
ATE brake fluid	x	3	x	2	1	2	2	1	x	1	2-3	
ATS brake fluid	x	x	3	1	1	1	1	1			2-3	
Baking soda (sodium bicarbonate)	x	2	1	1	1	1	1	1	1	2	1	1
Barium chloride, w.	2	1	1	1	1	1	1	1	1	1	1	2
barium	3-x	1	1	2	1	1	1	1	1	1	1	2
Barium sulfate (barite)	1	1	1	1	1	1	1	1	1	1	1	2
barium	2	2	1	1	1-2	1	1	1	1	1	1	1
Cottonseed oil 1)	1	1	1-2	1-2	1	1-2	1	1	2-3	1	2	1
Pickling solution (20% nitric acid 4% HF)	x	x		1			3	1	x		x	x
benzaldehyde	3	3	2-3	x	2-3	3	2	1	x	1	2	x
Benzene (benzene)	x	x	x	3-x	2-3	3-x	3-x	1	x	1	x	x
Benzines, general (see exact medium)	1	1	3-x	x	1	x	x	1	1-2		x	x
Gasoline, ASTM fuel A	1	1	x	1	1	3-x		1	1		x	
Gasoline, ASTM fuel B	x	x	x	x	1	3-x		1	x		x	
Gasoline, ASTM fuel C	x	x	x	x	1	3-x		1	x		x	
Gasoline, diesel, fuel oil	1	1	3	2	1	3-x	2	1	x	1	x	2
Gasoline, low aromatic	2	2	x	x	1	3	x	1	1	1	x	x

Petrol, highly aromatic (Solvent Naphta)	3	2-3	x	2-3	1	2-3	2-3	2	1	1	x	x
Gasoline, aircraft (kerosene)	1	1-2	x	2	1	3	2	1	2	1	x	x
Gasoline, paint o.Test-, turpentine substitute	1-2	1-2	x	x	1	3	1-2	1			x	x
Gasoline / benzene (50/50)	3	3	x	x	2	3		1			x	
Gasoline / benzene (60/40)	2	2	x	x	2	3		1			x	
Gasoline / benzene (70/30)	2	2	3	x	1	3		1			x	
Gasoline / benzene (80/20)	2	3	3	x	1	3	3	1			x	
Gasoline / benzene / ethanol (50/30/20)	3	3	x	x		3		1			x	
Benzoic acid, w.	x	x	3-x	x	1	1	1	1	x	1	1	1
benzyl alcohol	x	x	1	2	1	3	3	1	3	1	2	x
benzyl benzoate	x	x	1	1	1			1	x	1	2	
benzyl chloride	x	x	2	x	1	x	2-3	1	x	1	x	x
Bergblau (copper hydroxide)	1	1	1				1	1		1	1*	
Succinic acid (butanedioic acid)	x	3	3	1	1	1	1	1			1	
Irradiation radioactive: generally applies	2	3	x	x	x	x	3	x	x	x	1-2	x
weathering	1	1	1	1	1	1	2	1	1	1	1	2
Beer 1)	2	1	1	1	1	1	1	1	1	1	1	1
Biogas (marsh gas)	1	1		1	1	1	1	1			x	
"Biphenyls, polychlorinated (pyranols, oils,												
Transformer oils) "	2	2	x	x	1	3	3	1	2-3	1	x	x
Bismuth carbonate (bismuth carbonate)	1	1	1		1	1	1	1	1	1	1	
Bisulfite lye containing SO2					1	1	1	1	1	1	1	
Epsom salt (magnesium sulfate)	1	1	1	1	1	1	1	1	1	1	1	2
Bitumen 20 ° C (see also hot bitumen)	2	2	3	3	1	x	1	1	x	1	2-3	
Blancfix (barium sulphate)	1	1	1	1	1	1	1	1	1	1	1	2
Hydrocyanic acid 20%	3	2	2-3	1-2	1-2	1-2	1	1	2-3	1	1	2
Hydrocyanic acid 98% (conc.)	3	2	2-3	1-2	1-2	1-2	1	1	2-3	1	1-2	2
Lead acetate, w.	3	1	1	1	1	1	1	1	2	1	1	1
Lead arsenal, w.	3	1	1			1	1	1	1	1	1	2
Bleach (Javelle lye, potassium hypochlorite)	3	2	2	2-3	1	1	3	1	2-3	3	1-2	x
lead nitrate	2	1	2	1	1	1	1	1	1	1	1	1
lead sulfate	1	1	1	1	1	1	1	1	1	1	1	
blood						1	1	1				
Drilling oil: chem. Determine composition												
Borax (sodium borate)	1	1	2	2	1	1	1	1	1	2	1	1
Boric acid, w.	3	1	1	1	1	1	1	1	x	1	1	1
Brandies of all kinds 1)	1	1	1	1	1	1	1	1	1	1	1	1
Lignite tar oil (see also coal tar)	3	3	x	x	1	2-3	2-3	1	3	1	2	3
Brake fluid, ATE	x	3	x	2	1	2	2	1	x	1	2-3	
Brake fluid, ATS	x	x	3	1	1	1	1	1			2-3	
Brake fluid, made of glycol ether	x	x								1	1	
Methylated spirits (ethanol denatured)	2	2	2	1	1	2-3	1-2	1	1	1	1	2
bromine	x	x	x	x	1	3	x	1	x	1	3	x
bromobenzene	x	x	x	x	1	x	x	1	x	1	x	x
bromine	x	x	x	2-3	1	x	x	1	x	1	3	x
hydrobromic	x	3	3	1	1	2-3	1-2	1	1	1	1	1
butadiene	2	1-2	x	2	2	3	2-3	1	2	1	2	x
Butane gas	1	1	3-x	2	1	2	3-x	1	2	1	2	

Butane, liquid	1	1	3	1	1	2	1	1	1	1	2	
Butanediols (butylene glycols)	1	1		1	2	3	1	1			1-2	
Butanol (butyl alcohol)	3	3	2	1	1	2-3	1	1	1	1	1	2
Butanone (methyl ethyl ketone MEK)	x	x	x	x	x	x	2	1	3	1	1	2-3
Butindiol	1	1		2	3			1				
Butter 1)	1	2	2	2	1	2	1	1	2	1	2	1
Buttermilk 1)	1	1	1	1	1	1	1	1	2-3	1	1	
Butyric acid, w. 1)	x	x	2	2-3	3	1	x	1	x	1	1	x
Butyl acetate (butyl acetate)	x	x	3	3	x	x	x	1	x	1	1	x
butyl ether	x	3	3		x	1	1	1	2-3	1	2	
butylamine	2-3	2-3	2-3	x	x	x	3	1	3	1	1	
butylbenzoate	1	1	x	x	1			1	x	1	2	
carbitol	x	x	2	2	1			1	3	1	2	
Butylene, liquid (butene)	3	3	3	3	1	1	2-3	1	x	1	1	x
butylglycol	3	3	2		1	x	1	1	x	1	2	
oleate	x	x	1	x	1			1	x	1	2	
butylphenols	x	x		x	3	x	1-2	1				x
butyl stearate	1	1	1	2-3	1	1	x	1	x	1	2	2
butyraldehyde	x	x	x	x	x		1	1	3	1	1	x
calcium acetate	2	2	2	2	x		1	1	2	1	1	
Calcium bisulfate, w	3	1	1	1	1	1	1	1	1	1	1	1
Calcium bisulfite, w	3	2	1	1	1	2	1	1	1	1	1	1
calcium carbonate	1	1	1	1	1	1	1	1	1	1	1	1
Calcium chloride, w	3	1	1	1	1	1	1	1	1	1	1	1
Calcium hydroxide, w (slaked lime)	3	2	1	1	1	2	1	1	1	1	1	1
Calcium hypochlorite, w	x	x	2-3	1-2	1	1	1	1	3	1	1-2	1-2
calcium nitrate	1	1	2	1	1	1	1	1	1	1	1	1-2
Calcium oxide = lime, calcined	1	1	1	1	1	1	1	1	1	1	1	1
Calcium phosphate, w	2	2	1	1	1	/td>	1	1			1	
Calcium sulfate (gypsum), w	3	1	1	1	1	1-2	1-2	1	2	1	1	2
calcium sulfide	2	1	2	1	1			1	1	1	1	
Camphor (camphor oil)	x	x		3-x	3-x			1				x
Carbitol (diethylene glycol monoethyl ether)	x	x	2	2	2	3	1	1	3	1	1	1
Carbolineum, w	x	x	x	1	1	3	1	1	1	1		
Carbolic acid (phenol)	3-x	3-x	3	2-3	1	x	x	1	3	1	2-3	x
Caro's acid (peroxy-monosulphuric acid)				2-3		1	x		x	1		x
Cellulose acetate (acetylcellulose)	2	1	1				1	1	1	1	1	
Cellulube hydraulic oil (see also phosphate ester based hydraulic oil)		x	x	2-3	x	1	x	x	1	x	1	1
Chlorine, dry	x	x	x	2-3	1	3-x	x	1	3-x	1	1-3	x
Chlorine, damp	x	x	x	2-3	1	x	x	1	x	1	1-3	x
chloral hydrate	x	x		2	3	x	1	1	2	2		
chloramine	2	2		1	1						1	
Chlorobenzene (monochlorobenzene)	x	x	x	x	1	x	3	1	x	1	x	
bromochloromethane	x	3	x	x	1	x	2	1	x	1	3	2
Chlorine calcium (calcium chloride)	3	1	1	1	1	1	1	1	1	1	1	1
Chlorine dioxide	x	x	3	1	1	2-3	x	1	1	1		
Chlorodiphenyl (Clophen)	x	x	2	x	1	x	1	1	x	1	3	2
Chloroacetic acid (monochloroacetic acid)	x	x	x	2	x	2	x	1	3	1	2	x
Chloroethanol (ethylene chlorohydrin)	x	x	x	2	x	x	1	1	x	x	2	

Chloroethyl (ethyl chloride)	x	x	x	x	1-2	3-x	3-x	1	3	1	2-3	x
Chlorinated lime (calcium hypochlorite)	x	x	2-3	1-2	1	1	1	1	3	1	1-2	1-2
Chlorinated hydrocarbons s. single designations, generally applies			x	x	x	x	2	x	x	1	x	1 x
Chloromethane (methyl chloride)	x	x	x	x	2	x	3	1	x	1	2	x
Chloroform (trichloromethane)	x	x	x	x	1	x	x	1	x	1	x	x
Chloroprene (chlorobutadiene)	x	x	x	2	1	x	3	1	x	1	3	
Chlorothene (trichloroethane, methylchloroform)	x	x	x	x	1	3	x	1	x	1	2	x
Chloric acid, w.				1	x	1	1	1	1	1	1	
chlorosulfonic	x	x	3	3	3	3	3	1	3	1	1-2	x
Chlorine water 3%	x	3	2-3	3	1	1	2	1	x	1	1-2	
Hydrogen chloride (acid, hydrochloric acid, etc.)	3	2	1	1-2	1	1	1	1	2	1	1	1
Chromic acid 10%	x	3	3	2-3	2	1	3	1	3	1	1	3
Chromic acid 25%	x	x	x	2-3	1	2	x	1	x	1	1	x
Chromic acid 50%	x	x	x	2-3	1	x	x	1	x	1	2	x
Chromium trioxide s. chromic acid												
Citric acid 1)	2	1	2	1	1	1	1	1	1	1	1	1
Clophen (chlorodiphenyl)	x	x	2	x	1	x	1	1	x	1	3	2
Cresols	x	x	x	x	1	x	2-3	1	3	1	2	x
Crotonaldehyde (2-butenal)	3-x	2-3		1	1	x	1	1	1		1	
Cumen, cumene (isopropylbenzene)	3	3-x	x	x	1	x	x	1	x	1	x	x
Cyankali (potassium cyanide), w.	3	2	1	1	2	1	1	1	1-2	3	1	2
Hydrogen cyanide (s). cyanide												
Cyano Sodium (Sodium Cyanide)	3	3	1	1	1	1	1	1	1	3	1	
Cyclohexane (hexahydrobenzene)	2	2	x	x	1	x	2	1	x	1	3-x	x
cyclohexanol	3	x	2-3	1-2	1	x	1	1	2	1	2	1-2
cyclohexanone	3	x	x	x	x	x	2-3	1	x	1	2-3	3
cyclohexylamine	x	x	x	3-x	x	1		1			x	
Steam up to ° C	x	x	120	100	150	x	x	200	x	200	135	
Decalin (decahydronaphthalene)	1	1	x	x	1	1	x	1	x	1	x	x
Dextrose (see glucose)	2	1	1	1	1	1	1	1	1	1	1	1
diacetone	3	2	2	2	x	x	1	1	3	1	1	
dibenzyl	2-3	2-3	2	x	1	x		1	3-x	1	3	
dibutylamine	x	x	3	x	x		x	1	x	1	2	
dibutyl phthalate	x	3	2	3-x	2	3	3	1	x	1	2	1-2
dibutyl	x	x	2	x	2	3	1	1	x	1	2	1-2
dichlorobenzenes	x	x	x	x	2-3	x	3	1	x	1	3	x
dichloroethylene	x	x	x	x	2	x	x	1	x	1	3	
dichloroisopropyl	2	2	x	x	3			1	x	1	2	
Dichloromethane (methylene chloride)	x	x	x	x	2	x	x	1	x	1	3	
diesel oil	1	2	3	3	1	3	2	1	x	1	3	2
diethanolamine			2-3				1	1		1	2	2
diethylamine	x	3	2	3	2	x	3-x	1	2	1	1	
Diethylbenzene (s)	x	x	x	x	1	1	x	1	x	1	x	x
Diethylene glycol (diglycol)	3	3	2	2	1	3	1-2	1	1	1	1	2
Diethylene glycol monoethyl ether (Carbitol)	x	x	2	2	2	3	1	1	3	1	1	1
Diethyl ether (ether)	2	2	x	3-x	3-x	3	x	1	3	1	2	x
Diethylsebazat			2	x	2			1	x	1	2	

Diglycol (diethylene glycol)	3	3	2	2	1	3	1-2	1	1	1	1	2
Diglycolic acid, w.	x	x	3	2	1	2	1	1			1	
dimethylamine			2	x	x	x	3	1	x	1	1	
Dimethylaniline (xylidine)	2-3	2-3	2	3	2	x	x	1	x	1	2	x
Dimethyl ether (methyl ether)	2	2		3	3	x	2	1	x	1	1	
Dimethylformamide (DMF)	x	3	2-3	3	3	x	1	1	x	1	1	1
Dimethylheptanone (diisobutyl ketone)	x	x			x			1				
dimethyl	3	3	3	x	2			1	x	1	2	
Dioctyl phthalate (DOP)	1	2	3	x	1-2	3	2-3	1	x	1	2	2
dioctyl	2	2	3	x	2			1	x	1	2	
Dioxane (diethylene dioxide)	x	x	x	x	x	x	2	1	x	1	2	2-3
Dipenten (limonene)	x	x	x	3	1			1	2		x	
diphenyl	x	x	x	3	1	x	2	1	x	1	3	
Diphenyloxide (diphenyl ether)	x	x	2	x	2-3	x	2-3	1	x	1	2	3
dipropylene			2	1	1		1	1	1	1	1	1
Dodecyl alcohol (lauryl alcohol)			2-3		1			1	1	1	3	
Cod liver oil	1	1	2	1					1			
DOWTHERM A (glycols)	x	3-x	x	2-3			1	1	2-3		x	2
Jet fuel DP1-IPS			x		1	1	x	1	2	1		
Fertilizer salt, w.	x	3		1	1	1	1	1			1	
Eau de Javelle (potassium hypo-chlorite)	3	2	2	2-3	1	1	3	1	2-3	3	1-2	x
Ferric chloride (Ferri), aqueous	2-3	2	2	2	1	1	1	1	1	1	1	1
Iron sulfate, ferric vitriol, aqueous	2-3	2	1	2	1	1	1	1	1	1	2	1
Glacial acetic s. Acetic acid 100%												
Developer Fluids (general)	x	2	1	1	1	1	1	1	1	1		
Epichlorohydrin liquid	x	x	x	x	x	x	1	1	x	1	1	
Natural gas (natural gas), nafl	2	1-2	2-3	1	1	1	2	1	1	1	2	
Natural gas (natural gas), dry	1	1	2-3	1	1	1	1	1	1	1	2	
Petroleum without additives, at 20 ° C	1	1	2-3	2-3	1	2	2	1	3	1	2-3	2
Petroleum without additives, up to ° C	60	60	x	150	200	x	30	200		200	100	
Vinegar (vinegar) 1)	x	3	1	1	2	2	1	1	1	1	1	1
Acetic acid 10%	x	x	2	1	2	3	1	1	1	1	1	1
Acetic acid 25%	x	x	2-3	1-2	2	x	1	1	1-2	1	1	2
Acetic acid 50%	x	x	2-3	2	2	x	3	1	2-3	1	1	3
Acetic acid 100% (conc.)	x	x	2-3	3	x	x	x	1	x	1	1	x
Ethyl acetate (ethyl acetate)	x	x	2	x	x	x	2	1	3	1	1	2
Acetic anhydride 50%	x	x	1	1	x	x	3	1	2	1	1	x
Acetic acid clay (aluminum acetate)	x	3	x	1	x	1	1	1	1	1	1	2
Ester s. individual names												
Ethane (gas)	2	2	2-3	3	1	1	1	1	2	1	2	
Ethanol (ethyl alcohol)	2	2	2	1	1	2-3	1-2	1	1	1	1	2
Ethanolamine (2-aminoethanol)	x	x	2-3	2-3	3	3	1	1	2-3	1		
Ethene (ethylene)	1	1	2	x	1	1	1	1	2-3	1	2	
Ether (ethyl ether, diethyl ether)	2	2	x	3-x	3-x	3	x	1	3	1	2	x
Essential oils1)	2	2	x	3	1	x	x	1	x	1		
ethyl acetate	x	x	2	x	x	x	2	1	3	1	1	2
Ethyl acrylate (ethyl acrylate)	x	x	2	1	x	x	x	1	x	1	1	
Ethyl alcohol (denatured or denatured = spirit) 1)	2	2	2	1	1	2-3	1-2	1	1	1	1	2
Ethylbenzene (o.-benzene)	x	x	x	x	2	x	x	1	x	1	x	x
Ethyl bromide (bromomethane)	2	2	x	x	1	x	2	1	x	1	2-3	
Ethyl chloride (chloroethane)	x	x	x	x	1-2	3-x	3-x	1	3	1	2-3	x
Ethylene (-gas) (ethene)	1	1	2	x	1	1	1	1	2-3	1	2	

Ethylene chlorohydrin (chloro-ethanol)	x	x	x	2	x	x	1	1	x	x	2	
Ethylene chloride (dichloro-ethane)												
ethylenediamine	x	x	2	2	2	x	1	1	2	1	1	1
Ethylene glycol (glycol, etha-ne-1,2-diol)	2-3	2-3	1	1	1	1	1	1	1	1	1	1
Ethylene oxide (1,2-epoxy methane)	x	x	3-x	x	x	x	2-3	1	x	1	1	x
Ethyl ether s. ether	2	2	x	3-x	3-x	3	x	1	3	1	2	x
ethyl glycol	x	x			x		1	1		1	2	1
ethyl mercaptan	x	x	3	2	x			1	x	1	2	
Fatty alcohols (long-chain aliphatic alcohols)	3	2	2	2	2	2	1	1			3	1
Fats in general s. Oils and fats	x	x	x	x	x	x	1-2	1	x	1		
Fatty acids with 1-7 C atoms, general	3-x	2-3	3	2-3	1	1	3	1	3	1	2	3
Fatty acids, with> 7 C atoms, in general	2	1	3	2-3	1	1	3	1	3	1	2	3
Liquefied gases (LPG) s. chem. Name of the gas												
Pine needle oil	2	2	2	x	1-2	x	2-3	1				x
varnish	3	2	x	x	1	x	1	1	x		x	
Fish Oil	2	2	1	3	1	2	1	2-3	1		2	
Aviation fuel (kerosene)	1	1-2	x	2	1	3	2	1	2	1	x	x
Fluorine liquid	x	x	x		2	2-3	x	1	x	1	x	x
Fluorobenzene (o.-benzene)	x	x	x	x	1			1	x	1	x	
Fluoroboric acid 65%		x	x	1-2	2	1	2	1	2	1	x	2
Fluorosilicic acid, w.	x	x	2-3	1-2	1	2-3	2	1	2	1	1	2
Fluorosilicic acid (hydrofluoric acid)	x	x	x	2	x	1	1	1		1	1	
Hydrogen fluoride (s) s. Flußsäure												
Fluric Acid 10%	x	2	2-3	1	1	1-2	2	1	2	1	1	2
Fluric acid 30%	x	2	3	1-2	1-2	2	2	1	3	1	2	2
Fluric Acid 75%	x	3	x	2	2	3	x	1	x	1	3	
Formaldehyde (methanal)	2	2	1	1-2	1	2	1	1	2	1	1	1-2
Formalin (30-40% w Form-aldehyde solution with 8-12% methyl alcohol				3	2	2	2	1	1	1	1-2	2 1
1	2											
formamide	x	x		1	2-3	x	1	1			1	
Photo-emulsions, general (see exact chemical name		x	x	2	1	1	2	1	1			1 1
Frost protection s. exact che-mical name												
Fruit juices 1)	3	1	1	1	1	1	1	1	1	1	1	1
furan	x	x	x	x	x	1	x	1	x	x		3
Furfuryl alcohol (furfurol)	x	x	2	3	3	1	x	1	3	x	2	x
gallic acid	3	3	1	2	1	1	1	1	3	1	2	1
Gasoline s. Benzine												
Gelatin, w.1)	3	1	1	1	1	1	1	1	1	1	1	
Tannin (tannin)	2-3	2	2	1-2	1-2	1	1	1	1-2	1	1	1
Gypsum (calcium sulphate) w.	3	1	1	1	1	1-2	1-2	1	2	1	1	2
Glauber's salt (sodium sulfate) w.	3	1	1	1	1	1	1	1	1	1	1	1
Glucose1)	2	1	1	1	1	1	1	1	1	1	1	1
Glycerol (glycerol, propa-ne-1,2,3-triol)	1	1	1	1	3	1	1	1	1	1	1	1
Glycine (glycine, aminoacetic acid), w. 10%	x	x	2-3	2-3	1	1		1			1	

Determine glycols exact name, generally applies	2	2	1	1	1	1	1	1	1	1	1	1
Glycolic acid (hydroxyacetic acid), 30%	x	3-x	1	1	1	1	1	1			1	
Mine gas (methane)	2	3	3-x	2-3	1	1-2	1	1	2-3	1	2	
Urine (urine)	3	1	1	1	1	1	1	1	1	1	1	1
Urea, w.	x	x	x	1	1	2	1	1			1	2
Yeast, w.	x	1	1	1	1	1	1	1			1	1
Hot bitumen up to ° C	x	x	x	x	180	x	x	200	x	200	x	
Hot air: s. air												
Heiflteer to ° C	x	x	x	x	180	x	x	200	x	200	x	
Fuel oils	2	2	3	3	1	3	3	1	x	1	3	x
helium	1	1	1	1	1	1	1	1	1	1	1	1
heptane	2	2	x	2	1	2-3	2-3	1	2-3	1	x	3
hexaldehyde	2	3	3	2	x		1	1	2	1	2	
Hexahydrobenzene (o. Benzene, cyclohexane)	2	2	x	x	1	x	2	1	x	1	3-x	x
Hexalin (cyclohexanol)	3	x	2-3	1-2	1	x	1	1	2	1	2	1-2
n-hexane	2	2	x	1-2	1	1-2	3	1	1-2	1	x	x
Hexanol (hexyl alcohol)	3	x	2-3	2	2	2	1	1	1	1	2	2
hexanetriol	x	x	1	1	1	1	1	1			1	
witches	1	1	x	3	1		1	1	2			
wood oil	3	2	3	3	1	3	2	1	x	1	2	
Hydraulic oils s. Oils and fats												
Hydrazines (diamides)	x	x	3	2	2-3	1	1	1	2-3	1	1	
Hydrazine hydrate, aqueous	x	x	3	1	1	1	1	1	2	1	1	
Hydroquinone, w.	x	x	3	2-3	2	2	1	1	2		3	1
Hydroxylamine sulfate, w.	x	x	1	1	1	1		1			1	
Isobutanol (isobutyl alcohol)	3	x	1	1	1	1	1	1	1	1	2	1
isooctane	2	2	3	2	1	1	3	1	3	1	x	3
Isooctanol (isooctyl alcohol)	3	3	2	2	1	1	1	1	3	1	2	
isophorone	3-x	3-x	3-x	x	x			1	x	1	3	
Isopropanol (isopropyl alcohol)	2	3	1	1	1	2	1	1	2	1	1	1
isopropyl	3	3	2	x	x	2	2-3	1	x	1	1	3
Isopropylbenzene (o.-benzene, cumene, cumene)	3	3-x	x	x	1	x	x	1	x	1	x	x
isopropyl	3	3	x	x	1			1	x	1	2	
isopropyl	2	2	x	3	3	2-3	2-3	1	x	1	2	
auche	x	1	1	1	1	1	1	1	1	1	1	
Javelle lye (potassium hypochlorite)	3	2	2	2-3	1	1	3	1	2-3	3	1-2	x
Iodine tincture (5-10% alcohol, iodine solution)	x	x	x	2	1	2-3	2-3	1	3	1	1	3
Potash s. potassium hydroxide												
Potassium saltpeter (potassium nitrate9	2-3	1	1	1	1	1	1	1	1	3	1	2
Potassium acetate, w.	x	x	x	2-3	x	1	1	1	2-3	1	1	
Potassium aluminum sulfate (alum)	2	1	1-2	1	1	1	1	1	2	3	1	2
Potassium bicarbonate (potassium bicarbonate)	2	2	1	1	1	1	1	1	1	3	1	2
Potassium bichromate (potassium dichromate)	3	2	2	1-2	1	1	1	1	1	3	1	2
Potassium bisulfate (potassium hydrogen sulfate), w.	x	3-x	2	1	1		1	1			1	1
Potassium borate, w.	3	1	1	1	1	1	1	1	1	3	1	2
Potassium bromate, w. 10%	x	x	2-3	1	1	1	1	1			1	1
Potassium bromide, w.	2-3	1	1	1	1	1	1	1	1	3	1	1
Potassium carbonate (potash)	3	2	1	1	1	1	1	1	1	3	1	2
Potassium chlorate, w.	3	2	2	1	1	1	1	1	1	3	1	2
Potassium chloride (Sylvin), w.	2	1	1	1	1	1	1	1	1	3	1	2

Potassium chromate, w., 40%	x	x	2-3	1	1	1-2	1	1	1		1	
Potassium cyanide (cyanide), w.	3	2	1	1	2	1	1	1	1-2	3	1	2
Potassium dichromate, w.	3	2	2	1-2	1	1	1	1	1	3	1	2
Potassium hydroxide (caustic potash, potassium hydroxide) 10%	2-3	2	3	1-2	1	2	1	1	1	3	1	1
Potassium hydroxide (caustic potash, potassium hydroxide solution) 50%	x	3	x	1-2	2-3	2-3	1	1	1	x	1	1
Potassium hypochlorite (Javelle)	3	2	2	2-3	1	1	3	1	2-3	3	1-2	x
Potassium iodide, w.	3	2	2	1	1	1-2	1-2	1	1	2	1	1
Potassium nitrate, w. (Lime)	2-3	1	1	1	1	1	1	1	1	3	1	2
Potassium perchlorate, w.	x	x	2	1	1	1		1			1	
Potassium permanganate 10%, w.	3	1	1	1	1	1	1	1	2	2	1	2
Potassium peroxydisulfate (potassium persulfate)	x	3-x	3-x	1	1	2	1	1			1	1
Potassium phosphate (mono- and dibasic)	1	1	x	1	1		1	1	1	3	1	
potassium sulphate	1	1	1	1	1	1	1	1	1	3	1	1
potassium	1	1	1	1	1	1	1	1	1	3	1	
Lime, calcined (calcium oxide)	1	1	1	1	1	1	1	1	1	1	1	1
Lime, extinguished (calcium hydroxide w., Lime water, -milk)	3	2	1	1	1	2	1	1	1	1	1	1
Limestone (calcium carbonate)	1	1	1	1	1	1	1	1	1	1	1	1
Refrigerants (freons), application advice												
Calcined soda (sodium carbonate)	x	x	1	1	1	1	1	1	1	2	1	1
Carbolineum (Carbolineum) w	x	x	x	1	1	3	1	1	1	1		
Carbolic acid (phenol)	3-x	3-x	3	2-3	1	x	x	1	3	1	2-3	x
Kerosen (kerosene)	3	2	3	2-3	1	1	x	1	1	1	x	x
Ketones s. individual designations, in general, applies	x	x	2	x	x	x	2	1	x	1	x	3
Hydrofluoric acid, w.	x	x	x	2	x	1	1	1		1	1	
Silica (silicon dioxide)	1	1	1	1	1	1	1	1	1	1	1	1
bone oil	1	1	2-3	x	1	2		1	x		x	
Common salt (sodium chloride)	3	2	1	1	1	1	1	1	1	3	1	2
Carbon dioxide, gaseous, as well as naphtha and dry	1	1	1	1	1	1	1	1	1	1	1	1
Carbon dioxide solid (dry ice -80 ° C) resistant, but Easto and Polastomers become brittle												
Carbon disulfide (carbon disulfide)	3	2	x	x	1	2-3	x	1	x	1	2	x
Carbon monoxide	1	1	1	2	1	1	1	1	2	1	1	1
Carbonic acid s. carbon dioxide												
Carbon tetrachloride (carbon tetrachloride, tetra)	x	3	x	x	1	x	x	1	x	1	x	x
Coconut fat and oil	2	2	1	3	1	1	1	1	2	1	2	1-2
aqua regia	x	x	3	3	2	2-3	2	1	3	1	3	3
corn oil	1	1	1	2	2	2	1	1	2	1	2-3	2
Fuel s. petrol												
Creosote (coal tar)	3	3	x	x	1	2-3	2-3	1	3	1	2	3
Cresols (methylphenols)	x	x	x	x	1	x	2-3	1	3	1	2	x
copper acetate	x	x	x	2	x		1	1	2	1		
Copper chloride, w.	3	1	1	2	1	1	1	1	2	1	1*	2
copper cyanide	3	1	1	1	1	1	1	1	1	1	1*	2
copper fluoride	x	x	3	1	1		1	1			1	
Copper hydroxide (mountain blue)	1	1	1				1	1		1	1*	
Copper nitrate, w.	x	3	1	1	1	2	2	1	1	1	1*	2
Copper sulfate, w. (Bluestone)	2	1	1	2	1	1	1	1	1	1	1*	2

Nitrous oxide (nitrous oxide)	1	1	1	1	1	1	1	1	1	1	1	1
White spirit s. Benzine												
Lacquers necessarily determine composition												
Lanolin (wool fat)	1	1	3	3	1	2	2	1	3	1	2	2
Lye s. exact terms, generally	x	2	2	1	2	1	1-2	1	1-2	1	1-2	2
Lauryl alcohol (dodecyl alcohol)			2-3		1			1	1	1	3	
lavender oil	x	x	x	2-3	1			1	2-3			
Cod liver oil (oil) 1)	1	1	2	2	1	1	1	1	2	1	2	
Light gasoline s. Benzine												
Glue, animal	2	2	1	1	1	1	1	1	1	1	1	1
Leinöl1)	1	2	1	2	1	2	2	1	2	1	2-3	2
Liquefied gas (city gas)		3	3	3	1	1	1	1	x	1	2	
Solvent s. specific terms												
LPG s. corresponding chem. Name of the gas												
Air, atmospheric, oil-free, up to + ° C	85	80	175	120	200	70	90	200		200	125	
Air, oily, up to + ° C	85	80	175	120	200	70	90	200		200	125	
Magnesium chloride, w.	3	1	1	1-2	1	1-2	1	1	1-2	1	1	2
magnesium hydroxide	3	1	1	1	1	1	1	1	1	1	1	2
Magnesium silicate (talc)	1	1	1	1	1	1	1	1	1	1	1	2
magnesium sulfate	1	1	1	1	1	1	1	1	1	1	1	2
Magnesium sulphite, w.	3	1	1	1	1	1	1	1	1	1	1	2
Maische1)	3	1	1	1	1	1	1	1	1	1	1	1
Corn oil	2	2	2	1	1	2	2	1	1			2
Maleic acid, w.	x	x		x	1	1	2	1	3-x	1	1	2
Margarine fats and oils1)	1	1	3	1-2	1	2	2-3	1	2	1	2	2-3
Machine oils s. Oils, mineral												
seawater	x	2	1	1	1	1	1	1	1	1	1	1
MEK (methyl ethyl ketone)	x	x	x	x	x	x	2	1	3	1	1	2-3
Melamine			3		1	x		1	x			
Melasse1)	1	1	1	1	1	1	1	1	1	1	1	1
menthol	3	3	x	1	1		1	1			1-2	
mesityloxide	x	x	x	x	x	x	3	1	x	1	3	3
Methane (gas)	2	3	3-x	2-3	1	1-2	1	1	2-3	1	2	
Methanol (methyl alcohol)	2	3	1	1	2	1	1	1	1	1	1	1
Methyl acetate (methyl acetate)	x	x	x	x	x	x	2	1	2	1	1	2
methyl acrylate	x	x	x	x	x	x		1	2			
methyl alcohol	2	3	1	1	2	1	1	1	1	1	1	1
Methylamine, (methanamine) w.	x	x	x	1	2-3	3	1	1	2	1	1	
Methyl bromide (bromomethane)	x	x	x	3	2	x	3	1	x		x	x
Methyl chloride (chloromethane)	x	x	x	x	2	x	3	1	x	1	2	x
Methyl chloroform (trichloroethane)	x	x	x	x	1	3	x	1	x	1	2	x
Methylene chloride (dichloromethane)	x	x	x	x	2	x	x	1	x	1	3	
Methyl ethyl ketone (MEK)	x	x	x	x	x	x	2	1	3	1	1	2-3
Methyl glycol (methyl cellosolve)	x	x	x	3	x	x	2	1	2-3	1	1	2-3
methyl glycol acetate	x	x	x		x			1	x	1	1	
methyl isobutyl ketone	x	x	3	x	x	x	2-3	1	x	1	2	2-3
Methyloxirane (propylene oxide)	x	x	x	x	x		2	1	x	1	1	2-3
Methylphenols (cresols)	x	x	x	x	1	x	2-3	1	3	1	2	x
Methyl phthalate (dimethyl phthalate)				x	2			1	x	1	2	

Microbes (microorganisms)	x	1	3	1	1	1	2-3	1			2-3	
Milch1)	3	2	1	1	1	1	1	1	1	1	1	2
Lactic acid, w.1)	x	2	2	2	1	3	2	1	3	1		3
Mineral oil s. Oils, mineral												
Mixed acid I (sulfuric acid / nitric acid / water)	x	x	x	x	x	x	x	1	x	1	3	x
Mixed acid II (sulfuric acid / phosphoric acid / water)		x	x		1	1	1	3	1	2	1	2 x
Monochlorobenzene (o.-benzene)	x	x	x	x	1	x	3	1	x	1	x	
Monochloroacetic acid	x	x	x	2	x	2	x	1	3	1	2	x
Monochloromethane (methyl chloride)	x	x	x	x	2	x	3	1	x	1	2	x
morpholine	x	x	x	2	2	x	2	1	3		1	2-3
Monostyrene (styrene, monomer)	x	3	x	x	2	x	x	1	x	1	x	
Most, not fermented1)	3	1	1	1	1	1	1	1	1	1	1	1
Most fermented (fruit wine)	3	1	1	1	1	1	1	1	1	1	1	1
Engine oil s. Oil and fats, mineral. Clarify additives												
Myristyl alcohol = myristic alcohol (tetradecanol)	1	1	2	1	1	1		1	1	1	2	
Naphtha (petroleum)	2	2	3	x	1	2-3	2-3	1	3	1	3-x	x
Naphthalene (rock oil)	2	2	3	2-3	1	x	x	1	x	1		x
Sodium acetate, w.	x	3	x	2	x	1	1	1	2	1	1	1
Sodium benzoate, w.	1	1	2-3	1	1	1-2	1	1	1		1	1
Sodium bicarbonate (Na hydrogencarbonate), w.	x	2	1	1	1	1	1	1	1	2	1	1
Sodium bisulfate (Na hydrogensulfate)	x	x	1	1	1	1	1	1	1	2	1	1
Sodium bisulfite (Na hydrogensulfite), w.	x	x	1	1	1	1	1	1	1	2	1	1
Sodium Borate (Borax)	1	1	2	2	1	1	1	1	1	2	1	1
sodium				1-2	1	1-2	1	1	1		1	1
Sodium carbonate (soda)	x	x	1	1	1	1	1	1	1	2	1	1
Sodium chlorate, w.	3	2	1	1	1	1	1	1	1	3	1	2
Sodium chloride (common salt) 1)	3	2	1	1	1	1	1	1	1	3	1	2
sodium chlorite				1	1	3	2-3	1			2	
sodium cyanide	3	3	1	1	1	1	1	1	1	3	1	
Sodium dichromate	3	3	2	1	1		1	1	1	3	1	1
Sodium fluoroaluminate 10%	3	2-3	2		1	1	1	1	1	3	1	
sodium fluoride	3	2	2	1	1	1	1	1	1	3	1	1
Sodium hydroxide (caustic soda, caustic soda) 25%, 20 ° C		x	2	2	1	3	1	x	1	2	2	1 x
Sodium hydroxide (caustic soda, caustic soda) 25%, 100 ° C		x	x	x	3	x	x	x	1	x	3	1 x
Sodium hypochlorite 10%	3	2	2	1	1	1	1	1	2-3	1	2-3	1
Sodium hypochlorite 30%	x	3	3	1	2-3	1	2	1	1	1	x	2
sodium metaphosphate	1	1	1	2	1	1	1	1	2	1	1	
Sodium nitrate (chile saltpeter), w.	2	1	3	1	1	1	1	1	2	1	1	1
sodium nitrite	2	1	1	1	1	1	1	1	1	1	1	2
sodium	x	x	2	2	1	2	1	1	2	1	1	1
sodium	3	2	3	2	1-2	2	1	1	2-3	1	1	
Sodium phosphate (see also trisodium phosphate)		2	2	x	2	1	1	1	1	2	1	1 1
Sodium silicate, w.	x	3	1	1	1	1	1	1	1	1	1	2
Sodium sulfate (Glauber's salt), w.	3	1	1	1	1	1	1	1	1	1	1	1
Sodium sulfide, w.	2	2		1	x	1	1	1	1	1	1	1-2

Sodium sulfite, w.	2	1	1	1	1	1	1	1	1	1	1	1
Sodium thiosulfate (antichlorine, fixing salt)	3	2	1	1	1	1	1	1	1	1	1	1
Soda, also bicarboxylic acid N (sodium bicarbonate)		x	2	1	1	1	1	1	1	1	2	1 1
Caustic soda s. sodium hydroxide												
Sodium nitrate (sodium nitrate)	2	1	3	1	1	1	1	1	2	1	1	1
Natural gas (natural gas), nafl	2	1-2	2-3	1	1	1	2	1	1	1	2	
Natural gas (natural gas), dry	1	1	2-3	1	1	1	1	1	1	1	2	
nickel	3	2	2	x	x		1	1	2		2	
Nickel chloride, w.	3	2	1-2	1-2	1	1	1	1	2	1	2	2
Nickel sulfate, w.	2-3	2	1	1	1	1	1	1	1	1	1	2
Nitrating acid (mixed acid I)	x	x	x	x	x	x	x	1	x	1	3	x
Nitrobenzene (o.-benzene)	x	x	x	x	2	x	3	1	x	1	1	x
nitroglycerin	x	x	x	1	1	2	2	1			x	3
nitromethane	x	x	x	2-3	x	2-3	1	1	3			
nitropropane	x	x	x	x	x			1	x	1	1	
Nitroluole	x	x		x	3	x	1	1	x	1	x	
Nitrous gases (nitrogen oxides)	x	x	x	3	3	x	1	1	x		x	
Nitro dilution (petroleum ether)	2	2	x	1		x	2-3	1	1		2-3	
Nonyl alcohol (nonanol)	x	x	2	2	1		1	1	3	1	2	2
Obstpulpe1)	3	1	1	1	1	1	1	1	1	1	1	1
Fruit wines fermented1)	3	1	1	1	1	1	1	1	1	1	1	1
octane	1	1	x	x	1		1	1	x	1	x	1
Octanol = octyl alcohol	x	x	2	1	1	x	1	1	1	1	2	2
Oils and fats												
ASTM oil no. 1 20 ° C	1	1	2	1	1	2	2	1	1	1	3	
ASTM oil no. 2 20 ° C	1	2	3	2	2	2	3	1	1	1	x	
ASTM Oil No. 3 20 ° C	1	2	3	2	2	2	3	1	x	1	x	
-Dieselöl	1	2	3	3	1	3	2	1	x	1	3	2
-Heizöl	2	2	3	3	1	3	2	1	x	1	3	
-Hydraulic oils and liquids:												
~ Mineral oil base	1	1	3	2	1	3	3	1	2	1	3	3
~ Glycol base (polyalkyl glycols)	1	1-2	2					1		1	1	
~ Phosphate ester base (Pydraul)	x	x	2-3	x	1	x	x	1	x	1	1	
- Mineral, without additives, at 20 ° C	1	1	2-3	2-3	1	2	2	1	3	1	2-3	2
- mineral, without additives, to ° C	60	60	x	150	200	x	30	200		200	100	
- Plant (vegetable) 1)	1	1	3	1-2	1	2	2	1	2	1	2	2
-Roil oil, strongly aromatic	2	2	x	2	1	3	3	1	3	1		
Silicone oils and greases	1	1	3	1	1	1	1	1	2-3	1	1	1
Animal (Animal) 1)	1	1	3	1-2	1	2	2-3	1	3	1	2	
-Transformer Oils (Pyranole)	2	2	x	x	1	3	3	1	2-3	1	x	x
Olein (acid, oleic acid)	1	1	x	3-x	2	2	2-3	1	x	1	2	1
Oleum (fuming sulfuric acid)	x	x	x	x	1	x	x	1	x	1	x	x
Oleumdämpfe	x	x	x	3	3	3	x	1	x	1	x	x
Olivenöl1)	1	1	2	1-2	1	1	1	1	2	1	2	1
oleic acid	1	1	x	3-x	2	2	2-3	1	x	1	2	1
Oxalic acid, aqueous	x	x	2	2	1	2	1	1	3	1	1	1
Oxirane (ethylene oxide)	x	x	3-x	x	x	x	2-3	1	x	1	1	x
Ozone (atmospheric)	1-2	2-3	1	1	1	2	3	1	2-3	1	1	x
palmitic	1	1	3	3	2	2	1	1	3	1	1	1
Palm oil, palm kernel oil1)	1	2	1	3	1	1-2	2	1	x	1	2	2
Paraffin, paraffin oils	1	2	2	3	1-2	1-2	2	1	x	1	2	2-3
paraformaldehyde	2	1	1		2		1	1	2	1	1	
pectin	1	1		1	1	1		1			1	

Pentachlorophenol	x	x	3					1		1	2	
pentane	3	x	x	2	1	1	x	1	2	1	3	x
Pentanols (amyl alcohol)	3	3	3	1	2	1	1-2	1	1	1	1	2
Perborate (sodium borate)	1	1	2	2	1	1	1	1	1	2	1	1
Perchlorethylene (tetrachlor-ethylene)	x	x	2	x	1	x	x	1	x	1	x	x
Perchloric acid, w.	x	x	x	1-2	1	2-3	2	1	2	1	1	2
Perhydrol s. hydrogen peroxide												
Permanganate (potassium per-manganate) 10%, w.	3	1	1	1	1	1	1	1	2	2	1	2
Petroleum ether (nitro dilution)	2	2	x	1		x	2-3	1	1		2-3	
Petroleum)	1	1	2-3	2-3	1	x	2-3	1	2	1	x	3
Vegetable oils s. oils												
Phenol (carbolic acid), w.	3-x	3-x	3	2-3	1	x	x	1	3	1	2-3	x
Phenylbenzene (bi-o. Diphenyl)	x	x	x	x	1	x		1	x		1	
Phenyl ether (diphenyl oxide)	x	x	2	x	2-3	x	2-3	1	x	1	2	3
Phoron (diisopropylidenea-cetone)	x	x	x	x	x			1	x		1	
phosphorus oxychloride	x	x	x	3	1	x	2-3	1	3	1	1	
Phosphoric acid 3%	2-3	2	2	2	1	1	1	1	1	1	1	2
Phosphoric acid 50%	3	2	3	2	1	1	2	1	2	1	1	2
Phosphoric acid 85%	x	x	3	2	1	1	2	1	3	1	1	3
Phosphoric acid clay (aluminum phosphate)	3	1	1	1	1	1	1	1	1	1	1	2-3
phthalic			2	1	x	2	1	1	1		1	2
Phthalic anhydride, w.				1	x	3	1	1	1	1	1	
Phthalic acid esters (phthalates)	x	3	x	1	1	1	1	1			2-3	
picric	2-3	2-3	3	2	1-2	2-3	1	1	2	1	1	1
Mushrooms (microbes)	x	1	3	1	1	1	2-3	1			2-3	
Pinienöl1)	1	1	x	x	1	3	3	1	x	1		x
Polychlorinated biphenyls (pyra-nols, transformer oils)	2	2	x	x	1	3	3	1	2-3	1	x	x
Potash (potassium carbonate)	3	2	1	1	1	1	1	1	1	3	1	2
Pre-air (air, oily) to ° C	85	80	175	120	200	70	90	200		200	125	
Propane, liquid	1	1	3	3	1	1	x	1	2-3	1	1	x
propane	1	1	x	2-3	1	1	2	1	1	1	1	x
Propanol (propyl alcohol)	2	3	1-2	1-2	1	1-2	1	1	1-2	1	1	1
Propargyl alcohol (propyn-1-ol), w. 7%	x	x	2	2	1		1	1	1		2	2
Propionic acid (propionic acid)	x	x	x	3	1	1	1	1	x	1	1	
Propyl acetates (propyl acetate)	x	x	x	x	x		2	1	x	1	1	
Propyl alcohol (propanol)	2	3	1-2	1-2	1	1-2	1	1	1-2	1	1	1
propylamine	x	x	x	x	x			1	x	1	1	
Propylene (propene)	x	x	x	x	1	2		1	x	1	1	
propylene dichloride			x				x	1-2		1	2	x
Propylene glycols (propan-ediols)	x	x	1	1	1	3	1	1	2-3	1	1	1
Propylene oxide (Methyl-oxirane)	x	x	x	x	x		2	1	x	1	1	2-3
Pydraul (phosphate-based hydraulic fluids		x	x	2-3	x	1	x	x	1	x	1	1
Pyranols (transformer oils)	2	2	x	x	1	3	3	1	2-3	1	x	x
pyridine	x	x	x	3	3	x	1	1	x	1	2-3	2
pyrrole	x	x	2	3	3			1	3		1	
mercury	1	1	1	1	1	2	1	1	1-2	1	1	
Mercury chloride (sublimate)	1	1	1	1-2	1	2	1	1	1-2	1	1	2
mercury nitrate	2	1	1		1	1	1	1		1	1	2
Fuming sulfuric acid (oleum)	x	x	x	x	1	x	x	1	x	1	x	x
Rapeseed (seed) oil1)	2	2	x	2-3	1		x	1	2-3	1	2	x
Beef tallow, fat (animal oils)	1	1	3	1-2	1	2	2-3	1	3	1	2	

Rizinusöl1)	1	1	1	1	1		2-3	1	2	1		
Crude oil, strongly aromatic	2	2	x	2	1	3	3	1	3	1		
Cane sugar (sugar) w.	3	1	1	1	1	1	1	1	1	1	1	1
Rohzuckersaft1)	x	3	1	1	1	1	1	1	2	1	1	1
Red oil (aniline)	x	x	2	3	1-2	2-3	2-3	1	x	1	1	3
Sucrose (sugar) w.	3	1	1	1	1	1	1	1	1	1	1	1
Salicylic acid (spiro acid), w.	2	1	1	1	1	2	1	1	2	1	1	1
Sal ammoniac (ammonium chloride) w. 3%	3	1	1	2	1	1	1	1	1	1	1	2
Ammonia (ammonia 25% in water)	x	x	1	3	1	1	1	1	2	x	1	2
Nitric acid 10%	3	3	3	1-2	1	1	2	1	2	1	1	2
Nitric acid 25%	x	x	x	2	1-2	1	2-3	1	3	1	1	2-3
Nitric acid 50% (separating water)	x	x	x	3	1-2	2-3	2-3	1	x	1	1-2	3
Nitric acid 60%	x	x	x	3-x	2	2-3	x	1	x	1	3-x	x
Salt (if saline, sodium chloride) 1)	3	2	1	1	1	1	1	1	1	3	1	2
Hydrochloric acid 15%	3	2	3	1-2	1	1	1	1	3	1	1	1
Hydrochloric acid 38% (conc.)	x	x	3	1-2	1	2	1-2	1	3	1	1	1
Hydrochloric acid, gaseous = hydrogen chloride	3	2	1	1-2	1	1	1	1	2	1	1	1
Salt water (brine or sea water)	3	1	1	1	1	1	1	1	1	1	1	1
Sangajol = turpentine substitute s. Benzine												
Acids s. spec. Designation, generally valid	x	3	2	2-3	1	2-3	1-2	1	x	1	2-3	1-2
Pure oxygen up to + ° C	80	80	175	120	200	70	70	200		200	100	
Separating water (nitric acid 50%)	x	x	x	3	1-2	2-3	2-3	1	x	1	1-2	3
Lubricating oils and fats s. mineral oils, note additives!												
Black liquor (pulp production)	x	x	x	1	1			1				
Sulfur, melted, 90 ° C	3	2	1	1	1	x	x	1	2	1	2-3	
Sulfur dioxide s. sulphurous acid												
Sulfur ethers s. ether												
Carbon disulfide (carbon di-sulfide)	3	2	x	x	1	2-3	x	1	x	1	2	x
Sulfuric acid 10%	3	2	3	1	1	1	1	1	2	1	1	1
Sulfuric acid 30%	x	2	x	1	1	1	1	1	2	1	1	1
Sulfuric acid 50%	x	2	x	1	1	1	2	1	2	1	1	2
Sulfuric acid 75%	x	x	x	1-2	1	2	2	1	2-3	1	1	3
Sulfuric acid 90%	x	x	x	2	1	x	3	1	3	1	1	x
Concentrated sulfuric acid (oleum, fuming S.)	x	x	x	3-x	1	x	3	1	x	1	x	x
Sulfur trioxide (sulfuric an-hydride)	3	2	2-3	3	1	1	1	1	x	1	1	2
Hydrogen sulphide, moist	x	3-x	2-3	1	1	x	1	1	2-3	1	1	
Hydrogen sulphide, dry	x	3	2-3	1-2	1	x	1	1	2-3	1	1	
Sulphurous acid 10%, moist	3	2	2	1-2	2	2	1	1	3	1	1	2
Sulphurous acid 75%, moist	x	x	3	2-3	2	2-3	3	1	3	1	1	2
Pork fat (oils and fats, animal)	1	1	3	1-2	1	2	2-3	1	3	1	2	
Heavy gasoline (white spirit or white spirit)	1-2	1-2	x	x	1	3	1-2	1			x	x
sebacic	x	x		x	3-x	x		1			2	
Soap solution detergents)	x	2	1	1	1	1	1	1	1	1	1	
mustard	1	1		1	x	1-2	1	1	1			1
Silver Nitrate, w.	1	1	1	1	1	2	1	1	1-2		1	1
Silica (silica)	1	1	1	1	1	1	1	1	1	1	1	1
Silicone oils and fats s. Oils and fats												

Skydrol (phosphate ester based hydraulic fluids)		x	x	2-3	x	1	x	x	1	x	1	1
Soda, crystallized (sodium carbonate)	x	x	1	1	1	1	1	1	1	2	1	1
Soda, calcined s. Sodium carbonate anhydrous												
Sojabohnenöl1)	2	2	1	2-3	1	1	1-2	1	2-3	1	2	2
Brine (saline) 1)	3	1	1	1	1	1	1	1	1	1	1	1
Speck1)	1	1	2	3	1		1	1	x	1	1	1
Spindle oil s. Oils, mineral												
Alcohol (ethanol, denatured)	2	2	2	1	1	2-3	1-2	1	1	1	1	2
Town gas, fluorescent gas (natural gas, see natural gas)		3	3	3	1	1	1	1	x	1	2	
Strength, w.1)	1	1	1	1	1	1	1	1	2	1	1	1
Stärkesirup1)	2	2	1	1	1	1	1	1	1	1	1	1
Stearin (acid)	3	2	1-2	2-3	2	1-2	1-2	1	2	1	1	2
Rock oil (naphthalene)	2	2	3	2-3	1	x	x	1	x	1		x
Coal tar (see also Heiflteer)	3	3	x	x	1	2-3	2-3	1	3	1	2	3
Rock salt (halite)	3	2	1	1	1	1	1	1	1	3	1	2
Nitric oxide (nitrous oxide, nitrous oxide)	1	1	1	1	1	1	1	1	1	1	1	1
nitrogen	1	1	1	1	1	1	1	1	1	1	1	1
Nitrogen oxides (nitrous gases)	x	x	x	3	3	x	1	1	x		x	
Radiation, radioactive	2	2	x	1		3	x	x	1		2	
Radiation, UV	2	2	2	1	1	2	3	1			x	
Styrene, monomer	x	3	x	x	2	x	x	1	x	1	x	
Sublimate (mercuric chloride)	1	1	1	1-2	1	2	1	1	1-2	1	1	2
Sulfonic acids, general	x	x	1	1	2	1		1			2-3	
Marsh gas (biogas)	1	1		1	1	1	1	1			x	
tallow	1	1	1	1	1	1	1	1	1	1	2	1
Talc (-um) (magnesium silicate)	1	1	1	1	1	1	1	1	1	1	1	2
Tannin (tannic acid)	2-3	2	2	1-2	1-2	1	1	1	1-2	1	1	1
Tar (see also Heiflteer)	x	x	2	x	1	2	2	1	3	1	x	
Turpentine (-oil)	3	x	x	x	1	x	x	1	x	1	3-x	x
white spirit	1-2	1-2	x	x	1	3	1-2	1			x	x
White spirit	1-2	1-2	x	x	1	3	1-2	1			x	x
Tetrachloroethane	x	x	x	x	2	3	x	1	x		x	x
Tetrachlorethylene (perchlorethylene)	3	3	x	x	1	x	2-3	1	x	1	x	x
Carbon tetrachloride (tetrachloromethane, tetra,												
Carbon tetrachloride)	3	3	x	x	1	x	x	1	x	1	x	x
Tetrahydrofuran (THF)	3	3	x	x	x	x	3	1	x	1	2	3
Tetralin = tetrahydronaphthalene	x	x	x	x	1	1	3	1	x	1	x	x
thionyl chloride	x	x	x	x	3	x	x	1	x		x	x
thiophene	x	x	x	x	x	x	1	1			x	
animal fat	1	1	3	1-2	1	2	2-3	1	3	1	2	
ink	1	1	1	1	1	3	1	1			1	1
toluene	x	x	x	x	1	x	3-x	1	x	1	x	x
Tran (cod liver oil)	1	1	2	2	1	1	1	1	2	1	2	
transformer oils	2	2	x	x	1	3	3	1	2-3	1	x	x
Grape juice, unworn1)	3	1	1	1	1	1	1	1	1	1	1	1
Dextrose (glucose)	2	1	1	1	1	1	1	1	1	1	1	1
Tributyl phosphate (TBP)	x	x	x	x	x	x	1	1	x	1	1	
Trichloroacetic acid (TCA)	x	x	x	x	3	2	1-2	1	x		3	3
Trichloroethane (methylchloroform)	x	x	x	x	1	3	x	1	x	1	2	x
Trichlorethylene (ethylene trichloride)	x	x	x	x	1-2	x	x	1	x	1	2	x

Trichloromethane (chloroform)	x	x	x	x	1	x	x	1	x	1	x	x
tricresyl	x	x	3	x	1-2	x	2	1	3	1	1	1
triethanolamine	x	x	1	2-3	1	x	1	1	2	1	1	1
triethylamine	2	2	x		x	2	1	1	2	1	1	
Triethylene glycol (triglycol)	2	2	2	1	1			1			1	1
trisodium phosphate	3	3	1	1	1	1	1	1	1	1	1	1
trioctyl	x	x	3	x	x	x	1	1	x	1	1	
Tungöl (China Tea Tree Oil)	2	2	3	2-3	2			2	1		3	
Urine (urine)	3	1	1	1	1	1	1	1	1	1	1	1
Vaseline s. Oils and Fats, mineral												
Thinner for paints and varnishes Determine composition												
Vinyl acetate (vinyl acetate)	x	x	x	1	2	x	1	1	1	1	1	1
Vinyl chloride (chloroethene), monomer	x	x	x	x	1	x	x	1	x	1	2	x
Vitriol (copper sulphate)	2	1	1	2	1	1	1	1	1	1	1*	2
Vitriol oil (oleum)	x	x	x	x	1	x	x	1	x	1	x	x
Detergent, synth. 20 ° C	3	2	1	1	1	1	1	1	2	1	1	1
Water:												
Drink or mineral water, without additives1) to ° C		25	120	100	150	70	80	200		200	100	
-distilled, demineralized, desalted Condensation: does not affect polymers, but polymer affects water												
-Mineral water CO2 saturated1)	3	1	1	1	1	1	1	1	1	1	1	1
-Königswasser	x	x	3	3	2	2-3	2	1	3	1	3	3
-Meerwasser	x	2	1	1	1	1	1	1	1	1	1	1
Water vapor up to ° C	x	x	120	100	150	x	x	200		200	135	
Water glass (sodium silicate)	x	3	1	1	1	1	1	1	1	1	1	2
Hydrogen (gas)	1	1	3	1	1	1	1	1	1	1	1	1
Hydrogen peroxide 10%	x	2	1	2	1-2	1	2	1	x	1	1-2	2
Hydrogen peroxide 30%	x	2	1	2	1	2	2-3	1	x	1	2-3	2
Wines red and white1)	3	1	1	1	1	1	2	1	2-3	1	1	1
Tartaric acid, aqueous1)	3	1	1	1	1	1	1	1	1-2	1		
White Spirit (white spirit)	1-2	1-2	x	x	1	3	1-2	1			x	x
Bismuth carbonate (bismuth carbonate)	1	1	1		1	1	1	1	1	1	1	
Wool fat (lanolin)	1	1	3	3	1	2	2	1	3	1	2	2
Xylamon (wood preservation primer)	3	3	x	x	2			1			x	
Xylene (xylene)	x	x	x	x	1-2	x	2-3	1	x	1	x	x
Xylidine (dimethylaniline)	x	x	1	1	1			1	1		3	

* at 20 ° C ambient temperature1) if as foodstuff: require food-grade qualities.

The information given in the table has been compiled and compiled according to our own tests, recommendations from our primary suppliers and our customers' reports. Since individual operating conditions additionally affect the applicability of each hose, the data can only be indicative. In many cases, where there is still no operational experience, we recommend a preliminary test at the user in order to avoid risks. This is particularly recommended for mixtures.

RESISTANCE LIST E & E SPECIAL TPU

Rating:
1 = resistant, hardly any change in volume 0-3% largely stable, volume change 4-15
2 = %
3 = conditionally stable, volume change 16-30%
4 = unstable, volume change> 30%
5 = soluble

acetone	4
Aluminum chloride 10%	2
Formic acid 3 n	4
Ammonia 3 b	1
Ammonium chloride 10 & ig	2
aniline	4
Anon	4
ASTM oil 1	1
ASTM oil 2	1
ASTM oil 3	1
ASTM-Fuel A	1
ASTM-Fuel B	3
ASTM-Fuel C	3
benzene	4
benzyl alcohol	5
Brake fluid ATE	4
Brake fluid ATS	4
butane gas	2
butanol	4
butyl	4
Calium chloride 10% and 40%	2
Calcium chloride 10% and 40%	2
chlorobenzene	4
chloroform	4
Chromic acid 3 n	4
Cyclohexan	3
Dekalin	3
Dieselöl	2
Dimethylacetamid	5
Dimethylformamid	5
Eisen-III-chlorid 10 %ig	2
Essigsäure 3 n	2
Ethanol	3
Ether	3
Ethylacetat	4
Ethylenchlorid	2
Flurokohlenwasserstoff Frigen 12	3
Flurokohlenwasserstoff Frigen 22	3
Getriebeöl SAE 90	1
Glycerin	1
Glykol	1
Isooktan = Kraftstoff 1*	1
70 Isooktan: 30 Toluol = Kraftstoff 2*	3
50 Isooktan: 50 Toluol = Kraftstoff 3*	3

isopropanol	3
Potassium hydroxide solution 3 n	1
Potassium bichromate 10%	2
potassium nitrate	2
Potassium permanganate 5%	4
Kerosene	1
Magnesium chloride 10% and 30%	2
marsh gas	2
methanol	3
methyl acetate	4
methylene chloride	4
Methylenthylketon	3
methylene glycol	4
methyl glycol acetate	4
Lactic acid 3 n	3
see ASTM	
Mineral oil oils	
Sodium bisulfate 10%	2
Sodium chloride 10%	2
Natriumhypochloridlsg. PH 13	1
sodium	2
Sodium hydroxide 10%	1
N-methylpyrrolidone	5
ozone	1
paraffin oil	1
perchlorethylene	4
petroleum ether	1
petroleum	2
Phosphoric acid 3 n	4
propane	2
pyridine	5
Nitric acid 3 n	4
Hydrochloric acid 3 n	1
Greases: calcium soap grease	1
Greases: lithium soap grease	1
Greases: sodium soap grease	1
Carbon disulphide	4
Sulfuric acid 3 n	1
Turpentine (pine)	2
Tetrachlorethylene	4
Carbon tetrachloride	4
tetrahydrofuran	4
toluene	4
trichlorethylene	4
Water dist.	1
Water techn. seawater	1
Hydrogen peroxide 3%	1
xylene	4
Citric acid 3 n	2

* **DIN 53521**

DISCLAIMER

The technical data in this operating manual correspond to the status at the time of printing and have been determined to the best of our knowledge. Nevertheless, we reserve the right to errors and misprints. The details are for the closer item description, but are not guaranteed property according to ABGB, unless they are expressly designated as such. Make sure that you always use the latest version of the operating instructions. The latest operating instructions as well as the system warranty and ABGB can be found on the website: www.bltechnology.at.

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BILTON International GmbH
Gewerbepark Harham 2
5760 Saalfelden / Austria
+43 6582 71164
www.bltechnology.at