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FBL 055/11 EFA

INNOVATORS
IN FLOW TECHNOLOGY

TRANSFERRING
EMPTYING
CIRCULATING
MIXING
DOSING

RESISTANCE CHART

INNOVATORS
IN FLOW TECHNOLOGY

CONSTRUCTION MATERIALS OF PUMPS AND LIQUID METERS ...

... show very different characteristics. Not every material suits every liquid to the same extent.

The new FLUX Resistance Chart assists you in selecting your pump and/or liquid meter. It is a clearly arranged guide to show you which material suits which liquid or – the other way round – which "combinations" you should better avoid. Please consider that the chemical resistance of the construction material depends on many parameters. Even slight variations of a liquid (e. g. impurities) may have a great influence on the chemical resistance of this product.

If there are no particular indications given in this chart, the information is based on commercial purity and concentration. In case of doubt, especially for new and unknown applications, we kindly ask you to contact us for further verification.

The information given in this Resistance Chart is based on recommendations by our suppliers, reports of our clients and on the experience gained by us. This chart has been compiled by our specialists with greatest circumspection. Nevertheless this chart may only serve as a guide. Our classification may not be applied to every condition of use. Considering the multitude of decisive factors, the chemical resistance is an important one, but, in very the end, only one element in the totality of operating conditions. This is the reason why we cannot assume any liability for the indications in this Resistance Chart.

NOTE For transferring high flammability liquids, which are underlined in red, only pumps in stainless steel or Hastelloy C together with explosionproof motors must be used, which are tested and certified according to Directive 94/9/EC-ATEX 100a. Please observe all relevant Health & Safety Regulations.

Description	Chemical Formula	Concentration in %	Density (kg/dm³)	Danger class (VbF)	Temperature (°C)	Stainless Steel 316 Ti	Hastelloy C	Aluminium alloy	PP	PVDF	ETFE	PPS	FPM	NBR	EPDM	PTFE/FEP
Acetaldehyde	CH3-CHO	40			20	+	+	+	+	+	+	+	+	–	+	+
Acetaldehyde	CH3-CHO	TR	0,79	B	20	+	+	o	o	+	+	+	o	–	o	+
Acetamide	CH3-CO-NH2	TR	0,98		20	+	+	o	+	+	+	+	+	+	+	+
Acetanhydride	(CH3CO)2O	TR	1,09	AII	20	+	+	+	o	o	+	+	o	–	o	+
Acetic Acid	CH3COOH	10			20	+	+	o	+	+	+	+	o	o	+	+
Acetic Acid	CH3COOH	25			20	+	+	o	+	+	+	+	–	–	+	+
Acetic Acid	CH3COOH	50			20	+	+	o	+	+	+	+	–	–	o	+
Acetic Acid	CH3COOH	80			20	+	+	–	+	+	+	+	–	–	o	+
Acetic Acid	CH3COOH	100	1,05		20	+	+	–	o	+	+	+	–	–	o	+
Acetic Methyl Ester	CH3CO2CH3	100	0,93	AI	20	+	+	–	+	+	+	+	–	–	–	+
Aceton	CH3-CO-CH3+H2O	10		B	20	+	+	+	+	+	+	+	o	–	+	+
Aceton	CH3-CO-CH3	TR	0,79	B	20	+	+	+	+	o	+	+	–	–	+	+
Acetonitrile	CH3-CN	TR	0,78	B	20	+	+	+	+	o	+	+	o	–	o	+
Acrylonitrile	CH2=CH-CN	TR	0,81	AI	20	+	+	+	+	+	+	+	o	–	o	+
Adipic Acid	C7H1202	GL	0,89	AII	20	+	+	o	+	+	+	+	+	+	+	+
Allyl Alcohol	H2C=CH-CH2-OH	96	0,87	B	20	+	+	o	+	+	+	+	o	+	o	+
Aluminium Chloride	AlCl3	10			20	o	+	–	+	+	+	+	+	+	+	+
Aluminium Chloride	AlCl3	GL	2,40		20	–	+	–	+	+	+	+	+	+	+	+
Aluminium Nitrate	Al(NO3)3	GL			20	+	+	–	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al2(SO4)3	10			20	+	+	–	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al2(SO4)3	GL	1,61		20	+	+	–	+	+	+	+	+	+	+	+

Ammonia Water	NH4OH	GL			20	+	+	+	+	+	+	+	–	+	+	+
Ammonium Acetate	CH3-COONH4+H2O				20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Bromide	NH4Br+H2O	40	1,27		20	o	+	–	+	+	+	+	+	+	+	+
Ammonium Carbonate	(NH4)2CO3+H2O	25			20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Chloride	NH4Cl+H2O	GL	1,07		20	+	+	–	+	+	+	+	+	+	+	+
Ammonium Fluoride	NH4F+H2O	14			20	o	+	–	+	+	+	+	+	+	+	+
Ammonium Fluosilicate	(NH4)SiF6+H2O	TR			20	+	+	–	+	+	+	+	+	+	+	+
Ammonium Hydrogen Fluoride	(NH4)HF2	50			20	o	o	–	+	+	+	+	+	–	+	+
Ammonium Nitrate	NH4NO3+H2O	10			20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH4NO3+H2O	50	1,23		20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH4NO3+H2O	GL			20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Oxalate	(COONH4)2 + H2O	TR	1,50		20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Perchlorate	NH4ClO4+H2O	14	1,07		20	+	+	+	o	+	+	+	+	o	o	+
Ammonium Phosphate	NH4H2PO4+H2O	10			20	+	+	–	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH4)2SO4+H2O	10			20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH4)2SO4+H2O	50	1,28		20	+	+	+	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH4)2SO4+H2O	GL	1,30		20	+[1)]	+	+	+[1)]	+	+	o	+	+	+	+
Ammonium Sulphide	NH4S+H2O	10			20	+	+	–	+	+	+	+	+	+	+	+
Amyl Acetate	CH3-COOC5H11	TR	0,88	All	20	+	+	+	o	+	+	+	–	–	o	+
Amyl Alcohol	C5H11OH	TR	0,82	All	20	+	+	+	+	+	+	+	+	+	+	+

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Amyl Chloride	CH3(CH2)4Cl	TR	0,87	AI	20	o	+	–	+	+	+	+	+	o	+	+
Aniline	C6H5NH2	TR	1,01	AIII	20	+	+	+	o	+	+	+	+	–	o	+
Aqua Regia	3HCl+HNO3				20	–	–	–	–	o	+	–	o	–	o	+
Arsenic Acid	H3ASO4	10			20	+	+	–	+	+	+	+	+	+	+	+
Arsenic Acid	H3ASO4	80			20	+	+	–	+	+	+	+	+	+	+	+
Barium Chloride	BaCl2	10			20	–	+	o	+	+	+	+	+	+	+	+
Barium Chloride	BaCl2	25	1,27		20	o	+	o	+	+	+	+	+	+	+	+
Barium Hydroxide	Ba(OH)2	GL			20	+[1)]	+	–	+[1)]	+	+	o	+	+	+	+
Barium Sulphide	BaS	10			20	+	+	+	+	+	+	+	+	+	+	+
Benzaldehyde	C6H5CHO	10	1,05		20	+[1)]	+	+	o	+	+	o	+	o	o	+
Benzaldehyde	C6H5CHO	30	1,05		20	+[1)]	+	o	–	+	+	o	+	–	–	+
Benzaldehyde	C6H5CHO	TR	1,05	AIII	20	+[1)]	+	o	o	+	+	+	o	–	o	+
Benzene	C6H6	TR	0,88	AI	20	+	+	+	–	+	+	+	+	–	–	+
Benzoic Acid	C6H5COOH	10	1,27		20	+	+	+	+	+	+	+	+	–	–	+
Benzyl Alcohol	C6H5-CH2OH	TR	1,04		20	+	+	+	+	+	+	+	o	–	+	+
Benzyl Chloride	C6H5-CH2Cl		1,11	AIII	20	+	+	–	–	+	+	+	+	–	–	+
Borax	Na2B4O7+10 H2O	10	1,03		20	+	+	–	+	+	+	+	+	+	+	+
Borax	Na2B4O7+10 H2O	GL			20	+	+	–	+	+	+	+	+	+	+	+
Boric Acid	H3BO3+H2O	10	1,01		20	+	+	+	+	+	+	+	+	+	+	+
Boric Acid	H3BO3+H2O	GL			20	+	+	–	+	+	+	+	+	+	+	+
Boron Trifluoride	BF3+H2O	10			20	o	o	–	+	+	+	+	+	+	+	+

Bromic Acid	HBrO3	10			20	o	+	–	+[1]	+	+	o	+	–	+	+
Bromine	Br2	TR	3,19		20	–	+	+	–	+	+	–	o	–	–	+
Butane Diol	HO(CH2)4OH	10			20	+	+	+	+	+	+	+	+	+	+	+
Butane Diol	HO(CH2)4OH	TR			20	+	+	+	o	+	+	+	+	–	+	+
Butane Triol	C4H10O	TR			20	+	+	–	+	+	+	+	o	+	+	+
Butanol	C4H9OH	TR	0,81	All	20	+	+	+	+	+	+	+	+	+	+	+
Butyl Acetate	C6H12O2	TR	0,88	All	20	+[1]	+	+	o	+	+	+	o	–	+	+
Butyl Acrylate	C5H8O2	TR		Al	20	+	+	o	–	o	+	+	–	–	o	+
Butyl Chloride	C4H9Cl	TR	0,89	Al	20	o	+	–	+	+	+	+	–	–	–	+
Butyl Phenol	HOC6H4C(CH3)3	TR			20	+	+	–	+	+	+	+	o	–	–	+
Butyric Acid	C3H7COOH	20	0,88		20	+	+	+	–	+	+	+	+	–	+	+
Butyric Acid	C3H7COOH	TR	0,96		20	+	+	+	–	+	+	+	o	–	o	+
Calcium Bisulphite	Ca(HSO3)2	10			20	+[1]	+	o	+[1]	+	+	o	+	–	+	+
Calcium Bisulphite	Ca(HSO3)2	GL			20	+[1]	+	o	+[1]	+	+	–	+	–	+	+
Calcium Chlorate	CaClO3+H2O	10			20	+	+	o	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl2+H2O	10			20	+	+	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl2+H2O	GL	1,40		20	+	+	o	+	+	+	+	+	+	+	+
Calcium Hydroxide	Ca(OH)2	15			20	+	+	–	+	+	+	+	+	+	+	+
Calcium Hypochlorite	Ca(OCl)2	10			20	o	+	–	+[1]	+	+	o	+	+	+	+
Calcium Nitrate	Ca(NO3)2	50	1,48		20	+	+	+	+	+	+	+	+	+	+	+

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Camphor	C10H16O				20	+	+	+	+	+	+	+	o	+	o	+
Caprylic Acid	CH3(CH2)6 COOH		0,92		20	+[1)]	+	–	+[1)]	+	+	o	+	–	+	+
Carbon Bisulphide	CS2	TR	1,27	AI	20	+[1)]	+	+	+[1)]	+	+	o	+	–	o	+
Castor Oil		H	0,96		20	+	+	+	+	+	+	+	+	+	+	+
Chloric Acid	HClO3	10			20	o	+	–	+[1)]	+	+	–	+	–	+	+
Chlorinated Diphenyl	C12H9Cl	TR			20	+[1)]	+	+	–	+	+	o	+	–	–	+
Chlorine Water	Cl2 + H2O	GL			20	o	+	–	o	+	+	o	–	–	+	+
Chloroacetic Acid	C2H3ClO2	85	1,36		20	–	+	–	+[1)]	+	+	o	+	–	+	+
Chloroacetic Acid	C2H3ClO2	98			20	–	+	–	+[1)]	+	+	o	+	–	+	+
Chlorobenzene	C6H5Cl	TR	1,11	AII	20	+	+	+	o	+	+	+	+	–	–	+
Chloroethane	C2H5Cl	TR	0,92		20	+	+	+	–	+	+	+	o	–	o	+
Chloroethanol	ClH2C-CH2OH	TR	1,20		20	+[1)]	+	–	+[1)]	+	+	o	–	+	o	+
Chloroform	CHCl3	TR	1,48		20	+[1)]	+	–	o	+	+	–	o	–	–	+
Chlorosulfonic Acid	HOSO2Cl	TR	1,77		20	+[1)]	+	–	–	–	+	–	o	–	–	+
Chromic Acid	CrO3+H2O	30			20	o	+	–	o	+	+	o	+	–	–	+
Chromic Acid	CrO3+H2O	50			20	o	o	–	–	+	+	o	+	–	–	+
Chromic-Sulfuric-Acid-Mixture	H2SO4+H2O+CrO3	50			20	o	o	–	o	+	+	–	+	–	–	+
Citric Acid	C6H8O7	50	1,22		20	+	+	–	+	+	+	+	+	+	+	+
Copper Acetate	(CH3CO2)2Cu	50			20	+	+	–	+	+	+	+	+	+	+	+
Copper Nitrate	Cu(NO3)2	25	1,25		20	+	+	+	o	+	+	+	+	+	+	+

Copper Sulphate	CuSO4	18	1,21		20	+	+	–	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO4	GL			20	+	+	–	o	+	+	+	+	+	+	+
Corn Oil		TR			20	+	+	–	+	+	+	+	+	+	+	+
Cupric Chloride	CuCl2	20	1,21		20	o	+	–	+	+	+	+	+	+	+	+
Cuprous Chloride	CuCl	10			20	o	+	–	+	+	+	+	+	+	+	+
Cyclohexane	C6H12	TR	0,78	AI	20	+	+	+	+	+	+	+	+	+	–	+
Cyclohexanol	C6H12O	TR	0,94	AIII	20	+	+	–	+	+	+	+	o	o	o	+
Cyclohexanone	C6H11OO	TR	0,95	AII	20	+	+	+	+	+	+	+	–	–	o	+
Decaline	C10H18	TR	0,88	AIII	20	+	+	+	o	+	+	+	+	o	–	+
Dextrine	C6H10O5+H2O	18			20	+	+	+	+	+	+	+	+	+	+	+
Dextrine	C6H10O5+H2O	GL			20	+	+	+	+	+	+	+	+	+	+	+
Diacetone Alcohol	(CH3)2C(OH)CH2COCH3	TR		B	20	+	+	–	–	+	+	+	+	–	+	+
Dibutyl Ether	C8H18O	TR	0,77	AII	20	+[1]	+	–	o	+	+	o	–	+	o	+
Dibutyl Phthalate	C6H4(CO2C4H9)2	TR	1,05		20	+	+	+	+	+	+	+	o	–	o	+
Dibutyl Sebacate	C18H34O4	TR	0,94		20	+[1]	+	–	+[1]	+	+	o	o	–	–	+
Dichloro Acetic Acid	CHCl2CO2H	TR	1,56		20	–	+	–	+[1]	+	+	–	o	–	+	+
Dichlorodifluoromethane	CF2Cl2	TR	1,32		20	+	+	–	–	+	+[1]	+	o	o	o	+
Dichloroethylene 1,1	C2H2Cl2	TR	1,22	AI	20	+[1]	+	–	o	+	+	–	+	+	–	+
Diesel Fuel		H		AIII	20	+	+	+	o	+	+	+	+	+	–	+
Diethanolamine	HN(CH2CH2OH)2		1,10		20	+	+	–	+	o	+	+	o	–	+	+

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Diethylamine	C4H11N	10	0,70	B	20	+	+	+	+	o	+	–	–	–	+	+
Diglycolic Acid	C4H6O6	30			20	+[1)]	+	–	+[1)]	+	+	–	+	o	+	+
Diglycolic Acid	C4H6O6	GL			20	+[1)]	+	–	+[1)]	+	+	–	+	o	+	+
Diisobutyl Ketone	C9H18O	TR			20	+	+	–	+	+	+	+	+	–	+	+
Dimethyl Formamide (DMF)	C3H7NO	TR	0,95		20	+	+	–	+	–	+	+	–	o	+	+
Dimethyl Phthalate (DMP)	C6H4(COOCH3)2	TR			20	+	+	–	+	+	+	+	–	–	–	+
Dimethylamine	(CH3)2NH	TR	0,73		20	+	+	–	+	o	+	+	o	–	o	+
Dinonyl Phthalate	C26H42O4	TR			20	+	+	–	+	+	+	+	–	–	–	+
Dioctyl Phthalate	C24H38O4	TR			20	+	+	–	o	+	+	+	+	–	–	+
Dioxane	C4H8O2	TR	1,03	B	20	+	+	+	–	+	+	+	–	o	+	+
Epichlorhydrine	H2C-O-CH-CH2Cl			AII	20	o	+	–	+	+	+	+	–	–	–	+
Essential Oils					20	+	+	+	+	+	+	+	+	–	–	+
Ethane Dicarboxylic Acid	C4H6O4	50	1,06		20	+	+	–	+	+	+	+	+	+	+	+
Ethanol	CH3-CH2-OH	TR	0,79	B	20	+	+	+	+	+	+	+	+	+	+	+
Ether	(C2H5)2O	TR	0,71	AI	20	+	+	+	–	+	+	+	o	o	o	+
Ethyl Acetate	H3C-COOC2H5	TR	0,90	AI	20	+	+	+	o	o	+	+	o	–	o	+
Ethyl Benzene	C6H5-C2H5	TR	0,87	AII	20	+[1)]	+	+	o	+	+	–	o	–	–	+
Ethyl Chloracetate	ClH2C-CO-OC2H5			AII	20	o	+	–	+	o	+	+	–	–	+	+
Ethyl Dichloride	H3 C-CHCl2		1,20	AI	20	+	+	+	o	+	+	+	+	o	o	+
Ethyl Glycol	C2H5-O-CH2-HC2OH	TR	0,93	AII	20	+	+	–	–	+	+	+	+	+	–	+
Ethylene Bromide	CH2Br-CH2Br	TR	2,18		20	+[1)]	+	+	+[1)]	o	+	o	+	o	o	+

Ethylene Diamine	H2N-CH2-CH2-NH2	TR	0,98		20	+	+	+	+	+	+	+	o	o	+	+
Ethylene Glycol	C2H6O2	TR	1,11		20	+	+	+	+	+	+	+	+	+	+	+
Fatty Acids	C17H33CO2H	100	0,90		20	+	+	–	o	+	+	+	+	o	–	+
Ferric Sulphate	Fe2(SO4)3	50	1,61		20	+	+	–	+	+	+	+	+	+	+	+
Ferrichloride	FeCl3+H2O	50	1,55		20	–	+	–	+	+	+	+	+	+	+	+
Ferrochloride	FeCl2+H2O	10	1,09		20	+	+	–	+	+	+	+	+	+	+	+
Ferrochloride	FeCl2+H2O	50			20	+	+	–	+	+	+	+	+	+	+	+
Ferrosulphate	FeSO4	20	1,21		20	+[1)]	+	+	+[1)]	+	+	o	+	+	+	+
Ferrous Nitrate	Fe(NO3)2	TR			20	+	+	–	+	+	+	+	+	+	+	+
Formaldehyde	CH2O+H2O	10			20	+	+	–	+	+	+	+	+	+	+	+
Formaldehyde	CH2O+H2O	35	1,10	AIII	20	+	+	–	+	+	+	+	+	–	+	+
Formaldehyde	CH2O+H2O	40		AIII	20	+	+	–	+	+	+	+	+	o	+	+
Formamide	HCONH2	100			20	+	+	+	+	+	+	+	o	+	+	+
Formic Acid	HCOOH	50			20	+	+	–	+	+	+	+	+	–	+	+
Formic Acid	HCOOH	TR	1,22	AII	20	+	+	–	+	+	+	+	–	–	+	+
Fruit Juice		H			20	+	+	o	+	+	+	+	+	+	+	+
Fuel Oil		H		AIII	20	+	+	+	+	+	+	+	+	+	+	+
Furfuryl Alcohol	C5H6O2	TR	1,13	AIII	20	+	+	+	+	+	+	+	o	–	+	+
Gallic Acid	C6H2(OH)3CO2H	50			20	+[1)]	+	–	+[1)]	+	+	–	+	+	+	+
Gluconic Acid	C6H12O7				20	+	+	–	+	+	+	+	+	+	+	+

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Glucose Solution	C6H12O6	TR	1,13		20	+	+	+	+	+	+	+	+	+	+	+
Glycerine	C3H8O3	TR	1,26		20	+	+	+	+	+	+	+	+	o	+	+
Glycolic Acid	C2H4O3	37			20	+	+	–	+	+	+	+	+	+	+	+
Glycolic Acid	C2H4O3	70			20	+	+	–	+	+	+	+	+	–	+	+
Heptane	C7H16	TR	0,68	AI	20	+	+	+	+	+	+	+	+	+	–	+
Hexamethylentetramine	(CH2)6N4	10			20	+	+	+	–	+	+	+	o	–	–	+
Hexane	C6H14	TR		AI	20	+	+	+	+	+	+	+	+	+	–	+
Hexanol	C6H13OH		0,82	AIII	20	+	+	–	+	+	+	+	+	–	+	+
Hydrazine	H2N-NH2	TR	1,08	B	20	+[1)]	+	–	+[1)]	+	+	–	+	+	+	+
Hydriodic Acid	HJ	TR			20	o	o	–	+[1)]	+	+	–	+	+	+	+
Hydrobromic Acid	HBr + H2O	10	1,07		20	–	o	–	+[1)]	+	+	o	+	–	+	+
Hydrobromic Acid	HBr + H2O	48	1,44		20	–	o	–	+[1)]	+	+	o	+	o	+	+
Hydrochloric Acid	HCl	10	1,05		20	–	+	–	+	+	+	+	+	+	+	+
Hydrochloric Acid	HCl	30	1,15		20	–	+	–	+	+	+	+	+	–	+	+
Hydrochloric Acid	HCl	conc.	1,20		20	–	+	–	+	+	+	+	+	–	+	+
Hydrocyanic Acid	HCN	GL			20	+	+	–	+	+	+	+	o	–	o	+
Hydrofluoric Acid	HF	40	1,06		20	–	o	–	+[1)]	+	+	–	+	–	o	+
Hydrofluoric Acid	HF	60			20	–	o	–	+[1)]	+	+	–	+	–	o	+
Hydrofluoric Acid	HF	70	1,23		20	–	o	–	o	+	+	–	+	–	o	+
Hydrofluosilicic Acid	H2SiF6	32	1,17		20	–	+	–	+[1)]	+	+	–	+	o	+	+
Hydrogen Cyanide	HCN	TR	0,69		20	+	+	–	+	+	+	+	+	o	+	+

Hydrogen Peroxide	H2O2	3	1,01		20	+	+	+	+	+	+	+	+	o	+	+
Hydrogen Peroxide	H2O2	10	1,04		20	+	+	+	+	+	+	+	+	o	+	+
Hydrogen Peroxide	H2O2	20	1,07		20	+[1)]	+	+	+[1)]	+	+	o	+	o	+	+
Hydrogen Peroxide	H2O2	30	1,11		20	+[1)]	+	+	+[1)]	+	+	o	+	–	+	+
Hydrogen Peroxide	H2O2	90	1,42		20	+[1)]	+	+	–	+	+	–	+	–	+	+
Hydroxysuccinic Acid	HOOC-CH2-CHOH-COOH	50			20	+[1)]	+	–	+[1)]	+	+	o	+	+	+	+
Ink		H	1,00		20	+	+	+	+	+	+	+	+	+	+	+
Iodine Preparations		H			20	o	+	o	+	+	+	+	+	+	+	+
Isobutyl Alcohol	C4H10O	100	0,81	AII	20	+	+	+	+	+	+	+	+	–	+	+
Isocyanate					20	+	+	+	–	–	+	o	+	+	–	+
Isooctane	C8H18	TR		AI	20	+	+	+	+	+	+	+	+	+	+	+
Isooctanol	C4H9-CH(C2H5)	TR	0,83	AIII	20	+	+	+	+	+	+	+	+	o	+	+
Isopropyl Acetate	C6H12O2		0,87	AI	20	+[1)]	+	o	o	o	+	o	o	+	+	+
Isopropyl Ether	C6H14O	TR	0,73	AI	20	+[1)]	+	o	o	+	+	–	–	–	–	+
Lactic Acid	C3H6O3	10			20	+	+	–	+	+	+	+	+	o	+	+
Lactic Acid	C3H6O3	90			20	+	+	–	+	+	+	+	+	–	+	+
Lanolin		TR			20	+	+	+	o	+	+	+	+	+	o	+
Lauric Acid	C12H24O2	TR			20	+[1)]	+	–	+[1)]	+	+	–	+	–	–	+
Lead Acetate	C4H6O4Pb	10			20	+	+	–	+	+	+	+	+	+	+	+
Lead Acetate	C4H6O4Pb	GL			20	+	+	–	+	+	+	+	+	+	+	+

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Lead Nitrate	Pb(NO3)2	50			20	+	+	+	+	+	+	+	+	+	+	+
Lead Tetraethyl	Pb(C2H5)4	TR	1,66	AIII	20	+	+	+	+	+	+	+	+	+	o	+
Linseed Oil		TR			20	+	+	+	+	+	+	+	+	+	+	+
Lithium Chloride	LiCl	45	1,30		20	o	+	–	+	+	+	+	+	+	+	+
Lithium Sulphate	LiSO4	25	1,23		20	+	+	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl2	10			20	o	+	–	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl2	GL			20	o	+	–	+	+	+	+	+	+	+	+
Magnesium Nitrate	Mg(NO3)2	25	1,21		20	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO4	10			20	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO4	GL	1,28		20	+	+	+	+	+	+	+	+	+	+	+
Maleic Acid	C4H4O4	35			20	+	+	–	+	+	+	+	+	–	+	+
Maleic Acid	C4H4O4	GL			20	+	+	–	+	+	+	+	+	–	o	+
Manganous Chloride	MnCl2	20	1,19		20	o	+	–	+	+	+	+	+	+	+	+
Mercury Cyanide	Hg(CN)2	TR			20	+	+	–	+	+	+	+	+	+	+	+
Mercury Nitrate	Hg(NO3)2	GL			20	+	+	–	+	+	+	+	+	o	+	+
Methanol	CH3OH	TR		B	20	+	+	+	+	+	+	+	o	o	+	+
Methyl Ethyl Ketone (MEK)	C4H8O	TR	0,81	AI	20	+	+	–	+	–	+	o	–	–	+	+
Methyl Glycol	(CH2)2OHOCH3		0,98		20	+	+	+	+	+	+	+	+	+	+	+
Methyl Isobutyl Ketone	C6H11O			AI	20	+[1)]	+	–	–	+	+	+	o	o	o	+
Methyl Sulphuric Acid	H2SO4-CH2	50			20	o	o	–	o	+	+	–	o	–	+	+
Methyl Sulphuric Acid	H2SO4-CH2	TR			20	o	o	–	–	+	+	–	o	–	+	+

Methylene Chloride	CH2Cl2		1,33		20	+	+	–	o	o	+[1]	+	o	–	o	+
Milk					20	+	+	+	+	+	+	+	+	+	+	+
Mineral Oils					20	+	+	+	+	+	+	+	+	+	–	+
Mineral Water					20	+	+	+	+	+	+	+	+	+	+	+
Naphta		TR	0,81	AII	20	+[1]	+	+	+[1]	+	+	o	+	+	o	+
Nickel Chloride	NiCl2	20	1,22		20	o	+	–	+	+	+	+	+	+	+	+
Nickel Nitrate	Ni(NO3)2	35	1,38		20	+	+	–	+	+	+	+	+	+	+	+
Nickel Sulphate	NiSO4	10	1,21		20	+	+	–	+	+	+	+	+	+	+	+
Nicotine	C10H14N2				20	+	+	–	–	–	+	+	+	o	+	+
Nitric Acid	HNO3	10	1,05		20	+[1]	+	–	+[1]	+	+	o	+	–	+	+
Nitric Acid	HNO3	30	1,18		20	+[1]	+	–	o	+	+	–	+	–	+	+
Nitric Acid	HNO3	50	1,31		20	+[1]	+	–	o	+	+	–	+	–	–	+
Nitric Acid	HNO3	65	1,41		20	+[1]	+	–	–	+	+	–	+	–	–	+
Nitrobenzene	C6H5NO2	TR	1,21	AIII	20	+	+	+	+	+	+	+	o	o	o	+
Nitrotoluene	C6H4CH3NO2	TR			20	+	+	+	+	+	+	+	o	o	o	+
Nitrous Acid	HNO2				20	o	+	–	o	+	+	+	+	–	o	+
Octane	C8H18	TR		AI	20	+	+	+	+	+	+	+	+	+	+	+
Oleic Acid	C18H34O2	TR	0,90		20	+	+	–	+	+	+	+	+	o	–	+
Oleum	H2SO4+SO3				20	+[1]	+	–	–	–	+	–	+	–	–	+
Oxalic Acid	(CO2H)2	10			20	+	+	–	+	+	+	+	+	+	+	+

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Oxalic Acid	(CO2H)2	GL	1,65		20	+[1]	+	–	+[1]	+	+	o	+	o	+	+
Paraffin Oil	CnH2n	TR	0,93		20	+	+	+	+	+	+	+	+	+	–	+
Pectine		10			20	+	+	+	+	+	+	+	+	+	+	+
Perchloric Acid	HClO4	20			20	+	+	–	+	+	+	+	+	–	+	+
Perchloric Acid	HClO4	50	1,40		20	+	+	–	+	+	+	+	+	–	+	+
Perchloric Acid	HClO4	70	1,55		20	+	+	–	+	+	+	+	+	–	+	+
Perchloric Acid	HClO4	GL			20	+	+	–	+	+	+	+	+	–	+	+
Perchloroethylene	C2Cl4	TR			20	+	+	–	–	+	+[1]	+	+	–	–	+
Petrol		H	0,73	AI	20	+	+	+	–	+	+	+	+	+	–	+
Petroleum Crude					20	+	+	+	+	+	+	+	+	+	–	+
Petroleum Ether		TR	0,69	AI	20	+	+	+	–	+	+	+	+	+	o	+
Phenol	C6H6O	50			20	+	+	+	+	+	+	+	+	+	+	+
Phenol	C6H6O	90			20	+	+	+	+	+	+	+	+	+	–	+
Phenol	C6H6O	100			20	+	+	+	+	+	+	+	+	+	–	+
Phosphoric Acid	H3PO4	30	1,18		20	+	+	–	+	+	+	+	+	o	+	+
Phosphoric Acid	H3PO4	50			20	+	+	–	+	+	+	+	+	o	+	+
Phosphoric Acid	H3PO4	85	1,69		20	+	+	–	+	+	+	+	+	–	+	+
Phosphoric Acid	H3PO4	95	1,70		20	–	+	–	–	+	+	o	+	–	o	+
Phosphorous Trichloride	POCl3	TR	1,57		20	+	+	–	+	+	+	+	+	–	+	+
Phthalic Acid	C6H4(COOH)2+H2O	50			20	+	+	–	+	+	+	+	+	–	+	+
Phthalic Acid	C6H4(COOH)2+H2O	GL	1,59		20	+	+	–	+	+	+	+	o	–	+	+

Polyhydric Alcohol			1,78		20	+	+	+	–	+	+	+	+	+	+	+
Potassium Aluminium Sulphate	KAl(SO4)2H2O	50			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Bromate	KBrO3+H2O	GL			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H2O	10	1,37		20	+	+	–	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H2O	GL			20	+	+	–	+	+	+	+	+	+	+	+
Potassium Carbonate	K2CO3	GL			20	+	+	–	+	+	+	+	+	+	+	+
Potassium Chlorate	KClO3	50			20	+	+	–	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	10			20	o	+	–	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	GL	1,17		20	o	+	–	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	50			20	+	+	–	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	GL	1,31		20	+	+	–	+	+	+	+	+	+	+	+
Potassium Dichromate	K2Cr2O7	40			20	+	+	–	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K4Fe(CN)6	10			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K4Fe(CN)6	20	1,11		20	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K4Fe(CN)6	GL			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferrocyanide	K3Fe(CN)6	10			20	+[1)]	+	+	+[1)]	+	+	o	+	+	+	+
Potassium Ferrocyanide	K3Fe(CN)6	16	1,11		20	+[1)]	+	+	+[1)]	+	+	o	+	+	+	+
Potassium Ferrocyanide	K3Fe(CN)6	GL			20	+[1)]	+	+	+[1)]	+	+	o	+	+	+	+
Potassium Hydroxide	KOH	20	1,19		20	+	+	–	+	+	+	+	–	o	+	+
Potassium Hydroxide	KOH	30	1,29		20	+	+	–	+	+	+	+	–	o	+	+

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Potassium Hydroxide	KOH	60	1,63		20	+	+	–	+	+	+	+	–	–	+	+
Potassium Hypochlorite	KClO	15			20	o	+	–	o	+	+	+	+	–	+	+
Potassium Iodide	KJ	50	1,55		20	+	+	+	+	+	+	+	+	+	+	+
Potassium Iodide	KJ	GL			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO3	10			20	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO3	24	1,17		20	+	+	+	+	+	+	+	+	+	+	+
Potassium Oxalate	K2(CO2)2				20	+	+	–	+	+	+	+	+	–	+	+
Potassium Permanganate	KMnO4	6	1,04		20	+	+	+	+	+	+	+	+	o	+	+
Potassium Permanganate	KMnO4	18			20	+	+	+	+	+	+	+	+	o	+	+
Potassium Sulphate	K2SO4	10	1,08		20	+	+	+	+	+	+	+	+	+	+	+
Propionic Acid	C3H6O2	50			20	+	+	–	+	+	+	+	+	–	o	+
Propionic Acid	C3H6O2	TR	0,99		20	+	+	–	+	+	+	+	+	–	+	+
Propyl Alcohol	C3H8O	TR		B	20	+	+	+	+	+	+[1)]	+	+	+	o	+
Propylene Glycol	C3H8O2	TR	1,04	AI	20	+	+	+	+	+	+	+	+	+	+	+
Propylene Oxide	C3H6O	TR	0,83	AI	20	+	+	+	+	+	+	+	–	–	–	+
Propylenealdehyde	C4H6O	TR		AI	20	+	+	+	–	+	+	+	+	+	+	+
Pyridine	C5H5N	TR	0,99	B	20	+	+	+	o	+	+	+	o	–	+	+
Pyrogallol	C6H3(OH)3-1,2,3	10			20	+	+	+	+	+	+	+	+	o	+	+
Salade Oil		H			20	+	+	+	+	+	+	+	+	+	+	+
Seawater					20	o	+	–	+	+	+	+	+	+	+	+
Silicic Acid	Si(OH)4	TR			20	+	+	–	+	+	+	+	+	–	+	+

Silicone Oil		TR	1,06		20	+	+	+	+	+	+	+	+	+	o	+
Silver Nitrate	AgNO3	8	1,07		20	+	+	–	+	+	+	+	+	+	+	+
Sodium Acetate	CH3COONa	10			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C7H5NaO2	10			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C7H5NaO2	36			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C7H5NaO2	GL			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Bicarbonate	NaHCO3	10	1,07		20	+	+	+	+	+	+	+	+	+	+	+
Sodium Bichromate	Na2Cr2O7	10			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Chlorate	NaClO3	25	1,23		20	+	+	–	+	+	+	+	+	+	+	+
Sodium Chloride	NaCl	20			20	o	+	+	+	+	+	+	+	+	+	+
Sodium Chlorite	NaClO2	5			20	o	+	–	+	+	+	+	+	+	+	+
Sodium Fluoride	NaF	4	1,04		20	+	+	–	+	+	+	+	+	+	+	+
Sodium Hydroxide	NaOH	10	1,16		20	+	+	–	+	o	+	+	+	+	+	+
Sodium Hydroxide	NaOH	30	1,33		20	+	+	–	+	o	+	+	o	+	+	+
Sodium Hydroxide	NaOH	50	1,53		20	+	+	–	+	o	+	+	o	o	+	+
Sodium Hypochlorite	NaOCl	10			20	o	+	–	+	+	+	+	+	–	+	+
Sodium Hypochlorite	NaOCl	12,5			20	o	+	–	+	+	+	+	+	–	+	+
Sodium Hypochlorite	NaOCl	20			20	o	+	–	+	+	+	+	+	–	+	+
Sodium Nitrate	NaNO3	45	1,37		20	+	+	+	+	+	+	+	+	+	+	+
Sodium Nitrite	NaNO2	50			20	+	+	+	+	+	+	+	+	+	+	+

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Sodium Perchlorate	NaClO4	25	1,18		20	o	+	+	+[1)]	+	+	–	+	+	+	+
Sodium Phosphate	Na3PO4	10			20	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphate	Na2SO4	50	1,46		20	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphite	Na2SO3	GL	1,18		20	+	+	+	+	+	+	+	+	+	+	+
Sodium Thiosulphate	Na2S2O3	40			20	+	+	+	+	+	+	+	+	+	o	+
Sodium Water Glass	Na2SiO3	20	1,24		20	+	+	+	+	+	+	+	+	+	+	+
Spindle Oil		TR			20	+	+	+	+	+	+	+	+	+	o	+
Stannous Chloride	SnCl2	20	1,17		20	o	+	–	+	+	+	+	+	+	+	+
Styrene	C6H5CHCH2	TR	0,91	AII	20	+	+	+	o	o	+	+	o	–	–	+
Sulphur Chloride	S2CL2	10			20	o	+	o	o	+	+	–	+	–	–	+
Sulphuric Acid	H2SO4	40	1,30		20	o	+	–	+	+	+	+	+	o	+	+
Sulphuric Acid	H2SO4	80	1,73		20	o	+	–	+	+	+	+	+	–	+	+
Sulphuric Acid	H2SO4	90	1,82		20	+[1)]	+	–	o	+	+	o	+	–	+	+
Sulphuric Acid	H2SO4	98	1,84		20	+[1)]	+	–	o	+	+	o	+	–	o	+
Sulphurous Acid	H2SO3	50			20	o	+	–	+	+	+	+	+	o	+	+
Tannic Acid	C2O6H6	50			20	+[1)]	+	–	+[1)]	+	+	–	+	+	+	+
Tanning Extracts vegetable		H			20	+[1)]	+	+	+[1)]	+	+	–	+	+	+	+
Tartaric Acid	C4H6O6	GL	1,76		20	+	+	–	+	+	+	+	+	+	+	+
Tetrachloroethane	Cl2CH-CHCl2	TR	1,60		20	+	+	–	o	+	+	+	o	–	–	+
Tetrachloromethane	CCl4	TR	1,59		20	+[1)]	+	+	o	+	+[1)]	o	+	–	o	+
Tetrahydrofurane	C4H8O	TR	0,89	B	20	+[1)]	+	–	o	o	+	+	o	–	o	+

Tetraline	C10H12	100	0,97	AIII	20	+	+	+	–	+	+	+	+	–	o	+
Thionyl Chloride	SOCl2	TR	1,66		20	+	+	–	–	+	+	+	–	–	+	+
Thiophene	C4H4S			AI	20	+	+	–	o	+	+	+	+	–	+	+
Toluene	C7H8		0,87	AI	20	+	+	+	o	+	+	+	o	–	o	+
Toothpaste		H			20	+	+	+	+	+	+	+	+	+	+	+
Transformer Oil		TR			20	+	+	+	o	+	+	+	+	+	o	+
Tributyl Phosphate	C12H27O4P	TR	0,98		20	+	+	o	+	+	+	+	+	–	+	+
Trichloroacetic Acid	CCl3CO2H	50			20	o	+	–	+	+	+	+	–	–	+	+
Trichloroacetic Acid	CCl3CO2H	TR	1,62		20	o	+	–	+	+	+	+	–	o	+	+
Trichlorobenzene	C6H3Cl3				20	+[1)]	+	–	o	+	+	–	+	–	+	+
Trichloroethane	C2H3Cl3	TR	1,34		20	+[1)]	+	–	o	+	+	o	o	–	–	+
Trichloroethylene	C2HCl3	50			20	+	+	–	o	+	+[1)]	+	o	–	o	+
Trichloroethylene	C2HCl3	TR	1,47		20	+	+	–	o	+	+[1)]	+	+	–	o	+
Tricresyl Phosphate	PO4(C6H4CH3)3	TR	1,13		20	+	+	+	+	+	+	+	–	o	o	+
Triethylamine	C6H15N	TR	0,73	B	20	+	+	+	+	o	+	+	+	–	+	+
Triiodinemethane	CHJ3				20	+	+	–	+	+	+	+	+	+	o	+
Turpentine Oil		H	0,86		20	+	+	+	–	+	+	+	+	+	–	+
Urea	CH4N2O	10			20	+	+	+	+	+	+	+	+	+	+	+
Urea	CH4N2O	33			20	+	+	+	+	+	+	+	+	+	+	+
Urine					20	+	+	–	+	+	+	+	+	+	+	+

TR = technically pure GL = saturated solution H = commercial composition + = resistant o = limited resistance – = not resistant [1)] Not resistant on FMC

Vinegar	C2H4O2	H			20	+	+	o	+	+	+	+	–	+	+	+
Vinyl Acetate	C4H6O2	TR	0,93	AI	20	+	+	–	+	+	+	+	o	+	o	+
Water	H2O		1,00		20	+	+	+	+	+	+	+	+	+	+	+
Xylene	C6H4(CH3)2	TR	0,86	AII	20	+	+	+	–	+	+	+	+	–	–	+
Zinc Chloride	ZnCl2	20	1,19		20	+	+	–	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl2	75	2,07		20	–	+	–	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO4	10	1,11		20	+	+	o	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO4	GL	1,38		20	+	+	o	+	+	+	+	+	+	+	+

NOTES

TR = technically pure GL = saturated solution H = commercial composition + = resistant o = limited resistance – = not resistant [1]) Not resistant on FMC