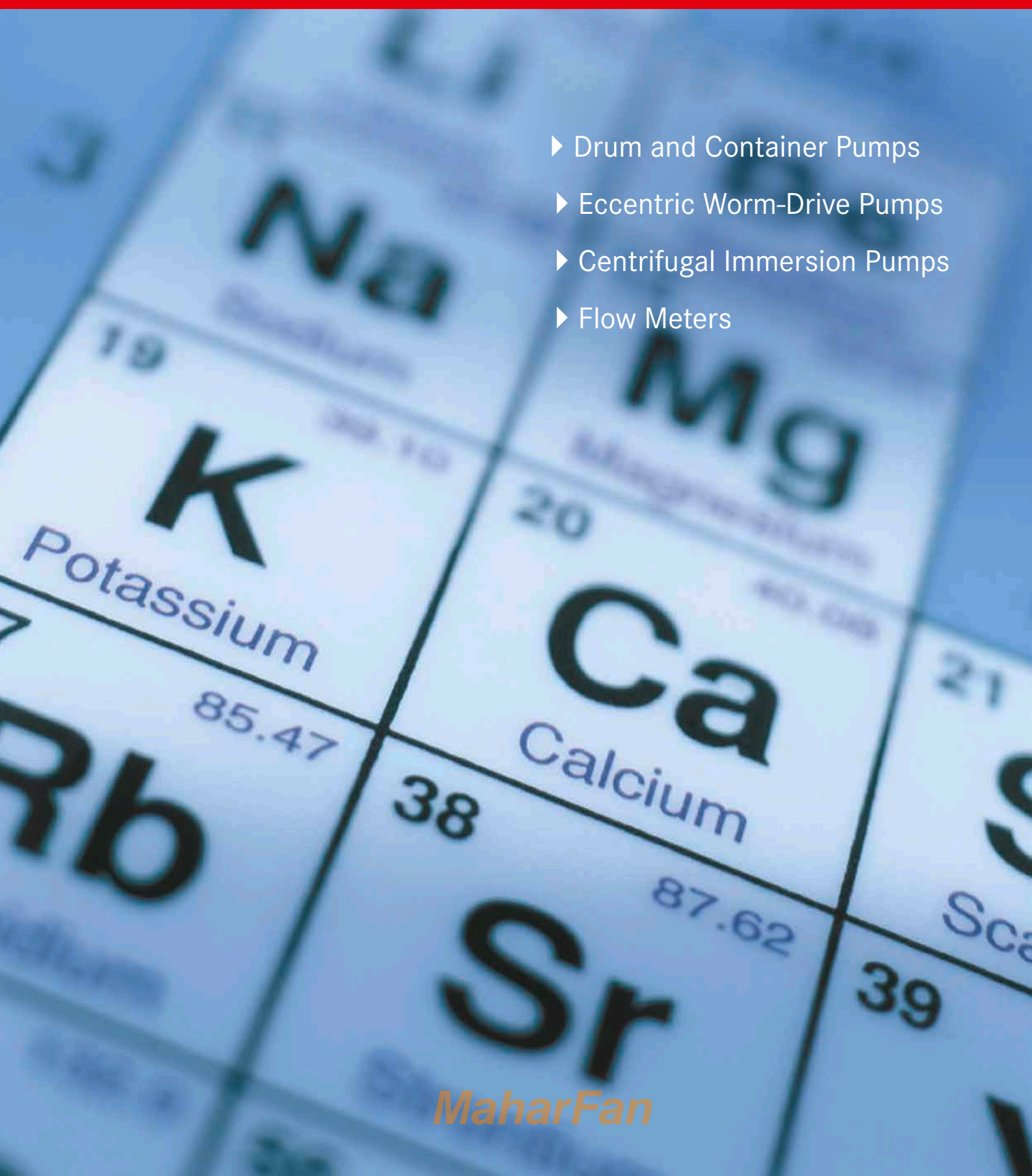


# Resistance Chart



More than just pumps

- ▶ Drum and Container Pumps
- ▶ Eccentric Worm-Drive Pumps
- ▶ Centrifugal Immersion Pumps
- ▶ Flow Meters



## Construction materials of pumps and flow meters ...



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

The FLUX Resistance Chart assists you in selecting your pump and/or flow 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 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.

**The indications are as follows:**

- + = resistant
- o = limited resistance
- = not resistant

### **Note**

**For transferring highly flammable liquids, which are underlined in red, only pumps in stainless steel or Hastelloy C together with explosion-proof motors must be used, which are tested and certified according to ATEX-Directive 2014/34/EU. Please observe all relevant Health & Safety Regulations.**



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Acetaldehyde	CH <sub>3</sub> -CHO	40			20	+	+	+	+	+	+	+	+	-	+	+	+
Acetaldehyde	CH <sub>3</sub> -CHO	40			40	+	+	+	o	+	+	+	+	-	+	+	+
Acetaldehyde	CH <sub>3</sub> -CHO	40			60	+	+	o	o	+	+	+	o	-	+	+	+
Acetaldehyde	CH <sub>3</sub> -CHO	TR	0,79	B	20	+	+	o	o	+	+	+	o	-	o	+	+
Acetaldehyde	CH <sub>3</sub> -CHO	TR			40	+	+	-	-	o	+	+	-	-	o	+	+
Acetamide	CH <sub>3</sub> -CO-NH <sub>2</sub>	TR	0,98		20	+	+	o	+	+	+	+	+	+	+	+	+
Acetamide	CH <sub>3</sub> -CO-NH <sub>2</sub>	TR			40	+	+	o	+	+	+	+	+	o	+	+	+
Acetamide	CH <sub>3</sub> -CO-NH <sub>2</sub>	TR			60	+	+	-	o	+	+	+	+	-	o	+	+
Acetanhydride	(CH <sub>3</sub> CO) <sub>2</sub> O	TR	1,09	All	20	+	+	+	o	o	+	+	o	-	o	+	+
Acetanhydride	(CH <sub>3</sub> CO) <sub>2</sub> O	TR			40	+	+	+	o	-	+	+	-	-	-	+	+
Acetanhydride	(CH <sub>3</sub> CO) <sub>2</sub> O	TR			60	+	+	o	o	-	+	+	-	-	-	+	+
Acetylene Dichloride						see dichlorethylene 1.1											
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	10		B	20	+	+	+	+	+	+	+	o	-	+	+	+
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	10			40	+	+	+	+	+	+	+	o	-	o	+	+
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	10			60	+	+	o	o	+	+	+	-	-	-	+	+
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	TR	0,79	B	20	+	+	+	+	o	+	+	-	-	+	+	+
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	TR			40	+	+	o	+	o	+	+	-	-	o	+	+
Acetone	CH <sub>3</sub> -CO-CH <sub>3</sub>	TR			60	+	+	o	o	-	+	+	-	-	-	+	+
Acetonitrile	CH <sub>3</sub> -CN	TR	0,78	B	20	+	+	+	+	o	+	+	o	-	o	+	+
Acetonitrile	CH <sub>3</sub> -CN	TR			40	+	+	+	+	-	+	+	o	-	-	+	+
Acetonitrile	CH <sub>3</sub> -CN	TR			60	-	+	+	+	-	+	+	o	-	-	+	+
Acrylonitrile	CH <sub>2</sub> =CH-CN	TR	0,81	AI	20	+	+	+	+	+	+	+	o	-	o	+	+
Acrylonitrile	CH <sub>2</sub> =CH-CN	TR			40	+) +	+	o	o	+	o	o	-	o	+	+	
Acrylonitrile	CH <sub>2</sub> =CH-CN	TR			60	+) +	+	o	o	+	o	o	-	-	+	+	
Butyl Acrylate	C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	TR		AI	20	+	+	o	-	o	+	+	-	-	o	+	+
Adipic Acid	C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	GL	0,89	All	20	+	+	o	+	+	+	+	+	+	+	+	+
Adipic Acid	C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Adipic Acid	C <sub>6</sub> H <sub>10</sub> O <sub>4</sub>	GL			60	+	+	-	+	+	+	+	+	+	+	+	+
Accumulator Acid						see sulphuric acid 40 %											
Alum						see potassium aluminium sulphate											
Allyl Alcohol	H <sub>2</sub> C=CH-CH <sub>2</sub> -OH	96	0,87	B	20	+	+	o	+	+	+	+	+	o	+	o	+
Allyl Alcohol	H <sub>2</sub> C=CH-CH <sub>2</sub> -OH	96			40	+	+	o	+	+	+	+	-	+	o	+	+
Allyl Alcohol	H <sub>2</sub> C=CH-CH <sub>2</sub> -OH	96			60	+	+	o	+	+	+	+	-	+	o	+	+
Aluminium Chloride	AlCl <sub>3</sub>	10			20	o	+	-	+	+	+	+	+	+	+	+	+
Aluminium Chloride	AlCl <sub>3</sub>	10			40	o	+	-	+	+	+	+	+	+	+	+	+
Aluminium Chloride	AlCl <sub>3</sub>	10			60	o	+	-	+	+	+	+	+	o	+	+	+
Aluminium Chloride	AlCl <sub>3</sub>	GL	2,40		20	-	+	-	+	+	+	+	+	+	+	+	+
Aluminium Chloride	AlCl <sub>3</sub>	GL			40	-	+	-	+	+	+	+	+	+	+	+	+
Aluminium Chloride	AlCl <sub>3</sub>	GL			60	-	o	-	+	+	+	+	+	+	+	+	+
Aluminium Nitrate	Al(NO <sub>3</sub> ) <sub>3</sub>	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Nitrate	Al(NO <sub>3</sub> ) <sub>3</sub>	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Nitrate	Al(NO <sub>3</sub> ) <sub>3</sub>	GL			60	o	+	-	+) +	+	+	-	+	o	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	10			60	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	GL	1,61		20	+	+	-	+	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	GL			40	o	+	-	+	+	+	+	+	+	+	+	+
Aluminium Sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	GL			60	o	o	-	+	+	+	+	+	+	o	+	+
Formic Acid	HCOOH	50			20	+	+	-	+	+	+	+	+	-	+	+	+
Formic Acid	HCOOH	50			40	+	+	-	o	+	+	+	+	-	o	+	+
Formic Acid	HCOOH	50			60	o	+	-	-	+	+	+	o	-	o	+	+
Formic Acid	HCOOH	85	1,22	All	20	+	+	-	+	+	+	+	-	-	+	+	+
Formic Acid	HCOOH	85		All	40	o	+	-	o	+	+	+	-	-	+	+	+
Formic Acid	HCOOH	85		All	60	o	+	-	-	+	+	+	-	-	+	+	+
Amino Acid Amide						see formamide											

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant





# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Ammonia water	NH <sub>3</sub> OH	GL			20	+	+	+	+	+	+	+	-	+	+	+	+
Ammonia water	NH <sub>3</sub> OH	GL			40	+	+	+	+	+	+	+	-	o	+	+	+
Ammonia water	NH <sub>3</sub> OH	GL			60	+	+	+	+	+	+	+	-	o	+	+	+
Ammonium acetate	CH <sub>3</sub> -COONH <sub>3</sub> +H <sub>2</sub> O				20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium acetate	CH <sub>3</sub> -COONH <sub>3</sub> +H <sub>2</sub> O				40	+	+	o	+	+	+	+	+	+	+	+	+
Ammonium acetate	CH <sub>3</sub> -COONH <sub>3</sub> +H <sub>2</sub> O				60	<sup>1)</sup> +	+	o	<sup>1)</sup> +	+	+	o	+	+	+	+	+
Ammonium Bromide	NH <sub>3</sub> Br+H <sub>2</sub> O	40	1,27		20	o	+	-	+	+	+	+	+	+	+	+	+
Ammonium Bromide	NH <sub>3</sub> Br+H <sub>2</sub> O	40			40	o	+	-	+	+	+	+	+	+	+	+	+
Ammonium Bromide	NH <sub>3</sub> Br+H <sub>2</sub> O	40			60	-	o	-	+	+	+	+	+	+	+	+	+
Ammonium Carbonate	(NH <sub>3</sub> ) <sub>2</sub> CO <sub>3</sub> +H <sub>2</sub> O	25			20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Carbonate	(NH <sub>3</sub> ) <sub>2</sub> CO <sub>3</sub> +H <sub>2</sub> O	25			40	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Carbonate	(NH <sub>3</sub> ) <sub>2</sub> CO <sub>3</sub> +H <sub>2</sub> O	25			60	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Chloride	NH <sub>3</sub> Cl+H <sub>2</sub> O	GL	1,07		20	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Chloride	NH <sub>3</sub> Cl+H <sub>2</sub> O	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Chloride	NH <sub>3</sub> Cl+H <sub>2</sub> O	GL			60	o	+	-	+	+	+	+	+	+	+	+	+
Ammonium Fluoride	NH <sub>3</sub> F+H <sub>2</sub> O	14			20	o	+	-	+	+	+	+	+	+	+	+	+
Ammonium Fluoride	NH <sub>3</sub> F+H <sub>2</sub> O	14			40	o	+	-	+	+	+	+	+	+	+	+	+
Ammonium Fluoride	NH <sub>3</sub> F+H <sub>2</sub> O	14			60	-	+	-	+	+	+	+	+	+	o	+	+
Ammonium Fluosilicate	(NH <sub>3</sub> ) <sub>2</sub> SiF <sub>6</sub> +H <sub>2</sub> O	TR			20	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Hydrogen Fluoride	(NH <sub>3</sub> ) <sub>2</sub> HF <sub>2</sub>	50			20	o	o	-	+	+	+	+	+	-	+	+	+
Ammonium Hydrogen Fluoride	(NH <sub>3</sub> ) <sub>2</sub> HF <sub>2</sub>	50			40	-	o	-	+	+	+	+	o	-	-	+	+
Ammonium Hydrogen Fluoride	(NH <sub>3</sub> ) <sub>2</sub> HF <sub>2</sub>	50			60	-	o	-	+	+	+	+	o	-	-	+	+
Ammonium Monophosphate						see ammonium phosphate											
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	10			60	+	+	+	+	+	+	+	+	o	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	50	1,23		20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	50			40	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	50			60	+	+	+	+	+	+	+	+	o	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Nitrate	NH <sub>3</sub> NO <sub>3</sub> +H <sub>2</sub> O	GL			60	+	+	+	+	+	+	+	+	o	+	+	+
Ammonium Oxalate	(COONH <sub>3</sub> ) <sub>2</sub> +H <sub>2</sub> O	TR	1,50		20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Oxalate	(COONH <sub>3</sub> ) <sub>2</sub> +H <sub>2</sub> O	TR			40	+	+	+	o	+	+	+	+	+	+	+	+
Ammonium Oxalate	(COONH <sub>3</sub> ) <sub>2</sub> +H <sub>2</sub> O	TR			60	+	+	+	o	+	+	+	+	+	o	+	+
Ammonium Perchlorate	NH <sub>3</sub> ClO <sub>4</sub> +H <sub>2</sub> O	14	1,07		20	+	+	+	o	+	+	+	+	o	o	+	+
Ammonium Perchlorate	NH <sub>3</sub> ClO <sub>4</sub> +H <sub>2</sub> O	14			40	o	+	o	o	+	+	+	+	-	o	+	+
Ammonium Perchlorate	NH <sub>3</sub> ClO <sub>4</sub> +H <sub>2</sub> O	14			60	o	o	-	o	+	+	+	+	-	o	+	+
Ammonium Phosphate	NH <sub>3</sub> H <sub>2</sub> PO <sub>4</sub> +H <sub>2</sub> O	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Phosphate	NH <sub>3</sub> H <sub>2</sub> PO <sub>4</sub> +H <sub>2</sub> O	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Phosphate	NH <sub>3</sub> H <sub>2</sub> PO <sub>4</sub> +H <sub>2</sub> O	10			60	+	+	-	+	+	+	+	+	o	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	10			40	+	+	o	+	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	10			60	<sup>1)</sup> +	+	o	<sup>1)</sup> +	+	+	o	+	o	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	50	1,28		20	+	+	+	+	+	+	+	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	50			40	<sup>1)</sup> +	+	o	<sup>1)</sup> +	+	+	o	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	50			60	<sup>1)</sup> +	+	o	<sup>1)</sup> +	+	+	o	+	o	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	GL	1,30		20	<sup>1)</sup> +	+	+	<sup>1)</sup> +	+	+	o	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	GL			40	<sup>1)</sup> +	+	o	<sup>1)</sup> +	+	+	o	+	+	+	+	+
Ammonium Sulphate	(NH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O	GL			60	<sup>1)</sup> +	+	-	<sup>1)</sup> +	+	+	-	+	o	+	+	+
Ammonium Sulphide	NH <sub>3</sub> S+H <sub>2</sub> O	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Ammonium Sulphide	NH <sub>3</sub> S+H <sub>2</sub> O	10			40	<sup>1)</sup> +	+	-	<sup>1)</sup> +	+	+	+	+	o	+	+	+
Ammonium Sulphide	NH <sub>3</sub> S+H <sub>2</sub> O	10			60	<sup>1)</sup> +	+	-	<sup>1)</sup> +	+	+	o	+	o	+	+	+
Ammonium Nitrate						see ammonium nitrate											
Amyl Acetate	CH <sub>3</sub> -COOC <sub>2</sub> H <sub>5</sub>	TR	0,88	All	20	+	+	+	o	+	+	+	-	-	o	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant





# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Amyl Acetate	CH <sub>3</sub> -COOC <sub>2</sub> H <sub>5</sub>	TR			40	+	+	+	-	o	+	+	-	-	-	+	+
Amyl Acetate	CH <sub>3</sub> -COOC <sub>2</sub> H <sub>5</sub>	TR			60	+)1	+	+	-	o	+	o	-	-	-	+	+
Amyl Alcohol	C <sub>4</sub> H <sub>9</sub> OH	TR	0,82	All	20	+	+	+	+	+	+	+	+	+	+	+	+
Amyl Alcohol	C <sub>4</sub> H <sub>9</sub> OH	TR			40	+	+	o	+	+	+	+	+	o	+	+	+
Amyl Alcohol	C <sub>4</sub> H <sub>9</sub> OH	TR			60	+	+	o	+	+	+	+	o	o	+	+	+
Amyl Chloride	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> Cl	TR	0,87	Al	20	o	+	-	+	+	+	+	+	o	+	+	+
Amyl Chloride	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> Cl	TR			40	-	+	-	o	+	+	+	+	o	+	+	+
Amyl Chloride	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> Cl	TR			60	-	o	-	o	+	+	o	o	o	o	+	+
Aniline	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	TR	1,01	AIII	20	+	+	+	o	+	+	+	+	-	o	+	+
Aniline	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	TR			40	+	+	+	-	o	+	+	o	-	-	+	+
Aniline	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	TR			60	+)1	+	+	-	o	+	o	o	-	-	+	+
Anone						see cyclohexanone											
malic acid						see hydroxysuccinic acid											
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	10			60	+	+	-	+	+	+	+	+	+	+	+	+
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	80			20	+	+	-	+	+	+	+	+	+	+	+	+
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	80			40	+	+	-	+	+	+	+	+	+	+	+	+
Arsenic Acid	H <sub>3</sub> AsO <sub>4</sub>	80			60	+	+	-	+	+	+	+	+	+	+	+	+
Caustic Baryta						see barium hydroxide											
Caustic Potash Solution						see potassium hydroxide											
Caustic Soda						see sodium hydroxide											
Barium chloride	BaCl <sub>2</sub>	10			20	-	+	o	+	+	+	+	+	+	+	+	+
Barium chloride	BaCl <sub>2</sub>	10			40	-	+	o	+	+	+	+	+	+	+	+	+
Barium chloride	BaCl <sub>2</sub>	25	1,27		20	o	+	o	+	+	+	+	+	+	+	+	+
Barium chloride	BaCl <sub>2</sub>	25			40	o	+	o	+	+	+	+	+	+	+	+	+
Barium Hydroxide	Ba(OH) <sub>2</sub>	GL			20	+)1	+	-	+)1	+	+	o	+	+	+	+	+
Barium Hydroxide	Ba(OH) <sub>2</sub>	GL			40	+)1	+	-	+)1	+	+	o	+	+	+	+	+
Barium Hydroxide	Ba(OH) <sub>2</sub>	GL			60	+)1	+	-	+)1	o	+	o	+	+	+	+	+
Barium Sulphide	BaS	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO		1,05		20	+)1	+	+	o	+	+	+	+	o	o	+	+
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO				40	+)1	+	+	o	o	+	o	+	o	o	+	+
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO				60	+)1	+	+	-	o	+	-	+	o	o	+	+
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO	30			20	+)1	+	o	-	+	+	o	+	-	-	+	+
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO	TR	1,05	AIII	20	+	+	o	o	+	+	+	o	-	o	+	+
Fuel		H	0,73	Al	20	+	+	+	-	+	+	+	+	+	-	+	+
Fuel		H			40	+	+	+	-	+	+	+	+	+	-	+	+
Fuel		H			60	+	+	+	-	+	+	+	+	+	-	+	+
Benzoic acid	C <sub>6</sub> H <sub>5</sub> COOH	10	1,27		20	+	+	+	+	+	+	+	+	-	-	+	+
Benzoic acid	C <sub>6</sub> H <sub>5</sub> COOH	10			40	+	+	o	+	+	+	+	+	-	-	+	+
Benzoic acid	C <sub>6</sub> H <sub>5</sub> COOH	10			60	+	+	o	o	+	+	+	+	-	-	+	+
Benzene	C <sub>6</sub> H <sub>6</sub>	TR	0,88	Al	20	+	+	+	-	+	+	+	+	-	-	+	+
Benzyl Alcohol	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> OH	TR	1,04		20	+	+	+	+	+	+	+	o	-	+	+	+
Benzyl Alcohol	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> OH	TR			40	+	+	+	+	+	+	+	o	-	o	+	+
Benzyl Alcohol	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> OH	TR			60	+	+	+	o	+	+	+	o	-	o	+	+
Benzyl Chloride	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> Cl		1,11	AIII	20	+	+	-	-	+	+	+	+	-	-	+	+
Benzyl Chloride	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> Cl				40	+	+	-	-	+	+	+	+	-	-	+	+
Benzyl Chloride	C <sub>6</sub> H <sub>5</sub> -CH <sub>2</sub> Cl				60	+	+	-	-	o	+	+	+	-	-	+	+
Succinic acid						see ethane dicarboxylic acid											
Bitter almond oil						see benzaldehyde											
Epsomite						see magnesium sulphate											
Prussic acid						see hydrocyanic acid											
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	10			60	+	+	-	+	+	+	+	+	+	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant





# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbrF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Lead Acetate	C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> Pb	GL			60	+	+	-	+	+	+	+	+	+	+	+	+
Chlorine Bleaching	see sodium hypochlorite																
Lead Nitrate	Pb(NO <sub>3</sub> ) <sub>2</sub>	50			20	+	+	+	+	+	+	+	+	+	+	+	+
Lead Tetraethyl	Pb(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>	TR	1,66	All	20	+	+	+	+	+	+	+	+	+	o	+	+
Lead Sugar	see lead acetate																
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	10	1,03		20	+	+	-	+	+	+	+	+	+	+	+	+
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	10			60	+	+	-	+	+	+	+	+	+	+	+	+
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Borax	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·10 H <sub>2</sub> O	GL			60	+	+	-	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	10	1,01		20	+	+	+	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Boric acid	H <sub>3</sub> BO <sub>3</sub> ·H <sub>2</sub> O	GL			60	+	+	-	+	+	+	+	+	+	+	+	+
Boron trifluoride	BF <sub>3</sub> ·H <sub>2</sub> O	10			20	o	o	-	+	+	+	+	+	+	+	+	+
Brake Fluid	Glykolether					+	+	+	+	+	+	+	-	-	+	+	+
Bromine	Br <sub>2</sub>	TR	3,19		20	-	+	-	-	+	+	-	o	-	-	+	+
Bromine potash	see potassium bromide																
Bromic Acid	HBrO <sub>3</sub>	10			20	o	+	-	+) +	+	+	o	+	-	+	+	+
Bromic Acid	HBrO <sub>3</sub>	10			40	-	+	-	+) +	+	+	o	+	-	+	+	+
Bromic Acid	HBrO <sub>3</sub>	10			60	-	+	-	o +	+	+	o	+	-	o	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	10	1,07		20	-	o	-	+) +	+	+	o	+	-	+	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	10			40	-	o	-	+) +	+	+	o	+	-	+	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	10			60	-	-	-	+) +	+	+	o	+	-	o	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	48	1,44		20	-	o	-	+) +	+	+	o	+	o	+	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	48			40	-	o	-	+) +	+	+	o	+	-	+	+	+
Bromhydric acid	HBr + H <sub>2</sub> O	48			60	-	-	-	+) +	+	+	o	+	-	o	+	+
Butane Carbonic Acid	see butyric acid																
Butanol	C <sub>4</sub> H <sub>9</sub> OH	TR	0,81	All	20	+	+	+	+	+	+	+	+	+	+	+	+
Butanol	C <sub>4</sub> H <sub>9</sub> OH	TR			40	+	+	+	o	+	+	o	o	+	+	+	+
Butanol	C <sub>4</sub> H <sub>9</sub> OH	TR			60	+	+	+	o	+	+	-	o	+	+	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>7</sub> O	TR	0,81	Al	20	+	+	-	+	-	+	o	-	-	+	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>7</sub> O	TR			40	+	+	-	o	-	+	-	-	-	o	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>7</sub> O	TR			60	+	+	-	o	-	+	-	-	-	o	+	+
Butane Triol	C <sub>4</sub> H <sub>10</sub> O <sub>3</sub>	TR			20	+	+	-	+	+	+	+	o	+	+	+	+
Butenal, trans-2-	see propylene aldehyde																
Butyric Acid	C <sub>4</sub> H <sub>7</sub> COOH	20	0,88		20	+	+	+	-	+	+	+	+	-	+	+	+
Butyric Acid	C <sub>4</sub> H <sub>7</sub> COOH	TR	0,96		20	+	+	+	-	+	+	+	o	-	o	+	+
Butyl Acetate	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	TR	0,88	All	20	+) +	+	+	o	+	+	+	o	-	+	+	+
Butyl Acrylate	see butyl acrylate																
Butyl Alcohol	see butanol																
Butyl Chloride	C <sub>4</sub> H <sub>9</sub> Cl	TR	0,89	Al	20	o	+	-	+	+	+	+	-	-	-	+	+
Butyl Chloride	C <sub>4</sub> H <sub>9</sub> Cl	TR			40	o	+	-	+) +	+	+	o	-	-	-	+	+
Butyl Chloride	C <sub>4</sub> H <sub>9</sub> Cl	TR			60	o	+	-	+) +	+	+	o	-	-	-	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	TR			20	+	+	+	o	+	+	+	+	-	+	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	TR			40	+	+	o	o	+	+	+	+	-	+	+	+
Butane Diol	HO(CH <sub>2</sub> ) <sub>2</sub> OH	TR			60	+	+	-	o	+	+	+	o	-	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Butyl Ether	see dibutyl ether																
Butylphenol	see butyl phenol																
Butyl Phenol	HOC <sub>6</sub> H <sub>4</sub> C(CH <sub>3</sub> ) <sub>2</sub>	TR			20	+	+	-	+	+	+	+	o	-	-	+	+
Calcium Bisulphite	Ca(HSO <sub>3</sub> ) <sub>2</sub>	10			20	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Calcium Bisulphite	Ca(HSO <sub>3</sub> ) <sub>2</sub>	GL			20	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Calcium Bisulphite	Ca(HSO <sub>3</sub> ) <sub>2</sub>	GL			40	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Calcium Bisulphite	Ca(HSO <sub>3</sub> ) <sub>2</sub>	GL			60	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Calcium Chlorate	CaClO <sub>4</sub> +H <sub>2</sub> O	10			20	+	+	o	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	10			60	o	o	+	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	GL	1,40		20	+	+	o	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	GL			40	+	+	o	+	+	+	+	+	+	+	+	+
Calcium Chloride	CaCl <sub>2</sub> +H <sub>2</sub> O	GL			60	o	+	o	+	+	+	+	+	+	+	+	+
Calcium Hydroxide	Ca(OH) <sub>2</sub>	15			20	+	+	-	+	+	+	+	+	+	+	+	+
Calcium Hydroxide	Ca(OH) <sub>2</sub>	15			40	+	+	-	+	+	+	+	+	+	+	+	+
Calcium Hydroxide	Ca(OH) <sub>2</sub>	15			60	+	+	-	+	+	+	+	+	o	+	+	+
Calcium Hypochlorite	Ca(OCl) <sub>2</sub>	10			20	o	+	-	+ <sup>1)</sup>	+	+	o	+	+	+	+	+
Calcium Hypochlorite	Ca(OCl) <sub>2</sub>	10			40	o	+	-	+ <sup>1)</sup>	+	+	o	+	o	+	+	+
Calcium Hypochlorite	Ca(OCl) <sub>2</sub>	10			60	-	o	-	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Calcium Nitrate	Ca(NO <sub>3</sub> ) <sub>2</sub>	50	1,48		20	+	+	+	+	+	+	+	+	+	+	+	+
Calcium Nitrate	Ca(NO <sub>3</sub> ) <sub>2</sub>	50			40	+	+	+	+	+	+	+	+	+	+	+	+
Caprylic acid	see octanoid acid																
Carbamide	see urea																
Carbonic Acid	see fatty acids																
Cellosolve	see ethyl glycol																
Chlorobenzene	C <sub>6</sub> H <sub>5</sub> Cl	TR	1,11	All	20	+	+	+	o	+	+	+	+	-	-	+	+
Chlorobenzene	C <sub>6</sub> H <sub>5</sub> Cl	TR			40	+	+	+	o	+	+	+	-	-	-	+	+
Chlorobenzene	C <sub>6</sub> H <sub>5</sub> Cl	TR			60	+	+	+	-	+	+	+	-	-	-	+	+
Chlorine Bleaching	see sodium hypochlorite																
Chlorobutane	see butyl chloride																
Chlorocalcium	see calcium chloride																
Chlorinated Diphenyl	C <sub>12</sub> H <sub>9</sub> Cl	TR			20	+ <sup>1)</sup>	+	+	-	+	+	o	+	-	-	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	85	1,36		20	-	+	-	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	85			40	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	85			60	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	98			20	-	+	-	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	98			40	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloroacetic Acid	C <sub>2</sub> H <sub>3</sub> ClO <sub>2</sub>	98			60	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloroacetic acid ethyl ester	see ethyl chloracetate																
Chloroethane	C <sub>2</sub> H <sub>5</sub> Cl	TR	0,92		20	+	+	+	-	+	+	+	o	-	o	+	+
Chloroethanol	ClH <sub>2</sub> C-CH <sub>2</sub> OH	TR	1,20		20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	-	+	o	+	+
Chloroethanol	ClH <sub>2</sub> C-CH <sub>2</sub> OH	TR			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	o	+	o	-	o	o	+	+
Chloroethanol	ClH <sub>2</sub> C-CH <sub>2</sub> OH	TR			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	o	+	o	-	-	o	+	+
Chlorite bleach	see sodium chlorite																
Chloroform	CHCl <sub>3</sub>	TR	1,48		20	+ <sup>1)</sup>	+	-	o	+	+	-	o	-	-	+	+
Chloroethene	see trichloroethane																
Chloric Acid	HClO <sub>3</sub>	10			20	o	+	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloric Acid	HClO <sub>3</sub>	10			40	o	o	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Chloric Acid	HClO <sub>3</sub>	10			60	o	o	-	o	+	+	-	+	-	+	+	+
Chlorosulfuric acid	see chlorosulphonic acid																
Chlorosulphonic Acid	HOSO <sub>2</sub> Cl	TR	1,77		20	+ <sup>1)</sup>	+	-	-	-	+	-	o	-	-	+	+
Chlorotoluene	see benzyl chloride																
Chlorine Water	Cl <sub>2</sub> +H <sub>2</sub> O	GL			20	o	+	-	o	+	+	o	-	-	+	+	+
Chlorine Water	Cl <sub>2</sub> +H <sub>2</sub> O	GL			40	o	+	-	o	+	+	o	-	-	+	+	+

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Chlorine Water	Cl <sub>2</sub> +H <sub>2</sub> O	GL			60	o	o	-	o	+	+	-	-	-	o	+	+
Hydrochloric acid solution	see hydrochloric acid																
Zinc chloride	see zinc chloride																
Chromic Acid	CrO <sub>3</sub> +H <sub>2</sub> O	30			20	o	+	-	o	+	+	o	+	-	-	+	+
Chromic Acid	CrO <sub>3</sub> +H <sub>2</sub> O	50			20	o	o	-	-	+	+	o	+	-	-	+	+
Chromic Acid	CrO <sub>3</sub> +H <sub>2</sub> O	50			40	o	o	-	-	+	+	-	+	-	-	+	+
Chromic Acid	CrO <sub>3</sub> +H <sub>2</sub> O	50			60	o	o	-	-	+	+	-	+	-	-	+	+
Chromic-Sulphuric-Acid-Mixture	H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O+CrO <sub>3</sub>	50			20	o	o	-	o	+	+	-	+	-	-	+	+
Chromic-Sulphuric-Acid-Mixture	H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O+CrO <sub>3</sub>	50			40	o	o	-	-	+	+	-	+	-	-	+	+
Chromic-Sulphuric-Acid-Mixture	H <sub>2</sub> SO <sub>4</sub> +H <sub>2</sub> O+CrO <sub>3</sub>	50			60	o	o	-	-	+	+	-	+	-	-	+	+
Chromium Trioxide	see chromic acid																
Clophene	see chlorinated diphenyl																
Crotonaldehyde	see propylene aldehyde																
Hydrocyanic Acid	HCN	TR	0,69		20	+	+	-	+	+	+	+	+	o	+	+	+
Hydrocyanic Acid	HCN	GL			20	+	+	-	+	+	+	+	o	-	o	+	+
Hydrocyanic Acid	HCN	GL			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	o	-	o	+	+
Hydrocyanic Acid	HCN	GL			60	o	+	-	+ <sup>1)</sup>	+	+	o	o	-	o	+	+
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	TR	0,78	AI	20	+	+	+	+	+	+	+	+	+	-	+	+
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	TR			40	+	+	+	+	+	+	+	+	+	-	+	+
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	TR			60	+	+	+	o	+	+	+	o	-	-	+	+
Cyclohexanol	C <sub>6</sub> H <sub>12</sub> O	TR	0,94	AIII	20	+	+	-	+	+	+	+	o	o	o	+	+
Cyclohexanol	C <sub>6</sub> H <sub>12</sub> O	TR			40	+	+	-	+	+	+	+	o	o	o	+	+
Cyclohexanone	C <sub>6</sub> H <sub>10</sub> O	TR	0,95	All	20	+	+	+	+	+	+	+	-	-	o	+	+
Decahydronaphtalene	see decaline																
Decaline	C <sub>10</sub> H <sub>18</sub>	TR	0,88	AIII	20	+	+	+	o	+	+	+	+	o	-	+	+
Decaline	C <sub>10</sub> H <sub>18</sub>	TR			40	+ <sup>1)</sup>	+	+	o	+	+	o	+	o	-	+	+
Decaline	C <sub>10</sub> H <sub>18</sub>	TR			60	+ <sup>1)</sup>	+	+	o	+	+	o	+	o	-	+	+
Dextrine	C <sub>6</sub> H <sub>10</sub> O <sub>5</sub> +H <sub>2</sub> O	18			20	+	+	+	+	+	+	+	+	+	+	+	+
Dextrine	C <sub>6</sub> H <sub>10</sub> O <sub>5</sub> +H <sub>2</sub> O	18			40	+	+	+	+	+	+	+	+	o	+	+	+
Dextrine	C <sub>6</sub> H <sub>10</sub> O <sub>5</sub> +H <sub>2</sub> O	18			60	+	+	+	+	+	+	+	+	o	+	+	+
Dextrine	C <sub>6</sub> H <sub>10</sub> O <sub>5</sub> +H <sub>2</sub> O	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Dextronic acid	see gluconic acid																
Diacetone Alcohol	(CH <sub>3</sub> ) <sub>2</sub> C(OH)CH <sub>2</sub> COCH <sub>3</sub>	TR		B	20	+	+	-	-	+	+	+	+	-	+	+	+
Diacetone Alcohol	(CH <sub>3</sub> ) <sub>2</sub> C(OH)CH <sub>2</sub> COCH <sub>3</sub>	TR			40	+	+	-	-	+	+	+	+	-	+	+	+
Diacetone Alcohol	(CH <sub>3</sub> ) <sub>2</sub> C(OH)CH <sub>2</sub> COCH <sub>3</sub>	TR			60	+	+	-	-	+	+	+	+	-	+	+	+
Diamide	see hydrazine																
Dibromoethane	see ethylene bromide																
Dibutyl Ether	C <sub>8</sub> H <sub>18</sub> O	TR	0,77	All	20	+ <sup>1)</sup>	+	-	o	+	+	o	-	+	o	+	+
Dibutyl Ether	C <sub>8</sub> H <sub>18</sub> O	TR			40	+ <sup>1)</sup>	+	-	-	+	+	-	-	o	o	+	+
Dibutyl Ether	C <sub>8</sub> H <sub>18</sub> O	TR			60	+ <sup>1)</sup>	+	-	-	+	+	-	-	o	+	+	
Dibutyl Phtalate	C <sub>8</sub> H <sub>16</sub> (CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	TR	1,05		20	+	+	+	+	+	+	+	o	-	o	+	+
Dibutyl Phtalate	C <sub>8</sub> H <sub>16</sub> (CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	TR			40	+ <sup>1)</sup>	+	+	o	+	+	+	-	-	-	+	+
Dibutyl Phtalate	C <sub>8</sub> H <sub>16</sub> (CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	TR			60	+ <sup>1)</sup>	+	+	o	o	+	+	-	-	-	+	+
Dibutyl Sebacate	C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	TR	0,94		20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	o	-	-	+	+
Dibutyl Sebacate	C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	TR			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	o	-	-	+	+
Dibutyl Sebacate	C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	TR			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	o	-	-	+	+
Dichlorodifluorine-Methane	CF <sub>2</sub> Cl <sub>2</sub>	TR	1,32		20	+	+	-	-	+	+ <sup>1)</sup>	+	o	o	o	+	+
Dichloro Acetic Acid	CHCl <sub>2</sub> CO <sub>2</sub> H	TR	1,56		20	-	+	-	+ <sup>1)</sup>	+	+	-	o	-	+	+	+
Dichloro Acetic Acid	CHCl <sub>2</sub> CO <sub>2</sub> H	TR			40	-	o	-	+ <sup>1)</sup>	+	+	-	o	-	+	+	+
Dichloro Acetic Acid	CHCl <sub>2</sub> CO <sub>2</sub> H	TR			60	-	o	-	o	+	+	-	-	-	o	+	+
Dichloroethane	see ethyl dichloride																
Dichloroethylene 1,1	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	TR	1,22	AI	20	+ <sup>1)</sup>	+	-	o	+	+	-	+	+	-	+	+
Dichloroethylene 1,1	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	TR			40	+ <sup>1)</sup>	+	-	o	+	+	-	+	+	-	+	+
Dichloroethylene 1,1	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	TR			60	+ <sup>1)</sup>	+	-	o	+	+	-	+	+	-	+	+
Dichloromethane	see methylene chloride																

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant





# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Diesel Fuel		H		AIII	20	+	+	+	o	+	+	+	+	+	-	+	+
Diesel Fuel		H			40	+	+	+	o	+	+	+	+	+	-	+	+
Diesel Fuel		H			60	+	+	+	-	+	+	+	+	+	-	+	+
Diethanolamine	HN(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub>		1,10		20	+	+	-	+	o	+	+	o	-	+	+	+
Diethanolamine	HN(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub>				40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	o	+	o	o	-	+	+	+
Diethanolamine	HN(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub>				60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	-	+	o	o	-	+	+	+
Diethylamine	C <sub>4</sub> H <sub>11</sub> N	10	0,70	B	20	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	o	+	-	-	-	+	+	+
Diethylcellosolve	see ethyl glycol																
Diethylene Oxide	see butanone																
Diethyl Ether	see ether																
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	30			20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	o	+	+	+
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	30			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	o	o	+	+
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	30			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	o	o	+	+
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	GL			20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	o	+	+	+
Diisobutyl Ketone	see 2,6-dimethylheptan-4-one																
Diisopropylether	see isopropyl ether																
2,6-Dimethylheptan-4-one	C <sub>8</sub> H <sub>16</sub> O	TR			20	+	+	-	+	+	+	+	+	-	+	+	+
2,6-Dimethylheptan-4-one	C <sub>8</sub> H <sub>16</sub> O	TR			40	+	+	-	+	+	+	+	-	-	+	+	+
2,6-Dimethylheptan-4-one	C <sub>8</sub> H <sub>16</sub> O	TR			60	+	+	-	+	+	+	+	-	-	+	+	+
Dimethylamine	(CH <sub>3</sub> ) <sub>2</sub> NH	TR	0,73		20	+	+	-	+	o	+	+	o	-	o	+	+
Dimethyl Benzene	see xylene																
Dimethyl Formamide (DMF)	C <sub>2</sub> H <sub>5</sub> NO	TR	0,95		20	+	+	-	+	-	+	+	-	o	+	+	+
Dimethyl Formamide (DMF)	C <sub>2</sub> H <sub>5</sub> NO	TR			40	+	+	-	+	-	+	+	-	-	+	+	+
Dimethyl Formamide (DMF)	C <sub>2</sub> H <sub>5</sub> NO	TR			60	+	+	-	+	-	+	+	-	-	+	+	+
Dimethyl Phtalate (DMP)	C <sub>8</sub> H <sub>10</sub> (COOCH <sub>2</sub> ) <sub>2</sub>	TR			20	+	+	-	+	+	+	+	-	-	-	+	+
Dimethyl Phtalate (DMP)	C <sub>8</sub> H <sub>10</sub> (COOCH <sub>2</sub> ) <sub>2</sub>	TR			40	+	+	-	+	+	+	+	-	-	-	+	+
Dimethyl Phtalate (DMP)	C <sub>8</sub> H <sub>10</sub> (COOCH <sub>2</sub> ) <sub>2</sub>	TR			60	+	+	-	+	+	+	+	-	-	-	+	+
Dinonyl Phtalate	C <sub>26</sub> H <sub>42</sub> O <sub>4</sub>	TR			20	+	+	-	+	+	+	+	-	-	-	+	+
Dinonyl Phtalate	C <sub>26</sub> H <sub>42</sub> O <sub>4</sub>	TR			30	+	+	-	+	+	+	+	-	-	-	+	+
Diocetyl Phtalate	C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	TR			20	+	+	-	o	+	+	+	+	-	-	+	+
Diocetyl Phtalate	C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	TR			40	+	+	-	o	+	+	+	+	-	-	+	+
Diocetyl Phtalate	C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	TR			60	+	+	-	o	o	+	+	+	-	-	+	+
Dioxane	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	TR	1,03	B	20	+	+	+	-	+	+	+	-	o	+	+	+
Dioxane	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	TR			40	+	+	+	-	o	+	+	-	-	+	+	+
Dioxane	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	TR			60	+ <sup>1)</sup>	+	+	-	-	+	o	-	-	+	+	+
DMF	see dimethyl formamide																
DMP	see dimethyl phtalate																
Diethylamine	C <sub>4</sub> H <sub>11</sub> N	10	0,70	B	20	+	+	+	+	o	+	-	-	-	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	10	1,09		20	+	+	-	+	+	+	+	+	+	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	10			40	o	+	-	+	+	+	+	+	+	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	10			60	o	o	-	+	+	+	+	+	+	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50			20	+	+	-	+	+	+	+	+	+	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50			40	o	+	-	+	+	+	+	+	+	+	+	+
Ferrochloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50			60	o	+	-	+	+	+	+	+	+	+	+	+
Ferrous Nitrate	Fe(NO <sub>3</sub> ) <sub>2</sub>	TR			20	+	+	-	+	+	+	+	+	+	+	+	+
Ferrous Nitrate	Fe(NO <sub>3</sub> ) <sub>2</sub>	TR			40	+	+	-	+	+	+	+	+	+	+	+	+
Ferrous Nitrate	Fe(NO <sub>3</sub> ) <sub>2</sub>	TR			60	+	+	-	+	+	+	+	+	+	+	+	+
Ferrosulphate	FeSO <sub>4</sub>	20	1,21		20	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	o	+	+	+	+	+
Ferrosulphate	FeSO <sub>4</sub>	20			40	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	o	+	+	+	+	+
Ferrosulphate	FeSO <sub>4</sub>	20			60	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	-	+	+	+	+	+
Ferrichloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50	1,55		20	-	+	-	+ <sup>2)</sup>	+ <sup>2)</sup>	+	+	+	+	+	+	+
Ferrichloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50			40	-	o	-	+ <sup>2)</sup>	+ <sup>2)</sup>	+	+	+	+	+	+	+
Ferrichloride	FeCl <sub>3</sub> +H <sub>2</sub> O	50			60	-	-	-	+ <sup>2)</sup>	+ <sup>2)</sup>	+	+	+	+	+	+	+
Ferric Sulphate	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	50	1,61		20	+	+	-	+	+	+	+	+	+	+	+	+
Ferric Sulphate	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	50			40	+	+	-	+	+	+	+	+	+	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Ferric Sulphate	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	50			60	+	+	-	+	+	+	+	+	+	+	+	+
Ferro-Gallic-Inc						see ink											
Iron Vitriol						see ferrosulphate											
Glacial acetic acid						see acetic acid 100 %											
Epichlorhydrine	H <sub>2</sub> C-O-CH-CH <sub>2</sub> Cl			All	20	o	+	-	+	+	+	+	-	-	-	+	+
Epichlorhydrine	H <sub>2</sub> C-O-CH-CH <sub>2</sub> Cl				40	o	+	-	+	+	+	+	-	-	-	+	+
Epichlorhydrine	H <sub>2</sub> C-O-CH-CH <sub>2</sub> Cl				60	o	+	-	+	+	+	+	-	-	-	+	+
Mineral oil					20	+	+	+	+	+	+	+	+	+	-	+	+
Mineral oil					40	+	+	+	+	+	+	+	+	+	-	+	+
Mineral oil					60	+	+	+	+	+	+	+	+	+	-	+	+
Vinegar						see wine vinegar											
Acetic Acid	CH <sub>3</sub> COOH	10			20	+	+	o	+	+	+	+	o	o	+	+	+
Acetic Acid	CH <sub>3</sub> COOH	10			40	+	+	o	+	+	+	+	-	-	+	+	+
Acetic Acid	CH <sub>3</sub> COOH	10			60	+	+	-	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	25			20	+	+	o	+	+	+	+	-	-	+	+	+
Acetic Acid	CH <sub>3</sub> COOH	25			40	+	+	o	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	25			60	+	+	-	+	+	+	+	-	-	-	+	+
Acetic Acid	CH <sub>3</sub> COOH	50			20	+	+	o	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	50			40	-	+	o	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	50			60	-	+	-	+	+	+	+	-	-	-	+	+
Acetic Acid	CH <sub>3</sub> COOH	80			20	-	+	-	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	80			40	-	+	-	+	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	80			60	-	+	-	o	+	+	+	-	-	-	+	+
Acetic Acid	CH <sub>3</sub> COOH	100	1,05		20	-	+	-	o	+	+	+	-	-	o	+	+
Acetic Acid	CH <sub>3</sub> COOH	100			40	-	+	-	o	+	+	+	-	-	-	+	+
Acetic Acid	CH <sub>3</sub> COOH	100			60	-	+	-	o	o	+	+	-	-	-	+	+
Ethanoic anhydrate						see acetanhydride											
Acetic acid buthyl ester						see butyl acetate											
Acetic acid ethyl ester						see ethyl acetate											
Acetic acid methyl ester						see acetic methyl ester											
Ethanal						see acetaldehyde											
Ethane Dicarboxylic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	50	1,06		20	+	+	-	+	+	+	+	+	+	+	+	+
Ethane Dicarboxylic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	50			40	+	+	-	+	+	+	+	+	+	+	+	+
Ethane Dicarboxylic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	50			60	+	+	-	+	+	+	+	+	+	+	+	+
Ethanedioic acid						see oxalic acid											
Ethanol	CH <sub>3</sub> -CH <sub>2</sub> -OH	TR	0,79	B	20	+	+	+	+	+	+	+	+	+	+	+	+
Ethanol	CH <sub>3</sub> -CH <sub>2</sub> -OH	TR			40	+	+	+	+	+	+	+	o	+	+	+	+
Ethanol	CH <sub>3</sub> -CH <sub>2</sub> -OH	TR			60	+	+	+	+	+	+	+	o	+	+	+	+
Ether	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> O	TR	0,71	Al	20	+	+	+	-	+	+	+	o	o	o	+	+
Essential oils					20	+	+	+	+	+	+	+	+	-	-	+	+
Essential oils					40	+	+	+	+	+	+	+	o	-	-	+	+
Essential oils					60	+	+	+	+	+	+	+	-	-	-	+	+
Ethyl Acetate	H <sub>3</sub> C-COOC <sub>2</sub> H <sub>5</sub>	TR	0,90	Al	20	+	+	+	o	o	+	+	-	-	o	+	+
Ethyl Acetate	H <sub>3</sub> C-COOC <sub>2</sub> H <sub>5</sub>	TR			40	+	+	+	-	o	+	+	-	-	o	+	+
Ethyl Acetate	H <sub>3</sub> C-COOC <sub>2</sub> H <sub>5</sub>	TR			60	+	+	+	-	o	+	+	-	-	-	+	+
Ethyl Alcohol						see ethanol											
Ethyl Benzene	C <sub>6</sub> H <sub>5</sub> -C <sub>2</sub> H <sub>5</sub>	TR	0,87	All	20	<sup>1)</sup>	+	+	o	+	+	-	o	-	-	+	+
Ethyl Benzene	C <sub>6</sub> H <sub>5</sub> -C <sub>2</sub> H <sub>5</sub>	TR			40	<sup>1)</sup>	+	+	-	+	+	-	-	-	-	+	+
Ethyl Benzene	C <sub>6</sub> H <sub>5</sub> -C <sub>2</sub> H <sub>5</sub>	TR			60	<sup>1)</sup>	+	+	-	+	+	-	-	-	-	+	+
Ethyl Chloracetate	ClH <sub>2</sub> C-CO-OC <sub>2</sub> H <sub>5</sub>			All	20	o	+	-	+	+	+	+	-	-	-	+	+
Ethyl Chloracetate	ClH <sub>2</sub> C-CO-OC <sub>2</sub> H <sub>5</sub>				40	o	+	-	+	+	+	+	-	-	-	+	+
Ethyl Chloracetate	ClH <sub>2</sub> C-CO-OC <sub>2</sub> H <sub>5</sub>				60	o	+	-	+	+	+	+	-	-	+	+	+
Ethyl Chloride						see chloroethane											
Ethylene Bromide	CH <sub>2</sub> Br-CH <sub>2</sub> Br	TR	2,18		20	<sup>1)</sup>	+	+	<sup>2)</sup>	o	+	o	+	o	o	+	+
Ethylene Bromide	CH <sub>2</sub> Br-CH <sub>2</sub> Br	TR			40	<sup>1)</sup>	+	+	o	o	+	o	+	-	o	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in °C]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Ethylene Bromide	CH <sub>2</sub> Br-CH <sub>2</sub> Br	TR			60	+ <sup>1)</sup>	+	+	-	o	+	o	o	-	-	+	+
Ethylene Chlorhydrine	see chloroethanol																
Ethyl Dichloride	H <sub>3</sub> C-CHCl <sub>2</sub>		1,20	Al	20	+	+	+	o	+	+	+	+	o	o	+	+
Ethyl Dichloride	H <sub>3</sub> C-CHCl <sub>2</sub>				40	+	+	+	o	+	+	+	+	-	o	+	+
Ethyl Dichloride	H <sub>3</sub> C-CHCl <sub>2</sub>				60	+	+	+	-	+	+	+	o	-	-	+	+
Ethylene Diamine	H <sub>2</sub> N-CH <sub>2</sub> -CH <sub>2</sub> -NH <sub>2</sub>	TR	0,98		20	+	+	+	+	+	+	+	o	o	+	+	+
Ethylene Diamine	H <sub>2</sub> N-CH <sub>2</sub> -CH <sub>2</sub> -NH <sub>2</sub>	TR			40	+	+	+	+	+	+	+	o	o	+	+	+
Ethylene Diamine	H <sub>2</sub> N-CH <sub>2</sub> -CH <sub>2</sub> -NH <sub>2</sub>	TR			60	+	+	+	+	+	+	+	-	-	+	+	+
Ethylene Dicarboxylic Acid	see maleic acid																
Ethylene Glycol	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	TR	1,11		20	+	+	+	+	+	+	+	+	+	+	+	+
Ethylene Glycol	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	TR			40	+	+	+	+	+	+	+	+	+	+	+	+
Ethylene Glycol	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	TR			60	+	+	+	+	+	+	+	+	+	+	+	+
Ethyl Ether	see ether																
Ethyl Fluid	see lead tetraethyl																
Ethyl Glycol	C <sub>2</sub> H <sub>4</sub> -O-CH <sub>2</sub> -HC,OH	TR	0,93	All	20	+	+	-	-	+	+	+	+	+	-	+	+
Ethyl Glycol	C <sub>2</sub> H <sub>4</sub> -O-CH <sub>2</sub> -HC,OH	TR			40	+	+	-	-	+	+	+	+	+	-	+	+
Ethyl Glycol	C <sub>2</sub> H <sub>4</sub> -O-CH <sub>2</sub> -HC,OH	TR			60	+	+	-	-	+	+	+	+	+	-	+	+
Ferrocyanide of Potassium	see potassium ferricyanide																
Ferro	see ferrous nitrate																
Ferric chloride	see ferrochloride																
Potassium Ferrocyanide	see potassium ferrocyanide																
Fatty Acids	C <sub>n</sub> H <sub>2n</sub> CO <sub>2</sub> H	100	0,90		20	+	+	-	o	+	+	+	+	o	-	+	+
Fatty Acids	C <sub>n</sub> H <sub>2n</sub> CO <sub>2</sub> H	100			40	+	+	-	o	+	+	+	+	-	-	+	+
Fatty Acids	C <sub>n</sub> H <sub>2n</sub> CO <sub>2</sub> H	100			60	+	+	-	o	+	+	+	+	-	-	+	+
Pine Needle Oil	see essential oils																
Fluorine monoammoniate	see ammonium fluoride																
Hydrofluosilic Acid	H <sub>2</sub> SiF <sub>6</sub>	32	1,17		20	-	+	-	+ <sup>1)</sup>	+	+	-	+	o	+	+	+
Hydrofluosilic Acid	H <sub>2</sub> SiF <sub>6</sub>	32			40	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	o	+	+
Hydrofluosilic Acid	H <sub>2</sub> SiF <sub>6</sub>	32			60	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	o	+	+
Hydrofluoric Acid	HF	40	1,06		20	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	o	+	+
Hydrofluoric Acid	HF	40			40	-	o	-	+ <sup>1)</sup>	+	+	-	+	-	o	+	+
Hydrofluoric Acid	HF	40			60	-	o	-	o	+	+	-	o	-	-	+	+
Hydrofluoric Acid	HF	60			20	-	o	-	+	+	+	-	+	-	o	+	+
Hydrofluoric Acid	HF	70	1,23		20	-	o	-	o	+	+	-	o	-	o	+	+
Hydrofluoric Acid	HF	70			40	-	o	-	o	+	+	-	o	-	-	+	+
Hydrofluoric Acid	HF	70			60	-	o	-	o	o	+	-	o	-	-	+	+
Fluoric acid	see hydrofluoric acid																
Formaldehyde	CH <sub>2</sub> O+H <sub>2</sub> O	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Formaldehyde	CH <sub>2</sub> O+H <sub>2</sub> O	10			40	+	+	-	+	+	+	+	+	o	+	+	+
Formaldehyde	CH <sub>2</sub> O+H <sub>2</sub> O	10			60	+	+	-	+	+	+	+	+	-	+	+	+
Formaldehyde	CH <sub>2</sub> O+H <sub>2</sub> O	35	1,10	All	20	+	+	-	+	+	+	+	+	-	+	+	+
Formaldehyde	CH <sub>2</sub> O+H <sub>2</sub> O	40		All	20	+	+	-	+	+	+	+	+	o	+	+	+
Formalin	see formaldehyde																
Formamide	HCONH <sub>2</sub>	100			20	+	+	+	+	+	+	+	o	+	+	+	+
Formamide	HCONH <sub>2</sub>	100			40	+	+	+	+	+	+	+	-	o	+	+	+
Formamide	HCONH <sub>2</sub>	100			60	+	+	+	+	+	+	+	-	-	+	+	+
Freon	see dichlorodifluorine-methane																
Fruit Juice		H			20	+	+	o	+	+	+	+	+	+	+	+	+
Fruit Juice		H			40	+	+	o	+	+	+	+	+	+	+	+	+
Fruit Juice		H			60	+	+	o	+	+	+	+	+	+	+	+	+
Furfuryl Alcohol	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	TR	1,13	All	20	+	+	+	+	+	+	+	o	-	+	+	+
Furfuryl Alcohol	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	TR			40	+	+	+	o	+	+	+	-	-	+	+	+
Furfuryl Alcohol	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	TR			60	+	+	+	o	o	+	+	-	-	+	+	+
Gallotannic Acid	see tannic acid																
Gallic Acid	C <sub>6</sub> H <sub>2</sub> (OH) <sub>3</sub> CO <sub>2</sub> H	50			20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	+	+	+	+

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<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Tanning Extracts Vegetable		H			20	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	-	+	+	+	+	+
Tanning Extracts Vegetable		H			40	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	-	+	o	+	+	+
Tanning Extracts Vegetable		H			60	+ <sup>1)</sup>	+	o	+	+	+	-	+	-	o	+	+
Tannic Acid	C <sub>6</sub> O <sub>4</sub> H <sub>6</sub>	50			20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	+	+	+	+
Tannic Acid	C <sub>6</sub> O <sub>4</sub> H <sub>6</sub>	50			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	o	+	+	+
Tannic Acid	C <sub>6</sub> O <sub>4</sub> H <sub>6</sub>	50			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	-	+	+	+
Ammonium bifluoride	see ammonium hydrogen fluoride																
Glauber's Salt	see sodium sulphate																
Gluconic Acid	C <sub>6</sub> H <sub>12</sub> O <sub>7</sub>				20	+	+	-	+	+	+	+	+	+	+	+	+
Gluconic Acid	C <sub>6</sub> H <sub>12</sub> O <sub>7</sub>				40	+	+	-	+	+	+	+	+	+	+	+	+
Gluconic Acid	C <sub>6</sub> H <sub>12</sub> O <sub>7</sub>				60	+	+	-	+	+	+	+	+	o	+	+	+
Glucose	see glucose solution																
Glycerin	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	TR	1,26		20	+	+	+	+	+	+	+	+	o	+	+	+
Glycerin	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	TR			40	+	+	+	+	+	+	+	+	o	+	+	+
Glycerin	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	TR			60	+	+	+	+	+	+	+	+	o	+	+	+
Glycol	see ethylene glycol																
Glycolic Acid	C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	37			20	+	+	-	+	+	+	+	+	+	+	+	+
Glycolic Acid	C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	70			20	+	+	-	+	+	+	+	+	-	+	+	+
Glycolic Acid	C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	70			40	+	+	o	o	+	+	o	-	o	+	+	+
Glycolic Acid	C <sub>2</sub> H <sub>4</sub> O <sub>3</sub>	70			60	+	+	-	-	o	+	+	o	-	-	+	+
Glucose	see glycerin																
Urea	CH <sub>4</sub> N <sub>2</sub> O	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Urea	CH <sub>4</sub> N <sub>2</sub> O	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Urea	CH <sub>4</sub> N <sub>2</sub> O	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Urea	CH <sub>4</sub> N <sub>2</sub> O	33			20	+	+	+	+	+	+	+	+	+	+	+	+
Urea	CH <sub>4</sub> N <sub>2</sub> O	33			40	+	+	o	+	+	+	+	+	+	+	+	+
Urea	CH <sub>4</sub> N <sub>2</sub> O	33			60	+	+	o	+	+	+	+	+	+	+	+	+
Heating oil		H		AIII	20	+	+	+	+	+	+	+	+	+	+	+	+
Heating oil		H			40	+	+	+	o	+	+	+	+	+	o	+	+
Heating oil		H			60	+	+	+	o	+	+	+	+	+	-	+	+
Heptane	C <sub>7</sub> H <sub>16</sub>	TR	0,68	AI	20	+	+	+	+	+	+	+	+	+	+	+	+
Heptane	C <sub>7</sub> H <sub>16</sub>	TR			40	+	+	+	+	+	+	+	+	+	-	+	+
Heptane	C <sub>7</sub> H <sub>16</sub>	TR			60	+	+	+	o	+	+	+	+	+	-	+	+
Hexahydrobenzene	see cyclohexane																
Hexalin	see cyclohexanol																
Hexamethylenetetramine	(CH <sub>2</sub> ) <sub>6</sub> N <sub>4</sub>	10			20	+	+	+	-	+	+	+	o	-	-	+	+
Hexamethylenetetramine	(CH <sub>2</sub> ) <sub>6</sub> N <sub>4</sub>	10			40	+	+	+	-	+	+	+	-	-	-	+	+
Hexamethylenetetramine	(CH <sub>2</sub> ) <sub>6</sub> N <sub>4</sub>	10			60	+	+	+	-	o	+	+	-	-	-	+	+
Hexamine	see hexamethylenetetramine																
Hexane	C <sub>6</sub> H <sub>14</sub>	TR		AI	20	+	+	+	+	+	+	+	+	+	-	+	+
Hexane	C <sub>6</sub> H <sub>14</sub>	TR			40	+	+	+	+	+	+	+	+	+	-	+	+
Hexane	C <sub>6</sub> H <sub>14</sub>	TR			60	+	+	+	o	+	+	+	+	+	-	+	+
Hexanedioic Acid	see adipic acid																
Hexanol	C <sub>6</sub> H <sub>13</sub> OH		0,82	AIII	20	+	+	-	+	+	+	+	+	-	+	+	+
Hexylalcohol	see hexanol																
Sal volatile	see ammonium carbonate																
Lunar caustic	see mercury nitrate																
Hydrazine	H <sub>2</sub> N-NH <sub>2</sub>	TR	1,08	B	20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	+	+	+	+
Hydrazine	H <sub>2</sub> N-NH <sub>2</sub>	TR			40	o	+	-	o	+	+	-	+	o	o	+	+
Hydrazine	H <sub>2</sub> N-NH <sub>2</sub>	TR			60	-	o	-	-	+	+	-	o	-	-	+	+
Hydrogen bromide solution	see bromhydric acid																
Hydroxybenzene	see phenol																
Hydroxysuccinic Acid	HOOC-CH <sub>2</sub> -CHOH-COOH	50			20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	+	+	+	+	+
Hydroxysuccinic Acid	HOOC-CH <sub>2</sub> -CHOH-COOH	50			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	+	+	+	+	+
Hydroxysuccinic Acid	HOOC-CH <sub>2</sub> -CHOH-COOH	50			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	+	+	+	+	+

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Hydroxy Acetic Acid						see glycolic acid											
Isobutanol						see isobutyl alcohol											
Isobutyl Alcohol	C <sub>4</sub> H <sub>10</sub> O	100	0,81	All	20	+	+	+	+	+	+	+	+	-	+	+	+
Isobutyl Alcohol	C <sub>4</sub> H <sub>10</sub> O	100			40	+	+	+	+	+	+	+	+	-	+	+	+
Isobutyl Alcohol	C <sub>4</sub> H <sub>10</sub> O	100			60	+	+	+	+	+	+	+	+	-	+	+	+
Isocyanate					20	+	+	+	-	-	+	o	+	+	-	+	+
Isooctane	C <sub>8</sub> H <sub>18</sub>	TR		AI	20	+	+	+	+	+	+	+	+	+	+	+	+
Isooctanol	C <sub>8</sub> H <sub>18</sub> -CH(C <sub>2</sub> H <sub>5</sub> )	TR	0,83	AIII	20	+	+	+	+	+	+	+	+	o	+	+	+
Isopropanol						see propyl alcohol											
Butyl Acetate	C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>		0,87	AI	20	+)1	+	o	o	+	+	o	-	+	+	+	+
Isopropyl Ether	C <sub>6</sub> H <sub>14</sub> O	TR	0,73	AI	20	+)1	+	o	o	+	+	-	-	-	-	+	+
Isopropyl Ether	C <sub>6</sub> H <sub>14</sub> O	TR			40	+)1	+	o	o	o	+	-	-	-	-	+	+
Isopropyl Ether	C <sub>6</sub> H <sub>14</sub> O	TR			60	+)1	+	o	o	o	+	-	-	-	-	+	+
Iodoform						see triiodinemethane											
Iodine Preparations		H			20	o	+	o	+	+	+	+	+	+	+	+	o
Iodine Preparations		H			40	o	+	o	+	+	+	+	+	+	+	+	o
Iodine Preparations		H			60	o	+	o	+	+	+	+	+	+	+	+	o
Hydriodic Acid	HJ	TR			20	o	o	-	+)1	+	+	-	+	+	+	+	+
Hydriodic Acid	HJ	TR			40	o	o	-	+)1	+	+	-	+	o	+	+	+
Hydriodic Acid	HJ	TR			60	-	o	-	+)1	+	+	-	+	o	+	+	+
Potash Bleaching Solution						see potassium hypochlorite											
Caustic potash						see potassium hydroxide											
Salt peter						see potassium nitrate											
Potassium Aluminium Sulphate	KAl(SO <sub>4</sub> )-2H <sub>2</sub> O	50			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Aluminium Sulphate	KAl(SO <sub>4</sub> )-2H <sub>2</sub> O	50			40	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Aluminium Sulphate	KAl(SO <sub>4</sub> )-2H <sub>2</sub> O	50			60	+	+	+	+	+	+	+	+	-	+	+	+
Potassium Bichromate						see potassium dichromate											
Potassium Bromate	KBrO <sub>3</sub> +H <sub>2</sub> O	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Bromate	KBrO <sub>3</sub> +H <sub>2</sub> O	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Bromate	KBrO <sub>3</sub> +H <sub>2</sub> O	GL			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	10	1,37		20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	10			60	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Bromide	KBr + H <sub>2</sub> O	GL			60	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Carbonate	K <sub>2</sub> CO <sub>3</sub>	GL			20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Carbonate	K <sub>2</sub> CO <sub>3</sub>	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Carbonate	K <sub>2</sub> CO <sub>3</sub>	GL			60	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Chlorate	KClO <sub>3</sub>	50			20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Chlorate	KClO <sub>3</sub>	50			40	+	+	-	+	+	+	+	+	o	+	+	+
Potassium Chlorate	KClO <sub>3</sub>	50			60	o	+	-	+	+	+	+	+	-	+	+	+
Potassium Chloride	KCl	10			20	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	10			40	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	10			60	o	o	-	+	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	GL	1,17		20	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	GL			40	o	+	-	+	+	+	+	+	+	+	+	+
Potassium Chloride	KCl	GL			60	o	o	-	+	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	50			20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	50			40	+	+	-	+	+	+	+	o	+	+	+	+
Potassium Cyanide	KCN	50			60	+	+	-	+	+	+	+	o	+	+	+	+
Potassium Cyanide	KCN	GL	1,31		20	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Potassium Cyanide	KCN	GL			60	+	+	-	+	o	+	+	+	+	+	+	+
Potassium Dichromate	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	40			20	+	+	-	+	+	+	+	+	+	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



## Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	20	1,11		20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	20			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	20			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferricyanide	K <sub>3</sub> Fe(CN) <sub>6</sub>	GL			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	10			20	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	10			40	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	10			60	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	16	1,11		20	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	16			40	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	16			60	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	GL			20	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	GL			40	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Ferrocyanide	K <sub>4</sub> Fe(CN) <sub>6</sub>	GL			60	+	+	+	+	+	+	o	+	+	+	+	+
Potassium Hydroxide	KOH	20	1,19		20	+	+	-	+	+	+	+	-	o	+	+	+
Potassium Hydroxide	KOH	20			40	+	+	-	+	+	+	+	-	o	o	+	+
Potassium Hydroxide	KOH	20			60	+	+	-	+	+	+	+	-	o	o	+	+
Potassium Hydroxide	KOH	30	1,29		20	+	+	-	+	+	+	+	-	o	+	+	+
Potassium Hydroxide	KOH	30			40	+	+	-	+	+	+	+	-	o	o	+	+
Potassium Hydroxide	KOH	30			60	+	+	-	+	+	+	+	-	o	o	+	+
Potassium Hydroxide	KOH	60	1,63		20	+	+	-	+	+	+	+	-	-	+	+	+
Potassium Hydroxide	KOH	60			40	+	+	-	+	+	+	+	-	-	+	+	+
Potassium Hydroxide	KOH	60			60	+	+	-	+	+	+	+	-	-	+	+	+
Potassium Hypochlorite	KClO	15			20	o	+	-	o	+	+	+	+	-	+	+	+
Potassium Hypochlorite	KClO	15			40	o	+	-	o	+	+	+	+	-	o	+	+
Potassium Hypochlorite	KClO	15			60	o	o	-	-	+	+	+	+	-	-	+	+
Potassium Iodide	KJ	50	1,55		20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Iodide	KJ	50			40	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Iodide	KJ	50			60	o	+	+	+	+	+	+	+	o	+	+	+
Potassium Iodide	KJ	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Iodide	KJ	GL			40	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Iodide	KJ	GL			60	o	+	o	+	+	+	+	+	o	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	24	1,17		20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	24			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Nitrate	KNO <sub>3</sub>	24			60	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Oxalate	K <sub>2</sub> (CO <sub>3</sub> ) <sub>2</sub>				20	+	+	-	+	+	+	+	+	-	+	+	+
Potassium Oxalate	K <sub>2</sub> (CO <sub>3</sub> ) <sub>2</sub>				40	+	+	-	+	+	+	+	+	-	+	+	+
Potassium Oxalate	K <sub>2</sub> (CO <sub>3</sub> ) <sub>2</sub>				60	+	+	-	+	+	+	+	+	-	+	+	+
Potassium Permanganate	KMnO <sub>4</sub>	6	1,04		20	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Permanganate	KMnO <sub>4</sub>	6			40	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Permanganate	KMnO <sub>4</sub>	6			60	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Permanganate	KMnO <sub>4</sub>	18			20	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Permanganate	KMnO <sub>4</sub>	18			40	+	+	+	+	+	+	+	+	o	+	+	+
Potassium Sulphate	K <sub>2</sub> SO <sub>4</sub>	10	1,08		20	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Sulphate	K <sub>2</sub> SO <sub>4</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Potassium Sulphate	K <sub>2</sub> SO <sub>4</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Milk of Lime																	
Camphor	C <sub>10</sub> H <sub>16</sub> O				20	+	+	+	+	+	+	+	o	+	o	+	+

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# Resistance Chart

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Camphor	C <sub>10</sub> H <sub>16</sub> O				40	+	+	+	+	+	+	+	o	o	o	+	+
Camphor	C <sub>10</sub> H <sub>16</sub> O				60	+	+	+	+	+	+	+	o	o	o	+	+
Carbolic Acid						see phenol											
Caster Oil						see ricinus oil											
Kerosene						see petroleum											
Kerosine						see petroleum											
Pine Needle Oil						see essential oils											
Hydrofluorosilicic acid						see hydrofluosilic acid											
Silicic Acid	Si(OH) <sub>4</sub>	TR			20	+	+	-	+	+	+	+	+	-	+	+	+
Silicic Acid	Si(OH) <sub>4</sub>	TR			40	+	+	-	+	+	+	+	+	-	+	+	+
Silicic Acid	Si(OH) <sub>4</sub>	TR			60	+	+	-	+	+	+	+	+	-	+	+	+
Sodium Chloride	NaCl	20			20	o	+	+	+	+	+	+	+	+	+	+	+
Sodium Chloride	NaCl	20			40	o	+	+	+	+	+	+	+	+	+	+	+
Sodium Chloride	NaCl	20			60	o	o	o	o	+	+	+	+	o	+	+	+
Carbon disulfide						see carbon bisulphide											
Carbon tetrachloride						see carbon tetrachloride											
Aqua Regia	3HCl+HNO <sub>3</sub>				20	-	-	-	-	o	+	-	o	-	o	+	+
Aqua Regia	3HCl+HNO <sub>3</sub>				40	-	-	-	-	-	+	-	-	-	-	+	+
Aqua Regia	3HCl+HNO <sub>3</sub>				60	-	-	-	-	-	+	-	-	-	-	+	+
Cuprous Chloride	CuCl	10			20	o	+	-	+	+	+	+	+	+	+	+	+
Cuprous Chloride	CuCl	10			40	o	+	-	+	+	+	+	+	+	+	+	+
Cuprous Chloride	CuCl	10			60	o	+	-	+	+	+	+	+	+	+	+	+
Cupric Chloride	CuCl <sub>2</sub>	20	1,21		20	o	+	-	+	+	+	+	+	+	+	+	+
Cupric Chloride	CuCl <sub>2</sub>	20			40	o	+	-	+	+	+	+	+	+	+	+	+
Cupric Chloride	CuCl <sub>2</sub>	20			60	o	+	-	+	+	+	+	+	+	+	+	+
Copper Acetate	(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub> Cu	50			20	+	+	-	+	+	+	+	+	+	+	+	+
Copper Acetate	(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub> Cu	50			40	+	+	-	+	+	+	+	+	+	+	+	+
Copper Acetate	(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub> Cu	50			60	+	+	-	+	+	+	+	+	o	+	+	+
Nantokite						see cuprous chloride											
Copper Nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub>	25	1,25		20	+	+	+	+	o	+	+	+	+	+	+	+
Copper Nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub>	25			40	+	+	+	+	o	+	+	+	+	+	+	+
Copper Nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub>	25			60	+	+	+	+	o	+	+	+	+	o	+	+
Copper Sulphate	CuSO <sub>4</sub>	18	1,21		20	+	+	-	+	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO <sub>4</sub>	18			40	+	+	-	+	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO <sub>4</sub>	18			60	+	+	-	+	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO <sub>4</sub>	GL			20	+	+	-	o	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO <sub>4</sub>	GL			40	+	+	-	o	+	+	+	+	+	+	+	+
Copper Sulphate	CuSO <sub>4</sub>	GL			60	+	+	-	o	+	+	+	+	o	+	+	+
Vitriol of copper						see copper sulphate											
Lanolin		TR			20	+	+	+	o	+	+	+	+	+	o	+	+
Lanolin		TR			40	+	+	+	-	+	+	+	+	+	-	+	+
Lanolin		TR			60	+	+	+	-	+	+	+	+	o	-	+	+
Lauric Acid	C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	TR			20	+	+	-	+ <sup>1)</sup>	+	+	-	+	-	-	+	+
Lauric Acid	C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	TR			40	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	-	-	+	+
Lauric Acid	C <sub>12</sub> H <sub>24</sub> O <sub>2</sub>	TR			60	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	-	+	-	-	+	+
Linseed oil		TR			20	+	+	+	+	+	+	+	+	+	+	+	+
Linseed oil		TR			40	+	+	+	+	+	+	+	+	+	o	+	+
Linseed oil		TR			60	+	+	+	o	+	+	+	+	+	-	+	+
Lithium Chloride	LiCl	45	1,30		20	o	+	-	+	+	+	+	+	+	+	+	+
Lithium Chloride	LiCl	45			40	o	+	-	+	+	+	+	+	+	+	+	+
Lithium Chloride	LiCl	45			60	-	o	-	+	+	+	+	+	+	+	+	+
Lithium Sulphate	LiSO <sub>4</sub>	25	1,23		20	+	+	+	+	+	+	+	+	+	+	+	+
Lithium Sulphate	LiSO <sub>4</sub>	25			40	+	+	+	+	+	+	+	+	+	+	+	+
Lithium Sulphate	LiSO <sub>4</sub>	25			60	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl <sub>2</sub>	10			20	o	+	-	+	+	+	+	+	+	+	+	+

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# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Magnesium Chloride	MgCl <sub>2</sub>	10			40	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl <sub>2</sub>	10			60	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl <sub>2</sub>	GL			20	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl <sub>2</sub>	GL			40	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MgCl <sub>2</sub>	GL			60	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Nitrate	Mg(NO <sub>3</sub> ) <sub>2</sub>	25	1,21		20	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Nitrate	Mg(NO <sub>3</sub> ) <sub>2</sub>	25			40	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Nitrate	Mg(NO <sub>3</sub> ) <sub>2</sub>	25			60	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	GL	1,28		20	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Magnesium Sulphate	MgSO <sub>4</sub>	GL			60	+	+	+	+	+	+	+	+	+	+	+	+
Corn oil		TR			20	+	+	-	+	+	+	+	+	+	+	+	+
Corn oil		TR			40	+	+	-	+	+	+	+	+	+	o	+	+
Corn oil		TR			60	+	+	-	o	+	+	+	+	+	-	+	+
Maleic Acid	C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	35			20	+	+	-	+	+	+	+	+	-	+	+	+
Maleic Acid	C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	35			40	+	+	-	+	+	+	+	+	-	+	+	+
Maleic Acid	C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	GL			20	+	+	-	+	+	+	+	+	-	o	+	+
Maleic Acid	C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	GL			40	+	+	-	+	+	+	+	+	-	-	+	+
Maleic Acid	C <sub>4</sub> H <sub>4</sub> O <sub>4</sub>	GL			60	+	+	-	+	+	+	+	+	-	-	+	+
Magnesium Chloride	MnCl <sub>2</sub>	20	1,19		20	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MnCl <sub>2</sub>	20			40	o	+	-	+	+	+	+	+	+	+	+	+
Magnesium Chloride	MnCl <sub>2</sub>	20			60	-	o	-	+	+	+	+	+	o	+	+	+
Chloride of manganese						see magnesium chloride											
Sea Water					20	o	+	-	+	+	+	+	+	+	+	+	+
Sea Water					40	o	+	-	+	+	+	+	+	o	+	+	+
Sea Water					60	o	+	-	+	+	+	+	+	o	+	+	+
Methanol	CH <sub>3</sub> OH	TR		B	20	+	+	+	+	+	+	+	o	o	+	+	+
Methanol	CH <sub>3</sub> OH	TR			40	+	+	+	+	+	+	+	o	o	+	+	+
Methanol	CH <sub>3</sub> OH	TR			60	+	+	o	+	+	+	+	o	-	o	+	+
Acetic Methyl Ester	CH <sub>3</sub> CO <sub>2</sub> CH <sub>3</sub>	100	0,93	Al	20	+	+	-	+	+	+	+	-	-	-	+	+
Acetic Methyl Ester	CH <sub>3</sub> CO <sub>2</sub> CH <sub>3</sub>	100			40	+	+	-	+	o	+	+	-	-	-	+	+
Acetic Methyl Ester	CH <sub>3</sub> CO <sub>2</sub> CH <sub>3</sub>	100			60	+	+	-	+	-	+	+	-	-	-	+	+
Methyl Alcohol						see methanol											
Methyl Benzene						see toluene											
Methyl Cellosolve						see methyl glycol											
Methyl Cyanide						see acetonitrile											
Methylene Chloride	CH <sub>2</sub> Cl <sub>2</sub>		1,33		20	+	+	-	o	o	<sup>1)</sup>	+	o	-	o	+	+
Methylene Chloride	CH <sub>2</sub> Cl <sub>2</sub>				40	+	+	-	o	o	<sup>1)</sup>	+	o	-	-	+	+
Methyl ester						see acetic methyl ester											
Methyl Ethyl Ketone (MEK)						see butanone											
Methyl Glycol	(CH <sub>2</sub> ) <sub>2</sub> OHCH <sub>2</sub>		0,98		20	+	+	+	+	+	+	+	+	+	+	+	+
Methyl Glycol	(CH <sub>2</sub> ) <sub>2</sub> OHCH <sub>2</sub>				40	+	+	+	+	+	+	+	+	+	+	+	+
Methyl Glycol	(CH <sub>2</sub> ) <sub>2</sub> OHCH <sub>2</sub>				60	+	+	+	+	+	+	+	+	+	+	+	+
Methyl Isobutyl Ketone (MIBK)	C <sub>4</sub> H <sub>8</sub> O			Al	20	+	+	-	-	+	+	+	o	o	o	+	+
Methyl Pentanon						see methyl isobutyl ketone											
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	50			20	o	o	-	o	+	+	+	-	o	-	+	+
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	50			40	-	o	-	o	+	+	+	-	o	-	+	+
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	50			60	-	-	-	-	+	+	+	-	-	-	o	+
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	TR			20	o	o	-	-	+	+	+	-	o	-	+	+
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	TR			40	-	o	-	-	+	+	+	-	o	-	+	+
Methyl Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub> -CH <sub>3</sub>	TR			60	-	o	-	-	+	+	+	-	-	-	o	+
Milk					20	+	+	+	+	+	+	+	+	+	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 1) not resistant with flow meter FMC, 2) Drum pump F 424 with shaft in titanium resistant





# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	10			20	+	+	-	+	+	+	+	+	o	+	+	+
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	10			40	+	+	-	+	+	+	+	+	-	+	+	+
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	10			60	+	+	-	+	+	+	+	+	-	+	+	+
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	90			20	+	+	-	+	+	+	+	+	-	+	+	+
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	90			40	o	+	-	+	o	+	+	+	-	+	+	+
Lactic acid	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub>	90			60	o	+	-	+	o	+	+	+	-	o	+	+
Mineral oils					20	+	+	+	+	+	+	+	+	+	-	+	+
Mineral oils					40	+	+	+	+	+	+	+	+	+	-	+	+
Mineral oils					60	+	+	+	o	+	+	+	+	+	-	+	+
Mineral Water					20	+	+	+	+	+	+	+	+	+	+	+	+
Mineral Water					40	+	+	+	+	+	+	+	+	+	+	+	+
Mineral Water					60	+	+	+	+	+	+	+	+	+	+	+	+
Mirbane						see nitrobenzene											
Monochloroacetic Acid						see chloroacetic acid											
Finger Nail Polish Remover						see acetone											
Naptha						see mineral oil											
Naphthenic Acid						see fatty acids											
Sodium Acetate	CH <sub>3</sub> COONa	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Acetate	CH <sub>3</sub> COONa	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Acetate	CH <sub>3</sub> COONa	10			60	+	+	+	+	+	+	+	+	o	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	10			60	+	+	+	+	+	+	+	+	o	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	36			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	36			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	36			60	+	+	+	+	+	+	+	+	o	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	GL			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Benzoate	C <sub>6</sub> H <sub>5</sub> NaO <sub>2</sub>	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bicarbonate	NaHCO <sub>3</sub>	10	1,07		20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bicarbonate	NaHCO <sub>3</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bicarbonate	NaHCO <sub>3</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bichromate	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bichromate	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Bichromate	Na <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	10			60	+	+	+	+	+	+	+	+	o	+	+	+
Sodium Chlorate	NaClO <sub>3</sub>	25	1,23		20	+	+	-	+	+	+	+	+	+	+	+	+
Sodium Chlorate	NaClO <sub>3</sub>	25			40	+	+	-	+	+	+	+	+	o	+	+	+
Sodium Chlorate	NaClO <sub>3</sub>	25			60	o	+	-	+	+	+	+	+	-	+	+	+
Sodium chloride						see sodium chloride											
Sodium Chlorite	NaClO <sub>2</sub>	5			20	o	+	-	+	+	+	+	+	+	+	+	+
Sodium Chlorite	NaClO <sub>2</sub>	5			40	-	o	-	+	+	+	+	+	+	+	+	+
Sodium Chlorite	NaClO <sub>2</sub>	5			60	-	o	-	+	+	+	+	+	o	+	+	+
Sodium Dichromate						see sodium bichromate											
Sodium Fluoride	NaF	4	1,04		20	+	+	-	+	+	+	+	+	+	+	+	+
Sodium Fluoride	NaF	4			40	+	+	-	+	+	+	+	+	o	+	+	+
Sodium Fluoride	NaF	4			60	o	+	-	+	+	+	+	+	o	+	+	+
Sodium hydroxide	NaOH	10	1,16		20	+	+	-	+	o	+	+	+	+	+	+	+
Sodium hydroxide	NaOH	10			40	+	+	-	+	o	+	+	+	+	+	+	+
Sodium hydroxide	NaOH	10			60	+	+	-	+	o	+	+	o	o	+	+	+
Sodium hydroxide	NaOH	30	1,33		20	+	+	-	+	o	+	+	o	+	+	+	+
Sodium hydroxide	NaOH	30			40	+	+	-	+	o	+	+	o	o	+	+	+
Sodium hydroxide	NaOH	30			60	+	+	-	+	o	+	+	o	o	+	+	+
Sodium hydroxide	NaOH	50	1,53		20	+	+	-	+	o	+	+	o	o	+	+	+
Sodium hydroxide	NaOH	50			40	+	+	-	+	o	+	+	o	-	+	+	+
Sodium hydroxide	NaOH	50			60	o	+	-	+	o	+	+	-	-	+	+	+
Sodium Hypochlorite	NaOCl	10			20	o	+	-	+	+	+	+	+	-	+	+	+

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 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

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Sodium Hypochlorite	NaOCl	12,5			20	o	+	-	+	+	+	+	+	-	+	+	+
Sodium Hypochlorite	NaOCl	12,5			40	o	+	-	o	+	+	+	o	-	o	+	+
Sodium Hypochlorite	NaOCl	20			20	o	+	-	+	+	+	+	+	-	+	+	+
Sodium Hypochlorite	NaOCl	20			40	o	+	-	o	+	+	+	o	-	o	+	+
Sodium Hypochlorite	NaOCl	20			60	o	+	-	-	+	+	+	o	-	o	+	+
Sodium Hyposulphide	see sodium thiosulphate																
Sodium Nitrate	NaNO <sub>3</sub>	45	1,37		20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Nitrate	NaNO <sub>3</sub>	45			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Nitrate	NaNO <sub>3</sub>	45			60	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Nitrite	NaNO <sub>2</sub>	50			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Nitrite	NaNO <sub>2</sub>	50			40	+	+	+	+	+	+	+	+	o	+	+	+
Sodium Nitrite	NaNO <sub>2</sub>	50			60	+	+	+	+	+	+	+	+	-	+	+	+
Sodium Perchlorate	NaClO <sub>4</sub>	25	1,18		20	o	+	+	+)1	+	+	-	+	+	+	+	+
Sodium Perchlorate	NaClO <sub>4</sub>	25			40	o	+	+	+)1	+	+	-	+	+	+	+	+
Sodium Perchlorate	NaClO <sub>4</sub>	25			60	o	+	o	+)1	+	+	-	+	o	+	+	+
Sodium Phosphate	Na <sub>3</sub> PO <sub>4</sub>	10			20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Phosphate	Na <sub>3</sub> PO <sub>4</sub>	10			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Phosphate	Na <sub>3</sub> PO <sub>4</sub>	10			60	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Silicate	see sodium silicate																
Sodium Sulphate	Na <sub>2</sub> SO <sub>4</sub>	50	1,46		20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphate	Na <sub>2</sub> SO <sub>4</sub>	50			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphate	Na <sub>2</sub> SO <sub>4</sub>	50			60	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphite	Na <sub>2</sub> SO <sub>3</sub>	GL	1,18		20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Sulphite	Na <sub>2</sub> SO <sub>3</sub>	GL			40	+	+	o	+	+	+	+	+	o	+	+	+
Sodium Sulphite	Na <sub>2</sub> SO <sub>3</sub>	GL			60	+	+	-	+	+	+	+	+	-	+	+	+
Sodium borate	see borax																
Sodium Thiosulphate	Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>	40			20	+	+	+	+	+	+	+	+	+	o	+	+
Sodium Thiosulphate	Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>	40			40	+	+	+	+	+	+	+	+	o	-	+	+
Sodium Thiosulphate	Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub>	40			60	+	+	+	o	+	+	+	+	-	-	+	+
Sodium hypochlorite solution	see sodium hypochlorite																
Caustic soda	see sodium hydroxide																
Clove oil	see essential oils																
Nickel Chloride	NiCl <sub>2</sub>	20	1,22		20	o	+	-	+	+	+	+	+	+	+	+	+
Nickel Chloride	NiCl <sub>2</sub>	20			40	o	+	-	+	+	+	+	+	+	+	+	+
Nickel Chloride	NiCl <sub>2</sub>	20			60	o	+	-	+	+	+	+	+	o	+	+	+
Nickel Nitrate	Ni(NO <sub>3</sub> ) <sub>2</sub>	35	1,38		20	+	+	-	+	+	+	+	+	+	+	+	+
Nickel Nitrate	Ni(NO <sub>3</sub> ) <sub>2</sub>	35			40	+	+	-	+	+	+	+	+	+	+	+	+
Nickel Nitrate	Ni(NO <sub>3</sub> ) <sub>2</sub>	35			60	+	+	-	+	+	+	+	+	o	+	+	+
Nickel Sulphate	NiSO <sub>4</sub>	10	1,21		20	+	+	-	+	+	+	+	+	+	+	+	+
Nickel Sulphate	NiSO <sub>4</sub>	10			40	+	+	-	+	+	+	+	+	+	+	+	+
Nickel Sulphate	NiSO <sub>4</sub>	10			60	+	+	-	+	+	+	+	+	+	+	+	+
Nicotine	C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>				20	+	+	-	-	-	+	+	+	o	+	+	+
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	TR	1,21	AlII	20	+	+	+	+	+	+	+	o	o	o	+	+
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	TR			40	+	+	+	o	+	+	+	o	o	-	+	+
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	TR			60	+	+	+	o	+	+	+	o	-	-	+	+
Nitro acid	see nitric acid																
Nitrotoluene	C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	TR			20	+	+	+	+	+	+	+	o	o	o	+	+
Nitrotoluene	C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	TR			40	+	+	+	+	+	+	+	o	o	-	+	+
Nitrotoluene	C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	TR			60	+	+	+	o	+	+	+	o	o	-	+	+
Octal	see dioctyl phthalate																
Isooctane	C <sub>8</sub> H <sub>18</sub>	TR		Al	20	+	+	+	+	+	+	+	+	+	+	+	+
Octanoic acid	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> COOH		0,92		20	+)1	+	-	+)1	+	+	+	o	+	-	+	+
Octanoic acid	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> COOH				40	+)1	+	-	o	+	+	+	o	+	-	o	+
Octanoic acid	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> COOH				60	+)1	+	-	-	+	+	+	o	o	-	-	+
Oil	see mineral oil																

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 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Oleic acid	see oleic acid																
Oleum	H <sub>2</sub> SO <sub>4</sub> +SO <sub>3</sub>				20	+	+	-	-	-	+	-	+	-	-	+	+
Oleic acid	C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	TR	0,90		20	+	+	-	+	+	+	+	+	o	-	+	+
Oleic acid	C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	TR			40	+	+	-	+	+	+	+	o	o	-	+	+
Oleic acid	C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	TR			60	+	+	-	o	+	+	+	o	-	-	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	10			20	+	+	-	+	+	+	+	+	+	+	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	10			40	+	+	-	o	+	+	+	+	+	+	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	10			60	+	+	-	o	+	+	+	+	+	+	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	GL	1,65		20	+	+	-	+	+	+	o	+	o	+	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	GL			40	+	+	-	o	+	+	o	+	o	o	+	+
Oxalic Acid	(CO <sub>2</sub> H) <sub>2</sub>	GL			60	+	+	-	o	o	+	o	+	o	o	+	+
Oxaloacetic acid 2.2	see diglycolic acid																
Palatinol C	see dibutyl phtalate																
Paraffin Oil	C <sub>n</sub> H <sub>2n</sub>	TR	0,93		20	+	+	+	+	+	+	+	+	+	-	+	+
Paraffin Oil	C <sub>n</sub> H <sub>2n</sub>	TR			40	+	+	+	+	+	+	+	+	o	-	+	+
Paraffin Oil	C <sub>n</sub> H <sub>2n</sub>	TR			60	+	+	+	+	+	+	+	+	o	-	+	+
Pectin		10			20	+	+	+	+	+	+	+	+	+	+	+	+
Pentanol-1	see amyl alcohol																
Pentyl Acetate	see amyl acetate																
Pentyl Chloride	see amyl chloride																
Perchloroethylene	C <sub>2</sub> Cl <sub>4</sub>	TR			20	+	+	-	-	+	+	+	+	-	-	+	+
Perchloroethylene	C <sub>2</sub> Cl <sub>4</sub>	TR			40	+	+	-	-	+	+	+	+	-	-	+	+
Perchloroethylene	C <sub>2</sub> Cl <sub>4</sub>	TR			60	o	+	-	-	+	+	+	+	-	-	+	+
Perchloric Acid	HClO <sub>4</sub>	20			20	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	20			40	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	20			60	+	+	-	+	+	+	+	o	-	o	+	+
Perchloric Acid	HClO <sub>4</sub>	50	1,40		20	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	50			40	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	50			60	+	+	-	o	+	+	+	o	-	o	+	+
Perchloric Acid	HClO <sub>4</sub>	70	1,55		20	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	70			40	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	70			60	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	GL			20	+	+	-	+	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	GL			40	+	+	-	o	+	+	+	+	-	+	+	+
Perchloric Acid	HClO <sub>4</sub>	GL			60	o	+	-	-	+	+	+	+	-	+	+	+
Peracetic acid		TR			20	+	-	-	-	+	+	-	-	-	-	+	-
Peracetic acid		TR			40	+	-	-	-	+	+	-	-	-	-	+	-
Peracetic acid		TR			60	+	-	-	-	+	+	-	-	-	-	+	-
Petroleum ether		TR	0,69	AI	20	+	+	+	-	+	+	+	+	+	o	+	+
Petroleum ether		TR			40	+	+	+	-	+	+	+	+	o	-	+	+
Petroleum ether		TR			60	+	+	+	-	+	+	+	o	-	-	+	+
Petroleum		TR	0,81	All	20	+	+	+	+	+	+	o	+	+	o	+	+
Petroleum		TR			40	+	+	+	+	+	+	o	+	+	-	+	+
Petroleum		TR			60	+	+	+	+	+	+	o	+	+	-	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	100			20	+	+	+	+	+	+	+	+	+	+	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	100			40	+	+	+	+	+	+	+	+	+	o	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	100			60	+	+	+	+	+	+	+	+	+	o	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	50			20	+	+	+	+	+	+	+	+	+	+	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	50			40	+	+	+	+	+	+	+	+	+	+	o	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	50			60	+	+	+	+	+	+	+	+	+	+	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	90			20	+	+	+	+	+	+	+	+	+	-	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	90			40	+	+	+	+	+	+	+	o	+	-	+	+
Phenol	C <sub>6</sub> H <sub>5</sub> O	90			60	+	+	+	+	+	+	+	o	o	-	+	+
Phenyl Chloride	see chlorobenzene																
Phosphor Chloride	see phosphorous trichloride																

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	30	1,18		20	+	+	-	+	+	+	+	+	o	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	30			40	+	+	-	+	+	+	+	+	o	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	30			60	+	+	-	+	+	+	+	+	-	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	50			20	+	+	-	+	+	+	+	+	o	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	50			40	+	+	-	+	+	+	+	+	o	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	50			60	o	+	-	+	+	+	+	+	-	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	85	1,69		20	+	+	-	+	+	+	+	+	-	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	85			40	+	+	-	+	+	+	+	+	-	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	85			60	o	+	-	+	+	+	+	o	-	+	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	95	1,70		20	-	+	-	+	+	+	o	+	-	o	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	95			40	-	+	-	o	+	+	o	+	-	o	+	+
Phosphoric Acid	H <sub>3</sub> PO <sub>4</sub>	95			60	-	o	-	-	+	+	o	o	-	o	+	+
Phosphorous Trichloride	POCl <sub>3</sub>	TR	1,57		20	+	+	-	+	+	+	+	+	-	+	+	+
Phosphorous Trichloride	POCl <sub>3</sub>	TR			40	o	o	-	o	+	+	+	+	-	+	+	+
Phosphorous Trichloride	POCl <sub>3</sub>	TR			60	-	-	-	o	+	+	+	+	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	50			20	+	+	-	+	+	+	+	+	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	50			40	+	+	-	+	+	+	+	+	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	50			60	+	+	-	+	+	+	+	+	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	GL	1,59		20	+	+	-	+	+	+	+	o	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	GL			40	+	+	-	+	+	+	+	o	-	+	+	+
Phthalic Acid	C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub> +H <sub>2</sub> O	GL			60	+	+	-	+	+	+	+	-	-	o	+	+
Polyol			1,78		20	+	+	+	-	+	+	+	+	+	+	+	+
Potash	see potassium carbonate																
Propanediol	see propylene glycol																
Propyl Alcohol	C <sub>3</sub> H <sub>7</sub> O	TR		B	20	+	+	+	+	+	+	+	+	+	o	+	+
Propyl Alcohol	C <sub>3</sub> H <sub>7</sub> O	TR			40	+	+	+	+	+	+	+	+	+	+	+	+
Propyl Alcohol	C <sub>3</sub> H <sub>7</sub> O	TR			60	+	+	+	+	+	+	+	+	+	+	+	+
Propanone	see acetone																
Propanone	see propylene oxide																
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	50			20	+	+	-	+	+	+	+	+	-	o	+	+
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	50			40	+	+	-	+	+	+	+	+	-	o	+	+
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	50			60	+	+	-	+	+	+	+	o	-	o	+	+
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	TR	0,99		20	+	+	-	+	+	+	+	+	-	+	+	+
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	TR			40	+	+	-	o	+	+	+	+	-	+	+	+
Propionic Acid	C <sub>3</sub> H <sub>5</sub> O <sub>2</sub>	TR			60	+	+	-	o	+	+	+	+	-	o	+	+
Propyl Acetate	see butyl acetate																
Propylene Aldehyde	C <sub>3</sub> H <sub>4</sub> O	TR		Al	20	+	+	+	-	+	+	+	+	+	+	+	+
Propylene Glycol	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	TR	1,04		20	+	+	+	+	+	+	+	+	+	+	+	+
Propylene Glycol	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	TR			40	+	+	+	+	+	+	+	+	o	+	+	+
Propylene Glycol	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	TR			60	+	+	+	+	+	+	+	o	-	+	+	+
Propylene Oxide	C <sub>3</sub> H <sub>4</sub> O	TR	0,83	Al	20	+	+	+	+	+	+	+	-	-	-	+	+
Propylene Oxide	C <sub>3</sub> H <sub>4</sub> O	TR			40	+	+	+	+	+	+	+	-	-	-	+	+
Pyranone	see diatecone alcohol																
Pyridine	C <sub>5</sub> H <sub>5</sub> N	TR	0,99	B	20	+	+	+	o	+	+	+	o	-	+	+	+
Pyridine	C <sub>5</sub> H <sub>5</sub> N	TR			40	+	+	+	o	+	+	+	-	-	o	+	+
Pyridine	C <sub>5</sub> H <sub>5</sub> N	TR			60	+	+	+	o	o	+	+	-	-	o	+	+
Pyrogallol	C <sub>6</sub> H <sub>3</sub> (OH) <sub>3</sub>	10			20	+	+	+	+	+	+	+	+	o	+	+	+
Pyrogallol	C <sub>6</sub> H <sub>3</sub> (OH) <sub>3</sub>	10			40	+	+	+	+	+	+	+	+	-	+	+	+
Pyrogallol	C <sub>6</sub> H <sub>3</sub> (OH) <sub>3</sub>	10			60	+	+	+	+	+	+	+	+	-	+	+	+
Pyrogallol acid	see pyrogallol																
Mercury Cyanide	Hg(CN) <sub>2</sub>	TR			20	+	+	-	+	+	+	+	+	+	+	+	+
Mercury Cyanide	Hg(CN) <sub>2</sub>	TR			40	+	+	-	+	+	+	+	+	+	+	+	+
Mercury Cyanide	Hg(CN) <sub>2</sub>	TR			60	+	+	-	+	+	+	+	o	+	+	+	+
Mercury Nitrate	Hg(NO <sub>3</sub> ) <sub>2</sub>	GL			20	+	+	-	+	+	+	+	+	o	+	+	+
Mercury Nitrate	Hg(NO <sub>3</sub> ) <sub>2</sub>	GL			40	+	+	-	+	+	+	+	+	o	+	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Mercury Nitrate	Hg(NO <sub>3</sub> ) <sub>2</sub>	GL			60	+	+	-	+	+	+	+	+	-	+	+	+
Ricinus oil		H	0,96		20	+	+	+	+	+	+	+	+	+	+	+	+
Ricinus oil		H			40	+	+	+	+	+	+	+	+	+	+	+	+
Ricinus oil		H			60	+	+	+	+	+	+	+	+	+	+	+	+
Salmiak	see ammonium chloride																
Spirits of ammonia	see ammonia water																
Nitric acid	HNO <sub>3</sub>	10	1,05		20	+ <sup>1)</sup>	+	-	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Nitric acid	HNO <sub>3</sub>	10			40	+ <sup>1)</sup>	+	-	o	+	+	o	+	-	+	+	+
Nitric acid	HNO <sub>3</sub>	10			60	+ <sup>1)</sup>	+	-	o	+	+	o	+	-	o	+	+
Nitric acid	HNO <sub>3</sub>	30	1,18		20	+ <sup>1)</sup>	+	-	o	+	+	-	+	-	+	+	+
Nitric acid	HNO <sub>3</sub>	30			40	+ <sup>1)</sup>	+	-	o	+	+	-	+	-	+	+	+
Nitric acid	HNO <sub>3</sub>	30			60	o	+	-	-	+	+	-	+	-	+	+	+
Nitric acid	HNO <sub>3</sub>	50	1,31		20	+ <sup>1)</sup>	+	-	o	+	+	-	+	-	-	+	+
Nitric acid	HNO <sub>3</sub>	50			40	o	+	-	-	+	+	-	o	-	-	+	+
Nitric acid	HNO <sub>3</sub>	50			60	o	o	-	-	+	+	-	o	-	-	+	+
Nitric acid	HNO <sub>3</sub>	65	1,41		20	+ <sup>1)</sup>	+	-	-	+	+	-	o	-	-	+	+
Nitric acid	HNO <sub>3</sub>	65			40	o	+	-	-	+	+	-	o	-	-	+	+
Nitric acid	HNO <sub>3</sub>	65			60	o	o	-	-	+	+	-	o	-	-	+	+
Nitrous acid	HNO <sub>2</sub>				20	o	+	-	o	+	+	+	+	-	o	+	+
Nitrous acid	HNO <sub>2</sub>				40	o	+	-	o	+	+	+	+	-	o	+	+
Nitrous acid	HNO <sub>2</sub>				60	o	+	-	-	+	+	+	+	-	-	+	+
Hydrochloric Acid	HCl	10	1,05		20	-	+	-	+	+	+	+	+	+	+	+	+
Hydrochloric Acid	HCl	10			40	-	o	-	+	+	+	+	+	o	+	+	+
Hydrochloric Acid	HCl	10			60	-	o	-	+	+	+	+	+	-	+	+	+
Hydrochloric Acid	HCl	30	1,15		20	-	+	-	+	+	+	+	+	-	+	+	+
Hydrochloric Acid	HCl	30			40	-	o	-	+	+	+	+	+	-	o	+	+
Hydrochloric Acid	HCl	30			60	-	o	-	+	+	+	+	+	-	o	+	+
Hydrochloric Acid	HCl	konz.	1,20		20	-	+	-	+	+	+	+	+	-	+	+	+
Hydrochloric Acid	HCl	konz.			40	-	o	-	+	+	+	+	+	-	o	+	+
Hydrochloric Acid	HCl	konz.			60	-	o	-	o	+	+	o	o	-	o	+	+
Sulphur Chloride	S.Cl <sub>2</sub>	10			20	o	+	o	o	+	+	-	+	-	-	+	+
Sulphur ether	see ether																
Carbon Bisulphide	CS <sub>2</sub>	TR	1,27	Al	20	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	o	+	-	o	+	+
Carbon Bisulphide	CS <sub>2</sub>	TR			40	+ <sup>1)</sup>	+	+	o	+	+	o	+	-	-	+	+
Carbon Bisulphide	CS <sub>2</sub>	TR			60	+	+	+	o	+	+	-	+	-	-	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	40	1,30		20	o	+	-	+	+	+	+	+	o	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	40			40	-	+	-	+	+	+	+	+	o	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	40			60	-	o	-	o	+	+	+	+	-	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	80	1,73		20	o	+	-	+	+	+	+	+	-	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	80			40	-	o	-	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	80			60	-	o	-	o	+	+	o	+	-	o	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	90	1,82		20	+ <sup>1)</sup>	+	-	o	+	+	o	+	-	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	90			40	o	+	-	o	+	+	o	+	-	+	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	90			60	o	+	-	o	+	+	o	+	-	o	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	98	1,84		20	+ <sup>1)</sup>	+	-	o	+	+	o	+	-	o	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	98			40	o	+	-	o	+	+	o	o	-	o	+	+
Sulphuric Acid	H <sub>2</sub> SO <sub>4</sub>	98			60	o	+	-	o	+	+	-	-	-	o	+	+
Sulphurous Acid	H <sub>2</sub> SO <sub>3</sub>	50			20	o	+	-	+	+	+	+	+	o	+	+	+
Sulphurous Acid	H <sub>2</sub> SO <sub>3</sub>	50			40	o	+	-	+	+	+	+	+	-	+	+	+
Sulphurous Acid	H <sub>2</sub> SO <sub>3</sub>	50			60	-	o	-	+	+	+	+	o	-	+	+	+
Silver Nitrate	AgNO <sub>3</sub>	8	1,07		20	+	+	-	+	+	+	+	+	+	+	+	+
Silver Nitrate	AgNO <sub>3</sub>	8			40	+	+	-	+	+	+	+	+	+	+	+	+
Silver Nitrate	AgNO <sub>3</sub>	8			60	+	+	-	+	+	+	+	+	+	+	+	+
Silicone oil		TR	1,06		20	+	+	+	+	+	+	+	+	+	o	+	+
Silicone oil		TR			40	+	+	+	+	+	+	+	+	+	o	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Silicone oil		TR			60	+	+	+	+	+	+	+	+	+	0	+	+
Soda	see sodium bicarbonate																
Cooking oil		H			20	+	+	+	+	+	+	+	+	+	+	+	+
Cooking oil		H			40	+	+	+	+	+	+	+	+	+	0	+	+
Cooking oil		H			60	+	+	+	0	+	+	+	+	+	-	+	+
Spindle oil		TR			20	+	+	+	+	+	+	+	+	+	0	+	+
Spindle oil		TR			40	+	+	+	0	+	+	+	+	+	-	+	+
Spindle oil		TR			60	+	+	+	0	+	+	+	0	0	-	+	+
Spiritus	see ethanol																
Starch gum	see dextrine																
Styrene	C <sub>6</sub> H <sub>5</sub> CHCH <sub>3</sub>	TR	0,91	All	20	+	+	+	0	0	+	+	0	-	-	+	+
Sulphite liquor	see calcium bisulphite																
Sylvite	see potassium chloride																
Oil of turpentine		H	0,86		20	+	+	+	-	+	+	+	+	+	-	+	+
Oil of turpentine		H			40	+	+	+	-	0	+	+	+	+	-	+	+
Oil of turpentine		H			60	+	+	+	-	0	+	+	+	+	-	+	+
White spirit				All		+) +	+	+	+) +	+	+	0	+	0	-	+	+
Tetrachlorethane	Cl <sub>2</sub> CH-CHCl <sub>2</sub>	TR	1,60		20	+	+	-	0	+	+	+	0	-	-	+	+
Tetrachlorethane	Cl <sub>2</sub> CH-CHCl <sub>2</sub>	TR			40	+	+	-	0	+	+	+	0	-	-	+	+
Tetrachlorethane	Cl <sub>2</sub> CH-CHCl <sub>2</sub>	TR			60	+	+	-	-	0	+	+	0	-	-	+	+
Tetrachlorethylene	see perchloroethylene																
Carbon tetrachloride	CCl <sub>4</sub>	TR	1,59		20	+) +	+	+	0	+	+) +	0	+	-	0	+	+
Carbon tetrachloride	CCl <sub>4</sub>	TR			40	+) +	+	+	0	+	+) +	0	+	-	-	+	+
Carbon tetrachloride	CCl <sub>4</sub>	TR			60	+) +	+	0	-	+	+) +	0	+	-	-	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>8</sub> O	TR	0,89	B	20	+) +	+	-	0	0	+	+	0	-	0	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>8</sub> O	TR			40	+) +	+	-	-	-	+	+	0	-	-	+	+
Butanone (MEK)	C <sub>4</sub> H <sub>8</sub> O	TR			60	+) +	+	-	-	-	+	+	0	-	-	+	+
Tetrahydronaphtaline	see tetralin																
Tetralin	C <sub>10</sub> H <sub>12</sub>	100	0,97	All	20	+	+	+	-	+	+	+	+	-	0	+	+
Tetralin	C <sub>10</sub> H <sub>12</sub>	100			40	+	+	+	-	+	+	+	+	-	-	+	+
Tetralin	C <sub>10</sub> H <sub>12</sub>	100			60	+	+	+	-	+	+	+	+	-	-	+	+
Thiophene	see thiophene																
Thionyl Chloride	SOCl <sub>2</sub>	TR	1,66		20	+	+	-	-	+	+	+	-	-	+	+	+
Thionyl Chloride	SOCl <sub>2</sub>	TR			40	+	+	-	-	+	+	+	-	-	+	+	+
Thionyl Chloride	SOCl <sub>2</sub>	TR			60	+	+	-	-	+	+	+	-	-	+	+	+
Thiophene	C <sub>4</sub> H <sub>4</sub> S			AI	20	+	+	-	0	+	+	+	+	-	+	+	+
Ink		H	1,00		20	+	+	+	+	+	+	+	+	+	+	+	+
Toluene	C <sub>7</sub> H <sub>8</sub>		0,87	AI	20	+	+	+	0	+	+	+	0	-	0	+	+
Toluene	C <sub>7</sub> H <sub>8</sub>				40	+	+	+	0	+	+	+	0	-	-	+	+
Toluene	C <sub>7</sub> H <sub>8</sub>				60	+	+	+	0	+	+	+	0	-	-	+	+
Transformer oil		TR			20	+	+	+	0	+	+	+	+	+	0	+	+
Transformer oil		TR			40	+	+	+	0	+	+	+	+	+	-	+	+
Transformer oil		TR			60	+	+	+	0	+	+	+	+	+	-	+	+
Glucose Solution	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	GL	1,13		20	+	+	+	+	+	+	+	+	+	+	+	+
Glucose Solution	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	GL			40	+	+	+	+	+	+	+	+	+	+	+	+
Glucose Solution	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	GL			60	+	+	+	+	+	+	+	+	+	+	+	+
Tributyl Phosphate	C <sub>12</sub> H <sub>27</sub> O <sub>4</sub> P	TR	0,98		20	+	+	0	+	+	+	+	+	-	+	+	+
Tributyl Phosphate	C <sub>12</sub> H <sub>27</sub> O <sub>4</sub> P	TR			40	+	+	0	+	+	+	+	0	-	+	+	+
Tributyl Phosphate	C <sub>12</sub> H <sub>27</sub> O <sub>4</sub> P	TR			60	+	+	0	+	+	+	+	-	-	+	+	+
Trichlorobenzene	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>				20	+) +	+	-	0	+	+	+	-	+	-	+	+
Trichlorobenzene	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>				40	+) +	+	-	0	+	+	+	-	+	-	+	+
Trichlorobenzene	C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>				60	+) +	+	-	0	+	+	+	-	+	-	0	+
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	50			20	0	+	-	+	+	+	+	-	-	+	+	+
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	50			40	-	+	-	+	+	+	+	-	-	0	+	+
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	50			60	-	+	-	+	0	+	+	-	-	-	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, 0 = limited resistance, - = not resistant  
 \*) not resistant with flow meter FMC, \*) Drum pump F 424 with shaft in titanium resistant



# Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	TR	1,62		20	o	+	-	+	+	+	+	-	o	+	+	+
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	TR			40	-	+	-	o	+	+	+	-	-	o	+	+
Trichloroacetic acid	CCl <sub>3</sub> CO <sub>2</sub> H	TR			60	-	+	-	o	o	+	+	-	-	-	+	+
Trichloroethane	C <sub>2</sub> HCl <sub>3</sub>	TR	1,34		20	+ <sup>1)</sup>	+	-	o	+	+	o	o	-	-	+	+
Trichloroethene	see trichloroethylene																
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	50			20	+	+	-	o	+	+ <sup>1)</sup>	+	o	-	o	+	+
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	50			40	+	+	-	o	+	+ <sup>1)</sup>	+	o	-	-	+	+
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	50			60	+	+	-	o	+	+ <sup>1)</sup>	+	o	-	-	+	+
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	TR	1,47		20	+	+	-	o	+	+ <sup>1)</sup>	+	+	-	o	+	+
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	TR			40	+	+	-	o	+	+ <sup>1)</sup>	+	o	-	-	+	+
Trichloroethylene	C <sub>2</sub> HCl <sub>2</sub>	TR			60	+	+	-	-	+	+ <sup>1)</sup>	+	o	-	-	+	+
Trichloromethane	see chloroform																
Trichlorophenol	see trichlorobenzene																
Triethylamine	C <sub>2</sub> H <sub>5</sub> <sub>3</sub> N	TR	0,73	B	20	+	+	+	+	o	+	+	+	-	+	+	+
Triethylamine	C <sub>2</sub> H <sub>5</sub> <sub>3</sub> N	TR			40	+	+	+	+	o	+	+	+	-	+	+	+
Trihydroxy benzoic acid	see gallic acid																
Triiodinemethane	CHJ <sub>3</sub>				20	+	+	-	+	+	+	+	+	+	o	+	+
Triiodinemethane	CHJ <sub>3</sub>				40	+	+	-	+	+	+	+	+	+	o	+	+
Triiodinemethane	CHJ <sub>3</sub>				60	+	+	-	+	+	+	+	o	-	-	+	+
Tricresyl Phosphate	PO <sub>2</sub> (C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> ) <sub>3</sub>	TR	1,13		20	+	+	+	+	+	+	+	-	o	o	+	+
Tricresyl Phosphate	PO <sub>2</sub> (C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> ) <sub>3</sub>	TR			40	+	+	+	o	+	+	+	-	-	-	+	+
Tricresyl Phosphate	PO <sub>2</sub> (C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> ) <sub>3</sub>	TR			60	+	+	+	o	+	+	+	-	-	-	+	+
Trisodium phosphate	see sodium phosphate																
Triol	see butane triol																
Perchloric acid	see perchloric acid																
Urine					20	+	+	-	+	+	+	+	+	+	+	+	+
Urine					40	+	+	-	+	+	+	+	+	+	+	+	+
Urine					60	+	+	-	+	+	+	+	+	+	+	+	+
Vinyl Acetate	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	TR	0,93	AI	20	+	+	-	+	+	+	+	o	+	o	+	+
Vinyl Acetate	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	TR			40	+	+	-	o	+	+	+	-	+	o	+	+
Vinyl Acetate	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	TR			60	+	+	-	o	+	+	+	-	+	o	+	+
Vinyl benzol	see styrene																
Vinyl carbinol	see allyl alcohol																
Vinyl cyanide	see acrylonitrile																
Vinylidene chloride	see dichloroethylene 1.1																
Water	H <sub>2</sub> O		1,00		20	+	+	+	+	+	+	+	+	+	+	+	+
Water	H <sub>2</sub> O				40	+	+	+	+	+	+	+	+	+	+	+	+
Water	H <sub>2</sub> O				60	+	+	+	+	+	+	+	+	+	+	+	+
Water	H <sub>2</sub> O		1,00		20	+	+	o	+	+	+	+	+	+	+	+	+
Water	H <sub>2</sub> O				40	+	+	o	+	+	+	+	+	+	+	+	+
Water	H <sub>2</sub> O				60	+	+	o	+	+	+	+	+	+	o	+	+
Sodium Silicate	Na <sub>2</sub> SiO <sub>3</sub>	20	1,24		20	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Silicate	Na <sub>2</sub> SiO <sub>3</sub>	20			40	+	+	+	+	+	+	+	+	+	+	+	+
Sodium Silicate	Na <sub>2</sub> SiO <sub>3</sub>	20			60	+	+	+	+	+	+	+	+	+	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	3	1,01		20	+	+	+	+	+	+	+	+	o	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	3			40	+	+	+	+	+	+	+	o	-	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	3			60	+	+	+	+	+	+	+	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	10	1,04		20	+	+	+	+	+	+	+	+	o	-	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	10			40	+	+	+	+	+	+	+	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	10			60	+	+	+	+	+	+	+	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	20	1,07		20	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	o	+	o	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	20			40	+ <sup>1)</sup>	+	+	+ <sup>1)</sup>	+	+	o	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	20			60	+ <sup>1)</sup>	+	+	o	+	+	o	o	-	-	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	30	1,11		20	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	o	+	-	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	30			40	+ <sup>1)</sup>	+	o	+ <sup>1)</sup>	+	+	o	o	-	o	+	+

TR = technically pure, GL = saturated solution; H = commercial composition  
 + = resistant, o = limited resistance, - = not resistant  
<sup>1)</sup> not resistant with flow meter FMC, <sup>2)</sup> Drum pump F 424 with shaft in titanium resistant



## Resistance Chart

Description	Chemical Formula	Concentration in %	Density [kg/dm <sup>3</sup> ]	Hazard class (VbF)	Temperature [in C°]	Stainless steel (1.4571)	Hastelloy C (2.4610)	Aluminium	PP	PVDF	ETFE	PPS	FKM	NBR	EPDM	PTFE/FEP	FFKM
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	30			60	+) +	o	o	+	+	+	o	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	90	1,42		20	+) +	-	-	+	+	+	-	+	-	+	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	90			40	+) +	-	-	o	+	+	-	o	-	o	+	+
Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>	90			60	+) +	-	-	o	+	+	-	o	-	o	+	+
Wine vinegar		H			20	+	+	o	+	+	+	+	-	o	+	+	+
Wine vinegar		H			40	+	+	o	+	+	+	+	-	o	+	+	+
Wine vinegar		H			60	+	+	-	+	+	+	+	-	o	o	+	+
Spirit of wine	see ethyl alcohol																
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	GL	1,76		20	+	+	-	+	+	+	+	+	+	+	+	+
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	GL			40	+	+	-	+	+	+	+	+	+	+	+	+
Diglycolic Acid	C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>	GL			60	+	+	-	+	+	+	+	+	o	+	+	+
Tartaric acid	see diglycolic acid																
White spirit	see white spirit																
Wool Fat	see lanolin																
Sodium nitrate	see sodium nitrate																
Xylene	C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub>	TR	0,86	All	20	+	+	+	-	+	+	+	+	-	-	+	+
Xylene	C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub>	TR			40	+	+	+	-	+	+	+	o	-	-	+	+
Xylene	C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub>	TR			60	+	+	+	-	o	+	+	o	-	-	+	+
Toothpaste		H			20	+	+	+	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	20	1,19		20	+	+	-	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	20			40	+	+	-	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	20			60	+	+	-	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	75	2,07		20	-	+	-	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	75			40	-	+	-	+	+	+	+	+	+	+	+	+
Zinc Chloride	ZnCl <sub>2</sub>	75			60	-	+	-	+	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	10	1,11		20	+	+	o	+	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	10			40	+	+	o	+	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	10			60	+	+	o	+	+	+	+	+	o	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	GL	1,38		20	+	+	o	+	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	GL			40	+	+	o	+	+	+	+	+	+	+	+	+
Zinc Sulphate	ZnSO <sub>4</sub>	GL			60	+	+	-	+	+	+	+	+	o	+	+	+
Zinc vitriol	see zinc sulphate																
Stannous chloride (II)	SnCl <sub>2</sub>	20	1,17		20	o	+	-	+	+	+	+	+	+	+	+	+
Stannous chloride (II)	SnCl <sub>2</sub>	20			40	o	+	-	+	+	+	+	+	+	+	+	+
Stannous chloride (II)	SnCl <sub>2</sub>	20			60	o	+	-	+	+	+	+	+	+	+	+	+
Citric Acid	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	50	1,22		20	+	+	-	+	+	+	+	+	+	+	+	+
Citric Acid	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	50			40	o	+	-	+	+	+	+	+	+	+	+	+
Citric Acid	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	50			60	o	+	-	+	+	+	+	+	+	+	+	+

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+ = resistant, o = limited resistance, - = not resistant

1) not resistant with flow meter FMC, 2) Drum pump F 424 with shaft in titanium resistant





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