RESISTANCE TABLE

1= excellent resistance
2= good resistance
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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene / TPR
accumulator acid (sulfuric acid 30%)	x	2	x	1	1	1	1	1	2	1	1
acetaldehyde	3	2	2	3	2	x	2-3	1	3	1	1
acetamide	x	x	2	2	1-2	x	1	1	1		1
acetic acid 10%	3	2	2	1	2	3	1	1	1	1	1
acetic acid 100% (conc.)	x	x	2-3	3	x	x	x	1	x	1	1
acetic acid 25%	x	3	2-3	1-2	2	x	1	1	1-2	1	1
acetic acid 3%	2	1	1	1	2	1	1	1	1	1	1
acetic acid 50%	x	x	2-3	2	2	x	3	1	2-3	1	1
acetic acid anhydride 50%	x	x	1	1	x	x	3	1	2	1	1
acetic acid ethyl ester (ethyl acetate)	x	x	2	x	x	x	2	1	3	1	1
acetone	3	x	2	2-3	x	3	1-2	1	3	1	1
acetyl salicylic acid (aspirin)					1	1	1				
acetylacetone	3	x	x		x	x	x	1		1	1
acetylene gas	1	1	2	2	1	1	3	1	2	1	1
acids s. spez. designation, applicable in general	x	3	2	2-3	1	2-3	1-2	1	x	1	2-3
acrylic acid ethyl ester (ethyl acrylate)	x	x	2	1	x	x	x	1	x	1	1
acrylonitrile	x	x	2	3	2	x	1	1	3	1	1
adipic acid (hexane diacid)	3	1-3	x	1	1	1	1	1	2	1	
adipic acid diethyl ester				1	x	x		1		1	1
air, atmospheric, oil-free, to +°C	85	80	175	120	200	70	90	200		200	125
air, oil-saturated, to +°C	85	80	175	120	200	70	90	200		200	125
alcohols s. specific designations, applicable in general)	2	2	1-2	1	1-2	1-2	1-2	1	2	1	2
aliphatics s. gasoline low aromatic,											
applicable in general	2	2	x	x	1	3	x	1	x	1	
allyl alcohol (propenol)	3	3	x	1-3	3	3	1	1			1
allyl chloride (3-chloropropene)	x	x	1		x	x	x	1		1	
alum (potassium aluminium sulphate)	2	1	1-2	1	1	1	1	1	2	3	1
aluminium acetate, aqu. (basic aluminium acetate)	x	3	x	1	x	1	1	1	1	1	1
aluminium chloride, aqu.	3	1-2	2	1-2	1	1	1-2	1	1	1	1
aluminium fluoride	3	3	2	1	1	1	1	1	1	1	1
aluminium hydroxide	3	2	1	1	1	1	1	1	1	1	1
aluminium nitrate, aqu.	3	2	2	1	1	2	1	1	1	1	1
aluminium phosphates, aqu.	2	1	1	1	1	1	1	1	1	1	1
aluminium sulphate aqu.	3	2	1	1	1	1	1	1	1	1	1
amines s. specific designations											
amino acetic acid (glycine)	x	x	2-3	2-3	1	1		1			1
ammonia nitrate, aqu.	3	2	1	3	3	2	1	1	2	1	1
ammonia, aqu. 25% (ammonia water)	x	x	1	3	1	1	1	1	2	x	1
ammonia, gaseaus 20°C	x	3	1	2	1	1	1	1	1	1	1
ammonia, liquid 100%	x	x	3	2	x	3	2	1	1	1	1
ammonium acetate, aqu.	x	x	3-x	1	x	1	2	1			1
ammonium carbonate, aqu.	x	x	2-3	1	1	1	1	1	1	1	1
ammonium chloride, aqu. 3%	3	1	1	2	1	1	1	1	1	1	1
ammonium diphosphate, aqu.	3	1	1-2	1	1	1	1	1	1	1	1
ammonium fluoride, aqu.	x	x		1	1-2	1-3	1	1			1
ammonium hydroxide, aqu. (ammonia, aqu.)	x	x	1	3	1	1	1	1	2	x	1
ammonium metaphosphate	2	1	1	1	1	1	1	1	1	1	1
ammonium nitrite	1	1	2	1	1	2		1	1	1	1
ammonium persulphate, aqu.	3	2	2-3	2	1	1	1	1	2	1	1
ammonium phosphate, aqu.	3	1	1	2	1	2	1	1	1	1	1

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ammonium sulphate	2	1	1	1	1	1	1	1	1	1	1
ammonium thiocyanate	3	2	1		1	1	1	1		1	1
ammonium-urea-solution (liquid nitrogen fertiliser)	x	x				2	2	1			
amyl acetate* (acetic acid pentyl ester, banana oil)	x	x	3	x	x	x	2	1	3	1	1
amyl alcohols (pentanols)	3	3	3	1	2	1	1-2	1	1	1	1
amyl borate	x	x	x	1	1			1	1	1	1
amyl chloride	x	x	3	x	2	x	x	1	x	1	2
aniline (aminobenzene)	x	x	2	3	1-2	2-3	2-3	1	x	1	1
aniline dyes	x	x	2-3	2-3	1	1	3	1	2	1	1
aniline hydrochloride	x	x	x	x	x	x	2-3	1	x		
animal fats (oils and greases, animal)	1	1	3	1-2	1	2	2-3	1	3	1	2
anise seed oil						x	3-x	1	x		
anol (cyclohexanol)	3	x	2-3	1-2	1	x	1	1	2	1	2
anone (cyclohexanone)	3	x	x	x	x	x	2-3	1	x	1	2-3
anthraquinone sulfonic acid, aqu.	x	x	x	1	1	1	1	1			1
antifreeeze s. precise chem. Designation											
antimony chloride 50%	3	2	x	1	1	1	1	1	1	1	1
antimony chloride, anhydrous	x	x	3	1	1-2	1	1	1			1
apple acid, aqu.* (apple juice)	x	3	1	1	1	1	1	1	1	1	1
aqua fortis (nitric acid 50%)	x	x	x	3	1-2	2-3	2-3	1	x	1	1-2
aqua regia	x	x	3	3	2	2-3	2	1	3	1	3
Arctones = ICI Freontypes, ask for our detailed advice											
argon gas	1	1	1	1	1	1	1	1	1	1	1
aromatics s. benzene, toluene, xylenen and											
homologues, applicable in general	x	x	x	3-x	1-2	x	3	1	2	1	3-x
arsenic acid	3-x	3-x	1	1	1	1	1	1	1	1	1
ascorbic acid (Vitamine C)	2-3	1			1	1	1				
asphalt (pitch)	2	2	2	2	1	2	1	1	2	1	2-3
ASTM fuel A	1	1	x	1	1	3-x		1	1		x
ASTM fuel B	x	x	x	x	1	3-x		1	x		x
ASTM fuel C	x	x	x	x	1	3-x		1	x		x
ATS-brake fluid	x	x	3	1	1	1	1	1			2-3
backing-powder (sodium bicarbonate, aqu.)	x	2	1	1	1	1	1	1	1	2	1
bacon fat*	1	1	2	3	1		1	1	x	1	1
barium chloride, aqu.	2	1	1	1	1	1	1	1	1	1	1
barium hydroxide	3-x	2	1	1	1	1	1	1	1	1	1
barium sulphate (barite)	1	1	1	1	1	1-2	1	1	1	1	1
barium sulphide	2	2	1	1	1	1	1-2	1	1	1	1
barm (yeast), aqu.	x	1	1	1	1	1	1	1			1
bases (lyes) s. exact designation, applicable											
in general	x	2	2	1	2	1	1-2	1	1-2	1	1-2
beer*	2	1	1	1	1	1	1	1	1	1	1
benzaldehyde	3	3	2-3	x	2-3	3	2	1	x	1	2
benzene s.also gasoline	3-x	3-x	x	3-x	2-3	3-x	3-x	1	x	1	x
benzoic acid, aqu.	x	x	3-x	x	1	1	1	1	x	1	1
benzyl alcohol	x	x	1	2-3	1	3	3	1	3	1	2
benzyl benzoate	x	x	1	1	1			1	x	1	2
benzyl chloride	x	x	2	x	1	x	2-3	1	x	1	x
bicarb, bicarbonate of soda (sodium bicarbonate)	x	2	1	1	1	1	1	1	1	2	1
bio-gas clean	2	3	3-x	2-3	1	2	1	1	2-3	1	

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bio-gas (marsh-gas) ask for detailed advisory and give exact chem. designation											
biphenyl (diphenyl)	x	x	x	3	1	x	2	1	x	1	3
biphenyls, polychlorinated (pyranols, transformer oils)	2	2	x	x	1	3	3	1	2-3	1	x
bismuth carbonate	1	1	1		1	1	1	1	1	1	1
bisulphite lye containing SO2					1	1	1	1	1	1	1
bitter-salt (magnesium sulphate)	1	1	1	1	1	1	1	1	1	1	1
bitumen 20°C (s. also hot bitumen)	2	2	3	3	1	x	1	1	x	1	2-3
black lye (cellulose extraction)	x	x	x	1	1			1			
Blanc-fixe (barium sulphate)	1	1	1	1	1	1-2	1	1	1	1	1
bleaching lye (Javelle-lye, potassium hypochlorite)	3	2	2	2-3	1	1	3	1	2-3	3	1-2
blood						1	1	1			
bone oil	1	1	2-3	x	1	2		1	x		x
borax (sodium borate)	1	1	1-2	1-2	1	1	1	1	1	2	1
boric acid, aqu.	3	1	1	1	1	1	1	1	x	1	1
brake fluid, ATS-	x	x	3	1	1	1	1	1			2-3
brake fluid, gycol-ether-based	x	x								1	1
brandy, all kinds*	2	1	1	1	1	1	1	1	1	1	1
brine (table or common salt solution)*	3	1	1	1	1	1	1	1	1	1	1
bromine	x	x	x	x	1	3	x	1	x	1	3
bromine water	x	x	x	2-3	1	x	x	1	x	1	3
bromobenzene	x	x	x	x	1	x	x	1	x	1	x
butadiene	2	1-2	x	2	2	3	2-3	1	2	1	2
butan diols (butylene glycols)	1	1		1	2	3	1	1			1-2
butane diacid	x	3	3	1	1	1	1	1			1
butane gas	1	1	3-x	2	1	2	3-x	1	2	1	2
butane, liquid	1	1	3	1	1	2	1	1	1	1	2
butanol (butyl alcohol)	3	3	2	1	2-3	1	1-2	1	1	1	1
butanone (methyl ethyl ketone MEK)	x	x	x	x	x	x	2	1	3	1	1
butine diol	1	1		2	3			1			
butter milk*	1	1	1	1	1	1	1	1	2-3	1	1
butter*	1	2	2	2	1	2	1	1	2	1	2
butyl acetate (acetic acid butyl ester)	x	x	3	3	x	x	3-x	1	x	1	2
butyl benzoate	1	1	x	x	1			1	x	1	2
butyl carbitol	x	x	2-3	2	1			1	3	1	2
butyl ether	x	3	3		x	1	1	1	2-3	1	2
butyl glycol	3	3	2		1	x	1	1	x	1	2
butyl oleate	x	x	1	x	1			1	x	1	2
butyl phenols	x	x		x	3	x	1-2	1			
butyl stearate	1	1	1	2-3	1	1	x	1	x	1	2
butylamine	2-3	2-3	2-3	x	x	x	3	1	3	1	1
butylene, liquid (butene)	2-3	2-3	2-3	3	1	1	x	1	x	1	1
butyraldehyde	x	x	3	3	x		1	1	3	1	1
butyric acid, aqu.*	x	x	3	2-3	2	2	x	1	x	1	1
calcinated soda (sodium carbonate anhydrous)	2	2	1	1	1	1	1	1	1	2	1
calcium acetate	2	2	2	2	x		1	1	2	1	1
calcium bisulfate, aqu.	3	1	3	1	1	1	1	1	1	1	1
calcium bisulfite, aqu.	3	2	1	1	1	2	1	1	1	1	1
calcium carbonate	1	1	1	1	1	1	1	1	1	1	1
calcium chloride, aqu.	3	1	1	1	1	1	1	1	1	1	1
calcium hydroxide, aqu. (slaked lime)	3	2	1	1	1	2	1	1	1	1	1

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calcium hypochlorite, aqu.	x	x	2-3	1-2	1	1	1	1	3	1	1-2
calcium nitrate	1	1	2	1	1	1	1	1	1	1	1
calcium oxide = calcinated lime	1	1	1	1	1	1	1	1	1	1	1
calcium phosphate, aqu.	2	2	1	1	1		1	1			1
calcium sulfate (gypsum), aqu.	3	1	1	1	1	1-2	1-2	1	2	1	1
calcium sulfide	2	1	2	1	1			1	1	1	1
camphor (camphor oil)	x	x		3-x	3-x		3	1			
cane-sugar	3	1	1	1	1	1	1	1	1	1	1
carbamide, urea, aqu.	x	x	x	1	1	2	1	1			1
carbitol (diethylene glycol monoethyl ether)	x	x	2	2	2	3	1	1	3	1	1
carbolic acid (phenol)	3-x	3-x	3	2-3	1	x	x	1	3	1	2-3
carbolineum, aqu.	x	x	x	1	1	3	1	1	1	1	
carbon bisulfide	3	2	x	x	1	2-3	x	1	x	1	2
carbon dioxide solid (dried ice -80°C) resistant,											
but elstomers and plastomers become stiff to brittle											
carbon dioxide, gaseous, wet and dry	1	1	1	1	1	1	1	1	1	1	1
carbon monoxide	1	1	1	2-3	1	1	1	1	2	1	1
carbon tetrachloride (tetrachloromethan)	x	3	x	x	1	x	x	1	x	1	x
carbonic acid s. carbon dioxide											
Caro`s acid (peroxymonosulphuric acid)											
castor oil*	1	1	1	1	1		2-3	1	2	1	2
caustic lime (calcium hydroxide)	x	x	2-3	1-2	1	1	1	1	3	1	1-2
caustic potash s. potassium hydroxide											
caustic soda s. sodium hydroxide											
cellulose acetate (acetyl cellulose)	2	1	1				1	1	1	1	1
cellulube (hydraulic oil, phosphate ester based)	x	x	2-3	x	1	x	x	1	x	1	1
ceolithe	x	x	1	x	1			1	1		1
chile salpetre (sodium nitrate)	2	1	3	1	1	1	1	1	2	1	1
china wood oil (wood oil)	3	2	3	3	1	3	2	1	x	1	2
chloral hydrat	x	x		2	3	x	1	1	2	2	
chloramine	2	2		1	1						1
chloric acid, aqu.				1	x	1	1	1	1	1	1
chlorinated hydrocarbons s. specific designations,											
applicable in general	x	x	x	x	2	x	x	1	x	1	x
chlorinated lime (calcium hypochlorite)	x	x	2-3	1-2	1	1	1	1	3	1	1-2
chlorinated water 3%	x	3	2-3	3	1	1	2	1	x	1	1-2
chlorine dioxid	x	x	3	1	1	2-3	x	1	1	1	
chlorine, dry	x	x	x	2-3	1	3-x	x	1	3-x	1	2-3
chlorine, wet	x	x	x	2-3	1	x	x	1	x	1	2-3
chloroacetic acid (monochloroacetic acid)	x	x	x	2	x	2	x	1	3	1	2
chlorobenzene (monochlor benzene)	x	x	x	x	1	x	3	1	x	1	x
chlorobiphenyl (clophen)	x	x	2	x	1	x	1	1	x	1	3
chlorobromomethan	x	3	x	x	1	x	2	1	x	1	3
chlorocalcium (calcium chloride)	3	1	1	1	1	1	1	1	1	1	1
chloroethanol (ethylen chlorhydrine)	x	x	x	2	x	x	3	1	x	x	2
chloroethyl (ethyl chloride)	x	x	x	x	1-2	3-x	x	1	3	1	2-3
chloroform (trichloromethane)	x	x	x	x	1	x	x	1	x	1	x
chloromethane (methyl chloride)	x	x	x	x	2	x	3	1	x	1	2
chloroprene (chlorinated butadiene)	x	x	x	2	1	x	3	1	x	1	3
chlorosulfonic acid	x	x	x	x	x	x	x	1	x	1	1-2

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chlorothene (trichloroethane)	x	x	x	x	1	3	x	1	x	1	2
chromic acid 10%	x	3	3	2-3	2	1	3	1	3	1	1
chromic acid 25%	x	x	x	2-3	1	2	x	1	x	1	1
chromic acid 50%	x	x	x	2-3	1	x	x	1	x	1	2
chromium trioxid s. chromic acid											
citric acid, aqu.*	3	1	1	1	1	2	2	1	1	1	1
citric acid*	2	1	2	2-3	1	2	2	1	1	1	1
clophen (chlorobiphenyl)	x	x	2	x	1	x	1	1	x	1	3
coal tar (s. also hot tar, cresotote)	3	3	x	x	1	2-3	2-3	1	3	1	2
coconut grease and oil*	2	2	1	3	1	1	1	1	2	1	2
cod-liver oil*	1	1	2	2	1	1	1	1	2	1	2
common salt (sodium chloride)	3	2	1	1	1	1	1	1	1	3	1
compressed air, oil-saturated, to +°C	85	80	175	120	200	70	90	200		200	125
copper acetate	x	x	x	2	x		1	1	2	1	
copper chloride, aqu.	3	1	1	2	1	1	1	1	2	1	1*
copper cyanide	3	1	1	1	1	1	1	1	1	1	1*
copper fluoride	x	x	3	1	1		1	1			1
copper nitrate, aqu.	x	3	1	1	1	2	2	1	1	1	1*
copper sulphate, aqu. (blue vitriol)	2	1	1	2	1	1	1	1	1	1	1*
corn oil*	1	1	1	2	2	2	1	1	2	1	2-3
cottonseed oil*	1	1	1-2	1-2	1	1-2	1	1	2-3	1	2
cow suet	1	1	3	1-2	1	2	2-3	1	3	1	2
creosote	x	2	2	2-3	1	2-3	x	1	3	1	2
cresol, cresylic acid	x	x	x	x	1	x	2-3	1	3	1	2
crotonaldehyde (2-butenal)	3-x	2-3		1	1	x	1	1	1		1
crude oil, high aromatic	2	2	x	2	1	3	3	1	3	1	
cumene (isopropylbenzene)	3	3-x	x	x	1	x	x	1	x	1	x
cupric hydroxide (mountain blue)	1	1	1				1	1		1	1*
cyankali (potassium cyanide)	3	2	1	1	2	1	1	1	1-2	3	1
cyclohexane (hexahydrobenzene)	2	2	x	x	1	x	2	1	x	1	3-x
cyclohexanol (hexaline)	3	x	2-3	1-2	1	x	1	1	2	1	2
cyclohexanone	3	x	x	x	x	x	2-3	1	x	1	2-3
cyclohexylamine	x	x	x	3-x	x	1		1			x
decalin (decahydronaphthalene)	1	1	x	x	1	1	2	1	x	1	x
detergents, synth. 20°C	3	2	1	1	1	1	1	1	2	1	1
dextrose (glucose)	2	1	1	1	1	1	1	1	1	1	1
diacetone alcohol	3	2	2	2	x	x	1	1	3	1	1
dibenzyl ether	2-3	2-3	2	x	1	x		1	x	1	3
dibutyl amine	x	x	3	x	x		x	1	x	1	2
dibutyl phthalate	x	3	2	3-x	2	3	2	1	x	1	2
dibutyl sebacate	x	x	2	x	2	3	1	1	x	1	2
dichlorobenzene	x	x	x	x	2-3	x	3	1	x	1	3
dichloroethylene	x	x	x	x	2	x	x	1	x	1	3
dichloro-isopropyl ether	2	2	x	x	3		3	1	x	1	2
dichloromethane (methylen chloride)	x	x	x	x	2	x	x	1	x	1	3
diesel oil	2	2	3	3	1	3	2	1	x	1	3
diethanolamine			2-3				1	1		1	2
diethyl ether (ether)	2	2	x	3-x	3-x	3	x	1	3	1	2
diethyl sebacate			2	x	2			1	x	1	2

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diethylamine	x	3	2	3	2	x	3-x	1	2	1	1
diethylbenzene	x	x	x	x	1	1	x	1	x	1	x
diethylene glycol monoethyl ether (carbitol)	x	x	2	2	2	3	1	1	3	1	1
diethylene glycol (diglycol)	3	3	2	2	1	3	1-2	1	1	1	1
diglycolic acid, aqu.	x	x	3	2	1	2	1	1			1
dilutions for paints and lacqers determine composition											
dimethyl ether (methyl ether)	2	2		3	3	x	2	1	x	1	1
dimethyl formamide (DMF)	x	3	2-3	3	3	x	1	1	x	1	1
dimethyl phthalate	3	3	3	x	2	3		1	x	1	2
dimethylamine			2	x	x	x	3	1	x	1	1
dimethylaniline (xylidine)	x	x	2-3	3	1	x		1	x	1	2
dimethyl heptanone (diisobutyl keton)	x	x			x			1			
dioctyl phthalate (DOP)	2-3	2-3	3	x	1-2	3	2	1	x	1	2
dioctyl sebacate	2	2	3	x	2			1	x	1	2
dioxane (diethylene dioxid)	x	x	x	x	x	x	1	1	x	1	2
diphenyl	x	x	x	3	1	x	2	1	x	1	3
diphenyl oxid (diphenyl ether)	x	x	2	x	2-3	x	2-3	1	x	1	2
dipropylene glycol			2	1	1		1	1	1	1	1
dodecyl alcohol (lauryl alcohol)			2-3		1		2	1	1	1	3
DOWTHERM A (glycole)	x	3-x	x	2-3				1	2-3		x
drilling oil: determine chem. composition											
Eau de Javelle (potassium hypochlorite)	3	2	2	2-3	1	1	3	1	2-3	3	1-2
epichlorohydrin, liquid	x	x	x	x	x	x	1	1	x	1	1
epsom salt (magnesium sulphate)	1	1	1	1	1	1	1	1	1	1	1
esters s. specific designations											
ethane (gas)	2	2	3	2-3	1	1	1	1	2	1	2
ethanol (ethyl alcohol)	2	2	2	1	2-3	1-3	1	1	1	1	1
ethanolamine (2-aminoethanol)	x	x	2-3	2-3	3	3	1	1	2-3	1	
ethene (ethylene)	1	1	2	x	1	1	1	1	2-3	1	2
ether (ethyl ether, diethyl ether)	2	2	x	3-x	3-x	3	x	1	3	1	2
etheric oils*	2	2	x	3	1	x	x	1	x	1	2
ethyl acetate	x	x	2	x	x	x	2	1	3	1	1
ethyl acrylate (acryl acid ethyl ester)	x	x	2	1	x	x	x	1	x	1	1
ethyl alcohol (denatured = spirits)*	2	2	2	1	2-3	1-3	1	1	1	1	1
ethyl benzene	x	x	x	x	2	x	x	1	x	1	x
ethyl bromide (bromomethane)	2	2	x	x	1	x	2	1	x	1	2-3
ethyl chloride (chloroethane)	x	x	x	x	1-2	3-x	x	1	3	1	2-3
ethyl dichloride (dichloroethylene)	x	x	x	x	2	x	x	1	x	1	3
ethyl ether (ether)	2	2	x	3-x	3-x	3	x	1	3	1	2
ethyl glycol acetate	x	x			x		1	1		1	2
ethyl mercaptan	x	x	3	2	x			1	x	1	2
ethylene chloride (dichloroethylene)	x	x	x	x	2	x	x	1	x	1	3
ethylene chlorhydrine (chloroethanol)	x	x	x	2	x	x	3	1	x	x	2
ethylene diamine	x	x	2	2	2	x	1	1	2	1	1
ethylene (gas) (ethene)	1	1	2	x	1	1	1	1	2-3	1	2
ethylene glycol (glycol, ethane-1,2-diol)	2-3	2-3	1	1	1	1	1	1	1	1	1
ethylene oxid (1,2-epoxy methane), liquid	x	x	3-x	x	x	x	2-3	1	x	1	1
fats in general s. oils and greases	x	x	x	x	x	x	1-2	1	x	1	
fatty acids, with >7 C-atoms, in general	2	1	3	2-3	1	1	3	1	3	1	2

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene / TPR
fatty acids, with 1-7 C-atoms, in general	3-x	2-3	3	2-3	1	1	3	1	3	1	2
fatty alcohols (longchain, aliphatic alcohols)	3	2	2	2	2	2	1	1			3
fermented fruit juice*	3	1	1	1	1	1	1	1	1	1	1
ferric chloride (ferri), aqu.	2-3	2	2	2	1	1	1	1	1	1	1
ferric sulphate, ferric vitriol, aqu.	2-3	2	2	1	1	1	1	1	1	1	2
fertilizing salt, aqu.	x	3		1	1	1	1	1			1
fish-liver oil*	2	2	2	3	1	3	1	1	2-3	1	2
fluohydric acid s. hydroflouric acid											
fluorine, liquid	x	x	x		2	2-3	x	1	x	1	x
fluorobenzene	x	x	x	x	1			1	x	1	x
fluoroboric acid 65%		x	x	1-2	2	1	1	1	2	1	x
fluorosilicic acid, aqu.	x	x	2-3	1-2	1	2-3	2	1	2	1	1
formaldehyd (methanal)	2-3	2-3	1-2	1-2	2-3	2	1	1	2	1	1
formaline (30-40% aqu. formaldehyd solution											
with 8 -12 % methyl alcohol additive)	3	2	2	2	1	1	1	1	2	1	1
formamide	x	x		1	2-3	x	1	1			1
formic acid:											
0.03	2	1	1	1	2	1	1	1	1		1
0.1	3	2	2	1-2	3	1-2	1	1	1		2
1	x	x	x	x	x	2-3	1	1	1	2-x	
Freons and Frigenes ask for detailed advisory											
frost protection agents s. exact chem. designation											
fruit juices*	3	1	1	1	1	1	1	1	1	1	1
fruit pulp*	3	1	1	1	1	1	1	1	1	1	1
fuel s. gasoline											
fuming sulphuric acid: (oleum)	x	x	x	x	1	x	x	1	x	1	x
fungi (microbes)	x	1	3	1	1	1	2-3	1			2-3
furan	x	x	x	x	x	1	x	1	x	x	
furfural alcohol (furfurol)	x	x	2	3	3	1	x	1	3	x	2
gallic acid	3	3	2-3	2	1	1-2	1	1-2	2-3	1	2
gasoline in general (s. specific designations)	1	1	3-x	x	1	x		1	1-2		x
gasoline, ASTM fuel A	1	1	x	1	1	3-x		1	1		x
gasoline, ASTM fuel B	x	x	x	x	1	3-x		1	x		x
gasoline, ASTM fuel C	x	x	x	x	1	3-x		1	x		x
gasoline, diesel, heating oil	1	1	3	2	1	3-x	2	1	x	1	x
gasoline, aviation (kerosene)	1	1-2	x	2	1	3	2	1	2	1	x
gasoline, high aromatic	3	2-3	x	2-3	1	2-3	2-3	2	1	1	x
gasoline, low aromatic	2	2	x	x	1	3	x	1	1	1	x
gasoline, test- (heavy g., white spirit,											
mineral turpentine)	1-2	1-2	x	x	1	3	1-2	1			x
gasoline/benzene (50/50)	3	3	x	x	2	3		1			x
gasoline/benzene (60/40)	2	2	x	x	2	3		1			x
gasoline/benzene (70/30)	2	2	3	x	1	3		1			x
gasoline/benzene (80/20)	2	3	3	x	1	3	3	1			x
gasoline/benzene/ethanol (50/30/20)	3	3	x	x		3		1			x
gelatins, aqu.*	3	1	1	1	1	1	1	1	1	1	1
glacial acetic acid (acetic acid conc.)	x	x	2-3	3	x	x	x	1	x	1	1
Glauber's salt (sodium sulphate)	3	1	1	1	1	1	1	1	1	1	1
glucose*	2	1	1	1	1	1	1	1	1	1	1
glue, animal	2	2	1	1	1	1	1	1	1	1	1

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene /TPR
glycerine (glycerine, propane-1,2,3-triol)	1	1	1	1	1	1	1	1	1	1	1
glycine (amino acetic acid), aqu. 10%	x	x	2-3	2-3	1	1		1			1
glycole determine exact designation, applicable											
in general	2	2	1	1	1	1	1	1	1	1	1
glycolic acid (hydroxy acetic acid), 30%	x	3-x	1	1	1	1	1	1			1
grape juice unfermented*	3	1	1	1	1	1	1	1	1	1	1
greases s. oils and greases											
gypsum (calcium sulphate)	3	1	1	1	1	1-2	1-2	1	2	1	1
heavy gasoline (white spirit or mineral turpentine)	1-2	1-2	x	x	1	3	1-2	1			x
helium	1	1	1	1	1	1	1	1	1	1	1
heptane	2	2	x	2	1	2-3	2-3	1	2-3	1	x
hexahydrobenzene: (cyclohexane)	2	2	x	x	1	x	2	1	x	1	3-x
hexaldehyde	2	3	3	2	x		1	1	2	1	2
hexaline (cyclohexanol)	3	x	2-3	1-2	1	x	1	1	2	1	2
hexane (n-hexane)	2	2	x	1-2	1	1-2	3	1	1-2	1	x
hexanol (hexyl alcohol)	3	x	2-3	2	2	2	1	1	1	1	2
hexane-triol	x	x	1	1	1	1	1	1			1
hexene	1	1	x	3	1		1	1	2		
hot air s. air											
hot bitumen to °C	x	x	x	x	180	x	x	200	x	200	x
hot tar to°C	x	x	x	x	180	x	x	200	x	200	x
hydraulic oils and -liquids:											
~glycol based	1	1-2	2					1		1	1
~mineral oil based	1	1	3	2	1	3	3	1	2	1	3
~phosphate ester based (pydraul)	x	x	2-3	x	1	x	x	1	x	1	1
hydrazines (diamides)	x	x	3	2	2-3	1	1	1	2-3	1	1
hydrazine hydrate, aqu.	x	x	3	1	1	1	1	1	2	1	1
hydrobromic acid	x	3	3	1	1	2-3	1-2	1	1	1	1
hydrochloric acid 15%	3	2	3	1-2	1	1	1	1	3	1	1
hydrochloric acid 38% (conc.)	x	x	3	1-2	1	2	1-2	1	3	1	1
hydrochloric acid, (hydrochlorous) gaseous	3	2	1	1-2	1	1	1	1	2	1	1
hydrocyanic acid s. prussic acid											
hydrofluoric acid 10%	x	2	2-3	1	1-2	1-2	1-2	1	2	1	1
hydrofluoric acid 30%	x	2	3	1-2	1-2	2	1-2	1	3	1	2
hydrofluoric acid 75%	x	3	x	2	2	3	3	1	x	1	3
hydrofluoricsilicic acid, aqu.	x	x	2-3	1-2	2-3	2-3	2	1	2	1	1
hydrogen (gas)	1	1	3	1	1	1	1	1	1	1	1
hydrogen cyanide s. prussic acid											
hydrogen peroxide 10%	x	2	1	2	1-2	1	2	1	x	1	1-2
hydrogen peroxide 30%	x	2	1-2	2	1	2	2-3	1	x	1	2-3
hydrogen sulphide, dry	x	3	2-3	1-2	1	x	1	1	2-3	1	1
hydrogen sulfide, wet	x	3-x	1	1-2	1	x	1	1	2-3	1	1
hydroquinone, aqu.	x	x	3	2-3	2	2	1	1	3		3
hydroxylamine sulphate, aqu.	x	x	1	1	1	1		1			1
ink	1	1	1	1	1	3	1	1			1
iodine tincture (5-10% alcohol iodine solution)	x	x	x	2	1	2-3	2-3	1	3	1	1
isobutanol (isobutyl alcohol)	3	x	1	1	1	1	1	1	1	1	2
isooctane	2	2	3	2	1	1	3	1	3	1	x
isooctanol (isooctyl alcohol)	3	3	2	2	1	1	1	1	3	1	2
isophoron	3-x	3-x	3-x	x	x			1	x	1	3

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene / TPR
isopropanol (isopropyl alcohol)	2	3	1	1	1	2	1	1	2	1	1
isopropyl acetate	3	3	3	x	x	3	2-3	1	x	1	1
isopropyl benzene (cumen)	3	3-x	x	x	1	x	x	1	x	1	x
isopropyl chloride	3	3	x	x	1			1	x	1	2
isopropyl ether	2	2	x	3	3	2-3	2-3	1	x	1	2
Javelle lye: s. potassium hypochlorit)	3	2	2	2-3	1	1	3	1	2-3	3	1-2
jet fuel DP1-IPS			x	x	1	2-3	x	1	2-3	1	
kerosene	2	1	3	2-3	1	1	3	1	2	1	x
ketones s. specific designations, applicable in general	x	x	2	x	x	x	x	1	x	1	x
lacquers, composition must always be determined											
lactic acid*	x	2	2	2	1	3	2	1	3	1	
lanolin (wool grease)	1	1	3	3	1	2	1-2	1	3	1	2
lard (oils, animal)	1	1	3	1-2	1	2	2-3	1	3	1	2
laughing-gas (nitrous oxide)	1	1	1	1	1	1	1	1	1	1	1
lauryl alcohol (dodecyl alcohol)			2-3		1		2	1	1	1	3
lavender oil*	x	x	x	2-3	1			1	2-3		
lead acetate, aqu.	3	1	1	1	1	1	1	1	2	1	1
lead arsenate, aqu.	3	1	1			1	1	1	1	1	1
lead nitrate	2	1	2	1	1	1	1	1	1	1	1
lead sulfate	1	1	1	1	1	1	1	1	1	1	1
lemon oil (90% limonene)	2	2	x			x	2-3	1			2
lighting gas (lamp gas, town gas)		3	3	3	1	1	1	1	x	1	2
lignite tar oil (s.a. coal tar)	3	3	x	x	1	2-3	2-3	1	3	1	2
lime, burned (calcium oxide)	1	1	1	1	1	1	1	1	1	1	1
lime, slaked (calcium hydroxide											
limestone (calcium carbonate)	1	1	1	1	1	1	1	1	1	1	1
linseed oil*	1	2	1	2	1	2	2	1	3	1	2-3
liquiefied petroleum gases (LPG) s. chem.											
identification of the gases											
lubricants and greases s. oils											
lyes s. exact designation, applicable in general	x	2	2	1	2	1	1-2	1	1-2	1	1-2
machine oil, s. oils, mineral											
magnesium chloride, aqu.	3	1	1	1-2	1	1-2	1	1	1-2	1	1
magnesium hydroxide	3	1	1	1	1	1	1	1	1	1	1
magnesium silicate (talc)	1	1	1	1	1	1	1	1	1	1	1
magnesium sulfates	1	1	1	1	1	1	1	1	1	1	1
magnesium sulfite, aqu.	3	1	1	1	1	1	1	1	1	1	1
maize oil*	2	2	2	1	1	2	2	1	1		
maleic acid, aqu.	x	x		x	1	1	2	1	3-x	1	1
maleic anhydride				x	3				x		2
manure	x	1	1	1	1	1	1	1	1	1	1
margarine-greases and oils*	1	1	3	1-2	1	2	37714	1	2	1	2
mash*	3	1	1	1	1	1	1	1	1	1	1
MEK (methyl ethyl ketone)	x	x	x	x	x	x	2	1	3	1	1
melamine			3		1	x		1	x		
menthol	3	3	x	1	1		1	1			1-2
mercury	1	1	1	1	1	2	1	1	1-2	1	1
mercuric chloride (sublimate)	1	1	1	1-2	1	2	1	1	1-2	1	1
mercurious nitrate	2	1	1		1	1	1	1		1	1

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene /TPR
mesityl oxide	x	x	x	x	x	x	3	1	x	1	3
methane (gas)	2	3	3-x	2-3	1	1-2	1	1	2-3	1	2
methanol (methyl alcohol)	2	3	1	1	2	1	1	1	1	1	1
methyl acetate (acetic acid methyl ester)	x	x	x	x	x	x	2	1	2	1	1
methyl acrylate	x	x	x	x	x	x		1	2		
methyl alcohol	2	3	1	1	2	1	1	1	1	1	1
methyl bromid (bromomethane)	x	x	x	3	2	x	3	1	x		x
methyl chloride (chloromethane)	x	x	x	x	2	x	3	1	x	1	2
methyl chloroform (trichloroethane)	x	x	x	x	1	3	x	1	x	1	2
methyl ethyl ketone (MEK)	x	x	x	x	x	x	2	1	3	1	1
methyl glycol (methylcellosolve)	x	x	x	3	x	x	2	1	2-3	1	1
methyl glycol acetate	x	x	x		x			1	x	1	1
methyl isobutyl keton	x	x	3	x	x	x	2-3	1	x	1	2
methyl oxiran (propylene oxide)	x	x	x	x	x		2-3	1	x	1	1
methyl phthalate (dimethyl phthalate)	3	3	3	x	2	3		1	x	1	2
methylamine, aqu.	x	x	x	1	2-3	3	1	1	2	1	1
methylated spirits (ethanol denaturated)	2	2	2	1	2-3	1-3	1	1	1	1	1
methylen chloride (dichloromethane)	x	x	x	x	2	x	x	1	x	1	3
microbes	x	1	3	1	1	1	2-3	1			2-3
milk of lime (lime water) s. calcium hydroxide, aqu.milk*	3	2	1	1	1	1	1	1	1	1	1
mineral oil s. oils, mineral											
mixed acid II (sulphuric acid/phosphoric acid/water)	x	x		1	1	1	3	1	2	1	2
mixed acid I (sulphuric acid/nitric acid/water)	x	x	x	x	x	x	x	1	1-2	1	3
molasses*	1	1	1	1	1	1	1	1	1	1	1
monochloroacetic acid	x	x	x	2	x	2	x	1	3	1	2
monochlorobenzene	x	x	x	x	1	x	3	1	x	1	x
monochloromethane (methyl chloride)	x	x	x	x	2	x	3	1	x	1	2
mono ethylene glycol	1										
monostyrol (styrol, styren, monomeric)	x	3	x	x	2	x	x	1	x	1	x
morpholine	x	x	x	2	2	x	1	1	3		1
motor oil s. oil and greases, clarify mineral additives											
mountain blue (cupric hydroxide)	1	1	1				1	1		1	1*
must fermented (fermented fruit juice)	3	1	1	1	1	1	1	1	1	1	1
must, unfermented*	3	1	1	1	1	1	1	1	1	1	1
mustard	1	1		1	x	1-2	1	1	1		
myristyl alcohol, myristic alcohol (tetradecanol)	1	1	2	1	1	1		1	1	1	2
naphtha	2	2	3	x	1	2-3	2-3	1	3	1	3-x
naphthalene (stone oil)	2	2	3	3	1	x	2-3	1	x	1	
natural gas, wet	2	1-2	2-3	1	1	1	2	1	1	1	2
natural gas, dry	1	1	2-3	1	1	1	1	1	1	1	2
n-hexane	2	2	x	1-2	1	1-2	3	1	1-2	1	x
nickel acetate	3	2	2	x	x		1	1	2		2
nickel chloride, aqu.	3	2	1-2	1-2	1	1	1	1	2	1	2
nickel sulphate, aqu.	2-3	2	1	1	1	1	1	1	1	1	1
nitrating acid (mixed acid I)	x	x	x	x	x	x	x	1	1-2	1	3
nitric acid 10%	3	3	3	1-2	1	1	2	1	2	1	1
nitric acid 25%	x	x	x	2	1-2	1	2-3	1	3	1	1
nitric acid 50% (aqua fortis)	x	x	x	3	1-2	2-3	2-3	1	x	1	1-2

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nitric acid 60%	x	x	x	3-x	2	2-3	x	1	x	1	3-x
nitric dilution	2	2	x	1		x	2-3	1	1		2-3
nitro-benzene	x	x	x	x	2	x	3	1	x	1	1
nitrogen	1	1	1	1	1	1	1	1	1	1	1
nitrogen oxides (nitrouse gases)	x	x	x	3	3	x	1	1	x		x
nitro-glycerin	x	x	x	1	1	2	2	1			x
nitro-methane	x	x	x	2-3	x	2-3	1	1	3		
nitro-propane	x	x	x	x	x			1	x	1	1
nitro-toluole	x	x		x	3	x	1	1	x	1	x
nitrous fumes (nitrogen oxides)	x	x	x	3	3	x	1	1	x		x
nitrous oxide (laughing gas)	1	1	1	1	1	1	1	1	1	1	1
N-methylpyrrolidone (NMP)	3	3			3	3		1			
nonyl alcohol (nonanol)	x	x	2	2	1		2	1	3	1	2
octane	1	1	x	x	1		1	1	x	1	x
octanol = octyl alcohol	x	x	2	1	1	x	1	1	1	1	2
oils and greases											
-animal*	1	1	3	1-2	1	2	2-3	1	3	1	2
-ASTM-oil Nr. 1 20°C	1	1	2	1	1	2	2	1	1	1	3
-ASTM-oil Nr. 2 20°C	1	2	3	2	2	2	3	1	1	1	x
-ASTM-oil Nr. 3	3	3	x	2-3	1			1	1		x
-ASTM-oil Nr. 3 20°C	1	2	3	2	2	2	3	1	x	1	x
-crude oil, high aromatic	2	2	x	2	1	3	3	1	3	1	
-diesel oil	2	2	3	3	1	3	2	1	x	1	3
-heating oil	2	2	3	3	1	3	2	1	x	1	3
-hydraulic oils and -liquids:											
~glycol based	1	1-2	2					1		1	1
~mineral oil based	1	1	3	2	1	3	3	1	2	1	3
~phosphate ester based (pydraul)	x	x	2-3	x	1	x	x	1	x	1	1
-mineral, without additives, at 20°C	1	1	2-3	2-3	1	2	2	1	x	1	2-3
-mineral, without additives, to °C	65	60	x	150	200	x	30	200		200	100
-silicon based	1	1	2-3	1	1	1	1	1	2-3	1	1
-transformer oils (pyranols)	2	2	x	x	1	3	3	1	2-3	1	x
-vegetable)*	1	1	3	1-2	1	2	2	1	2	1	2
oleic acid, olein	1	1	x	3-x	2	2	2-3	1	x	1	2
oleum (fuming sulfuric acid)	x	x	x	x	1	x	x	1	x	1	x
oleum vapours	x	x	x	3	3	3	x	1	x	1	x
olive oil*	1	1	2	1-2	1	1	1	1	2	1	2
oxalic acid, aqu.	x	x	2	2	1	2	1	1	3	1	1
oxirane (ethylene oxide)	x	x	3-x	x	x	x	2-3	1	x	1	1
oxygen pure to +°C	80	80	175	120	200	70	70	200		200	100
ozone	1	1	1	1	1	2	3	1	2-3	1	1
palm oil, palm pip oil*	1	2	1	3	1	1-2	1-2	1	x	1	2
palmitic acid	1	1	3	3	2	2	1	1	3	1	1
paraffin, paraffin oils	1	2	2	3	1-2	1-2	2-3	1	2-3	1	2
paraformaldehyde	2	1	1		2		1	1	2	1	1
pectine	1	1		1	1	1		1			1
pentachlorophenol	x	x	3				1-2	1		1	2
pentane	3	x	x	2	1	1	x	1	2	1	3
pentanols s.amyl alcohols)	3	3	3	1	2	1	1-2	1	1	1	1

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene /TPR
peracetic acid (mixture, cold desinfection)						3-x	2	1			2-3
perborate (sodium borate)	1	1	1-2	1-2	1	1	1	1	1	2	1
perchloric acid, aqu.	x	x	x	1-2	1	2-3	2	1	2	1	1
perchloroethylen (tetrachloroethylen)	x	x	x	x	1	3	x	1	x	1	x
perhydrol s. hydrogen peroxide											
permanganate (potassium permanganate) 10 %ig	3	1	1	1	1	1	1	1	2	2	1
peroxomonosulphuric acid				2-3		1	x		x	1	
petroleum (s. also oils, mineral)	1	1	2-3	2-3	1	x	2-3	1	2	1	x
phenol (carbolic acid), aqu.	3-x	3-x	3	2-3	1	x	x	1	3	1	2-3
phenyl ether (diphenyl oxide)	x	x	2	x	2-3	x	2-3	1	x	1	2
phenylbenzene (biphenyl)	x	x	x	x	1	x		1	x		1
phorone (diisopropylidene aceton)	x	x	x	x	x			1	x		1
phosphoric acid 3%	2-3	2	2	2	1	1	1	1	1	1	1
phosphoric acid 50%	3	2	3	2	1	1	2	1	2	1	1
phosphoric acid 85%	x	x	3	2	1	1	2	1	3	1	1
phosphoric alumina (aluminium phosphates, aqu.)	2	1	1	1	1	1	1	1	1	1	1
phosphorus oxychloride	x	x	x	3	1	x	2-3	1	3	1	1
photo-emulsions, in general (s. exact											
chem. designation)	x	x	2	1	2	1-2	1	1	1-2	1	1
phthalic acid			2	1	x	2	1	1	1		1
phthalic acid anhydride, aqu.				1	x	3	1	1	1	1	1
phthalic acid ester (phthalates)	x	3	x	1	1	1	1	1			2-3
picric acid	2-3	2-3	3	2	1-2	2-3	1	1	2	1	1
pigs fat (oils, animal)	1	1	3	1-2	1	2	2-3	1	3	1	2
pine oil*	1	1	x	x	1	3	3	1	x	1	
polychlorinated biphenyls (pyranols, transformer oils)	2	2	x	x	1	3	3	1	2-3	1	x
potash (potassium carbonate)	3	2	1	1	1	1	1	1	1	3	1
potassium acetate, aqu.	x	x	x	x	2-3	1	1	1	2-3	1	1
potassium aluminium sulfate (alum)	2	1	1-2	1	1	1	1	1	2	3	1
potassium bicarbonate (potassium hydrogen											
carbonate)	2	2	1	1	1	1	1	1	1	3	1
potassium bichromate (potassium dichromat)	3	2	2	1-2	1	1	1	1	1	3	1
potassium bisulfate, aqu.	x	3-x	2	1	1		1	1			1
potassium borate, aqu.	3	1	1	1	1	1	1	1	1	3	1
potassium bromate, aqu. 10%	x	x	2-3	1	1	1	1	1			1
potassium bromide, aqu.	2-3	1	1	1	1	1	1	1	1	3	1
potassium carbonate (potash)	3	2	1	1	1	1	1	1	1	3	1
potassium chlorate, aqu.	3	2	2	1	1	1	1	1	1	3	1
potassium chloride, aqu.	2	1	1	1	1	1	1	1	1	3	1
potassium chromate, aqu., 40%	x	x	2-3	1	1	1-2	1	1	1		1
potassium cyanide (cyankali), aqu.	3	2	1	1	2	1	1	1	1-2	3	1
potassium dichromate, aqu.	3	2	2	1-2	1	1	1	1	1	3	1
potassium hydroxide (caustic potash,-lye) 10%	2-3	2	3	1-2	1	2	1	1	1	3	1
potassium hydroxide (caustic potash,-lye) 50%	x	3	x	1-2	2-3	2-3	1	1	1	x	1
potassium hypochlorite (Javelle)	3	2	2	2-3	1	1	3	1	2-3	3	1-2
potassium iodide, aqu.	3	2	2	1	1	1-2	1-2	1	1	2	1
potassium nitrate, aqu.	2-3	1	1	1	1	1	1	1	1	3	1
potassium perchlorate, aqu.	x	x	2	1	1	1		1			1
potassium permanganate 10%, aqu.	3	1	1	1	1	1	1	1	2	2	1

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene / TPR
potassium peroxy disulfate (potassium persulfate)	x	3-x	3-x	1	1	2	1	1			1
potassium phosphate (mono and dibasic)	1	1	x	1	1		1	1	1	3	1
potassium sulfate	1	1	1	1	1	1	1	1	1	3	1
potassium sulfite	1	1	1	1	1	1	1	1	1	3	1
propane gas	1	1	x	2-3	1	1	2	1	1	1	1
propane, liquid	1	1	3	3	1	1	x	1	2-3	1	1
propanol (propyl alcohol)	2	3	1-2	1-2	1	1-2	1	1	1-2	1	1
propargyl alcohol, aqu. 7%	x	x	2	2	1		1	1	1		2
propionic acid (propane acid)	x	x	x	3	1	1	1	1	x	1	1
propyl acetates (acetic acid propyl esters)	x	x	x	x	x		2	1	x	1	1
propyl alcohol (propanol)	2	3	1-2	1-2	1	1-2	1	1	1-2	1	1
propylamine	x	x	x	x	x			1	x	1	1
propylene (propene)	x	x	x	x	1	2		1	x	1	1
propylene dichloride			x				x	1		1	2
propylene glycols (propandiols)	x	x	1	1	1	3	1-2	1	2-3	1	1
propylene oxide (methyloxiran)	x	x	x	x	x		2-3	1	x	1	1
prussic acid 20%	3	2	2-3	1-2	1-2	1-2	1	1	2-3	1	1
prussic acid 98% (conc.)	3	2	2-3	1-2	1-2	1-2	1	1	2-3	1	1-2
pydraul (hydraulic liquids phosphate ester based)	x	x	2-3	x	1	x	x	1	x	1	1
pyranols (oils, transformer oils)	2	2	x	x	1	3	3	1	2-3	1	x
pyridine	x	x	x	3	3	x	1	1	x	1	2-3
pyrrol	x	x	2	3	3			1	3		1
quick lime (calcium hydroxide)	3	2	1	1	1	2	1	1	1	1	1
radiation, radioactive	2	2	x	1		3	x	x	1		2
radiation, UV-	2	2	2	1	1	2	3	1			x
radioactive radiation: aplicable in general	2	3	x	x	x	x	3	x	x	x	1-2
rapeseed oil*	2	2	x	2-3	1		x	1	2-3	1	2
raw sugar sap	x	3	1	1	1	1	1	1	2	1	1
redoil (aniline)	x	x	2	3	1-2	2-3	2-3	1	x	1	1
saccharose (sugar) aqu.	3	1	1	1	1	1	1	1	1	1	1
salicylic acid (spiric acid), aqu.	2	1	1	1	1	2	1	1	2	1	1
salmiac (ammonium chloride)	3	1	1	2	1	1	1	1	1	1	1
salpetre (pottasium nitrate)	2-3	1	1	1	1	1	1	1	1	3	1
salt (table or common salt, sodium chloride)	3	2	1	1	1	1	1	1	1	3	1
salted water (brine, sea water)	3	1	1	1	1	1	1	1	1	1	1
sangajol = turpentine oil substitue, mineral	1-2	1-2	x	x	1	3	1-2	1			x
seawater	x	2	1	1	1	1	1	1	1	1	1
sebacic acid ester	x	x		x	3-x	x		1			2
sewage	x	aks for advice	2	1	1	1	1	1	1	1	2
silicon dioxide (silicic acid)	1	1	1	1	1	1	1	1	1	1	1
silicon oils and -greases	1	1	2-3	1	1	1	1	1	2-3	1	1
silver nitrate, aqu.	1	1	1	1	1	2	1	1	1-2		1
skydrol (hydraulic liquids, phosphate ester based)	x	x	2-3	x	1	x	x	1	x	1	1
soapsuds, -solution, detergents)	x	2	1	1	1	1	1	1	1	1	1
soda lye s. sodium hydroxide											
soda salpetre (sodium nitrate)	2	1	3	1	1	1	1	1	2	1	1
soda, calcinated (sodium carbonate anhydrous)	2	2	1	1	1	1	1	1	1	2	1
soda, crystallised (sodium carbonate aqu.)			1	1	1	1	1	1	1	2	1
sodium acetate, aqu.	x	3	x	2	x	1	1	1	2	1	1

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene /TPR
sodium benzoate, aqu.	1	1	2-3	1	1	1-2	1	1	1		1
sodium bicarbonate (sodium-hydrogencarbonate), aqu.	x	2	1	1	1	1	1	1	1	2	1
sodium bisulfate (sodium-hydrogensulfate)	x	x	1	1	1	1	1	1	1	2	1
sodium bisulfite (sodium-hydrogensulfite), aqu.	x	x	1	1	1	1	1	1	1	2	1
sodium borate (borax)	1	1	1-2	1-2	1	1	1	1	1	2	1
sodium bromide				1-2	1	1-2	1	1	1		1
sodium carbonate (soda) aqu.			1	1	1	1	1	1	1	2	1
sodium chlorate, aqu.	3	2	1	1	1	1	1	1	1	3	1
sodium chloride (common or table salt)*	3	2	1	1	1	1	1	1	1	3	1
sodium chlorite				1	1	3	2-3	1			2
sodium cyanide	3	3	1	1	1	1	1	1	1	3	1
sodium dichromate	3	3	2	1	1		1	1	1	3	1
sodium fluoride	3	2	2	1	1	1	1	1	1	3	1
sodium fluoroaluminate 10%	3	2-3	2		1	1	1	1	1	3	1
sodium hydroxide (sod lye) 25%, 100°C	x	x	x	3	x	x	x	1	x	3	1
sodium hydroxide (sod lye) 25%, 20°C	x	2	2	1	3	1	x	1	2	2	1
sodium hypochlorite 10%	3	2	2	1	1	1	2	1	2-3	1	2-3
sodium hypochlorite 30%	x	3	3	1	2-3	1	2	1	1	1	x
sodium metaphosphate	1	1	1	2	1	1	1	1	2	1	1
sodium nitrate, aqu.	2	1	3	1	1	1	1	1	2	1	1
sodium nitrite	2	1	1	1	1	1	1	1	1	1	1
sodium perborate	x	x	2	2	1	2	1	1	2	1	1
sodium percarbonate (bleaching agent)			2-3		1		1	1			1
sodium peroxide	3	2	3	2	1-2	2	1	1	2-3	1	1
sodium phosphate (s. also trisodium phosphate)	2	2	x	2	1	1	1	1	2	1	1
sodium silicate, aqu.	x	3	1	1	1	1	1	1	1	1	1
sodium sulfide, aqu.	2	2		1	x	1	1	1	1	1	1
sodium sulfate (Glauber`s salt), aqu.	3	1	1	1	1	1	1	1	1	1	1
sodium sulfite, aqu.	2	1	1	1	1	1	1	1	1	1	1
sodium thiosulfate (antichlorine)	3	2	1	1	1	1	1	1	1	1	1
solvents s. specific designations											
soyabean oil*	2	2	1	2-3	1	1	1-2	1	2-3	1	2
spindle oil (oils, mineral											
spirits (ethanol, denaturated)	2	2	2	1	2-3	1-3	1	1	1	1	1
spruce needle oil	2	2	2	x	1-2	x	2	1			
staining solution (20% nitric acid 4% hydrofluoric acid)	x	x		1				1	x		x
starch syrup*	2	2	1	1	1	1	1	1	1	1	1
starch, aqu.*	1	1	1	1	1	1	1	1	2	1	1
steam of water to°C	x	x	120	100	150	x	x	200		200	135
stearin (stearic acid)	3	2	1-2	2-3	2	1-2	1-2	1	2	1	1
stone oil (naphthalene, liquid paraffine)	2	2	3	3	1	x	2-3	1	x	1	
styrene, monomer	x	3	x	x	2	x	x	1	x	1	x
sublimate (mercury chloride)	1	1	1	1-2	1	2	1	1	1-2	1	1
sugar aqu. * (s. also raw sugar juice)	3	1	1	1	1	1	1	1	1	1	1
sulfonic acids, in general	x	x	1	1	2	1		1			2-3
sulfur dioxide s. sulfurous acid											
sulfur trioxide (sulfuric acid anhydride)	3	2	2-3	3	1	1	1	1	x	1	1
sulfur, molten, 90°C	3	2	1	1	1	x	x	1	2	1	2-3

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	PUR-Ester	PUR MHR	Silikon	Hypalon	Viton	PVC	PE	PTFE	Neopren	Kapton	TPV / Santoprene / TPR
sulfuric acid 10%	3	2	3	1	1	1	1	1	2	1	1
sulfuric acid 30%	x	2	x	1	1	1	1	1	2	1	1
sulfuric acid 50%	x	2	x	1	1	1	1	1	2	1	1
sulfuric acid 75%	x	x	x	1-2	1	2	2	1	2-3	1	1
sulfuric acid 90%	x	x	x	2	1	x	3	1	3	1	1
sulfuric acid conc.(oleum, fuming sulfuric acid)	x	x	x	3-x	1	x	3	1	x	1	x
sulfuric ether s. ether											
sulfurous acid 10%, moist	3	2	2	1-2	2	2	1	1	3	1	1
sulfurous acid 75%, moist	x	x	3	2-3	2	2-3	2	1	3	1	1
table salt (sodium chloride)	3	2	1	1	1	1	1	1	1	3	1
talc (magnesium silicate)	1	1	1	1	1	1	1	1	1	1	1
tallow	1	1	1	1	1	1	1	1	1	1	2
tannic acid (tannin)	2-3	2	2	1-2	1-2	1	1	1	1-2	1	1
tar (s. also hot tar)	x	x	2	x	1	2	2	1	3	1	x
tartaric acid, aqu.*	3	1	1	1	1	1	1	1	1-2	1	
test gasoline = white spirit	1-2	1-2	x	x	1	3	1-2	1			x
tetrachlorocarbon (tetrachloromethane,											
tetra, carbon tetra chloride)	3	3	x	x	1	x	x	1	x	1	x
tetrachloroethans	x	x	x	x	2	3	x	1	x		x
tetrachloroethylene (perchloroethylene)	3	3	x	x	1	x	2-3	1	x	1	x
tetrahydrofurane (THF)	3	3	x	x	x	x	3	1	x	1	2
tetraline = tetrahydronaphthalene	x	x	x	x	1	1	3	1	x	1	x
thionyl chloride	x	x	x	x	3	x	x	1	x		x
thiophene	x	x	x	x	x	x	1	1			x
tin-II-chloride, aqu.	3	1	2	1	1	1	1	1	1	1	1
toluol	x	x	x	x	1	x	3-x	1	x	1	x
tooth pasts						1	1	1			
town gas, lamp gas (natural gas see later)		3	3	3	1	1	1	1	x	1	2
train-oil	2	2	2	3	1	3	1	1	2-3	1	2
transformer oils	2	2	x	x	1	3	3	1	2-3	1	x
tributyl phosphate (TBP)	x	x	x	x	x	x	1	1	x	1	1
trichloro acetic acid (TCA)	x	x	x	x	3	2	1-2	1	x		3
trichloroethane (methylchloroform)	x	x	x	x	1	3	x	1	x	1	2
trichloroethylene (ethylene trichloride)	x	x	x	x	1-2	x	x	1	x	1	2
trichloromethane (chloroform)	x	x	x	x	1	x	x	1	x	1	x
tricresyl phosphate	x	x	3	x	1-2	x	3	1	3	1	1
triethanolamine	x	x	1	2-3	1	x	1	1	2	1	1
triethylamine	2	2	x		x	2	1	1	2	1	1
triethylene glycol (triglycol)	2	2	2	1	1			1			1
trioctyl phosphate	x	x	3	x	x	x	1	1	x	1	1
trisodium phosphate	3	3	1	1	1	1	1	1	1	1	1
tung oil	3	2	3	3	1	3	2	1	x	1	2
turpentine (-oil)	3	x	x	x	1	x	x	1	x	1	3-x
turpentine, mineral	1-2	1-2	x	x	1	3	1-2	1			x
urine	3	1	1	1	1	1	1	1	2-3	1	1
varnish	3	2	x	x	1	x	1	1	x		x
vaseline s. oils u. greases, mineral											
vegetable oils	1	1	3	1-2	1	2	2	1	2	1	2
vinegar*	x	3	1	1	1	2	1	1	2	1	1

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vinyl acetate (acetic acid vinyl ester)	x	x	x	1	2	x	1	1	x	1	1
vinyl chloride (chloroethene), monomer	x	x	x	x	1	x	x	1	x	1	2
vitamin C	2-3	1			1	1	1				
vitriol oil (oleum)	x	x	x	x	1	x	x	1	x	1	x
vitriol blue (copper sulfate)	2	1	1	2	1	1	1	1	1	1	1*
water:	3	2	1	1	1	1	1	1	1	1	1
-aqua regia	x	x	3	3	2	2-3	2	1	3	1	3
-condensed, distilled, desalinated or demineralised does not effect polymers but polymers effect water											
-drinking- or mineral water, without additives* to°C	25	60	120	100	150	70	80	200		200	100
-mineral water CO2 saturated*	3	1	1	1	1	1	1	1	1	1	1
-seawater	x	2	1	1	1	1	1	1	1	1	1
weathering	2	1	1	1	1	1	2	1	1	1	1-2
white spirit	1-2	1-2	x	x	1	3	1-2	1			x
wines red and white*	3	1	1	1	1	1	2	1	2-3	1	1
wood oil	3	2	3	3	1	3	2	1	x	1	2
wool grease (lanoline)	1	1	3	3	1	2	1-2	1	3	1	2
xylamon (wood protection)	3	3	x	x	2			1			x
xylene	x	x	x	x	1-2	x	2-3	1	x	1	x
xylidine (dimethyl aniline)	x	x	1	1	1			1	1		3
zinc acetate, aqu.	x	x	x	x	x		1	1	x	1	1
zinc chloride, aqu.	2-3	2	1	1	1-2	1	1	1	1	1	1
zinc sulphate, aqu.	2-3	2	1	1	1	1	1	1	1	1	1

* for foods: Please ask for food quality

RESISTANCE TABLE-ANNEX

	Fliuds	Immersion Temperature C°	TPR-L	Santo-L
Acids and Alkalis	98% Sulfuric Acid	23	A	A
	10% Hydrochloric Acid	23	A	A
	50% Sodium Hydroxide	23	A	A
	10% Potassium Hydroxide	23	A	A
Aqueous Solutions	Water	100	A	A
	10% Zinc Chloride	23	A	A
	Sea Water	23	A	A
	15% Sodium Chloride	23	A	A
	18% Calcium Chloride/ 14% Calcium Bromide	150	A	A
	2.5% Detergent (Tide)	23	A	A
Organic Solvents	Acetic Acid	23	A	A
	Acrylonitrile	23	A	A
	Aniline	23	A	A
	Bromobenzene	23	D	C
	n-Butyl Acetate	23	A	A
	Cyclohexane	23	D	B
	Diethyl Ether	23	A	A
	Dimethylformamide	23	A	A
	Dioctyl Phthalate	23	A	A
	1,4-Dioxane	23	A	A
	95% Ethanol	23	A	A
	Glycerol	23	A	A
	n-Hexane	23	B	A
	Methylethylketone	23	A	A
	Nitrobenzene	23	A	A
	Piperidine	23	A	A
	I-Propanol	23	A	A
	Pyridine	23	A	A
	Trichloroethylene	23	F	F
	Turpentine	23	C	C
	Xylene	23	C	B
Petroleum Oils and Fuels	ASTM#1 Oil	100	B	A
		125	B	B
	IRM 902 Oil	100	C	B
		125	C	C
	IRM 903 Oil	100	D	C
		125	D	D
	Reference Fuel A (Isooctane)	23	B	B
	Reference Fuel B (Isooctane/Toluene, 70/30)	23	C	C
	Reference Fuel C (Isooctane/Toluene, 50/50)	23	C	C
Automotive Fluids	Automatic Transmission Fluid	125	C	C
	Hydraulic Brake Fluid	23	A	A
		100	A	A
	Lithium Grease	23	A	A
		100	B	B
	Power Steering Fluid	125	D	C
	Antifreeze, 50/50 Ethylene Glycol (Prestone®)/water	23	A	A
Industrial Fluids	Pydraul® 312(Monsanto, phosphate ester)	125	B	A
	Skydrol® 500 B4 (Monsanto, phosphate ester)	125	A	A
	Sunvis® 706 Fluid (Sun Oil, petroleum base)	125	C	C
	Ucon® CC732 (Union Carbide, polyalkylene glycol)	125	A	A
	Ucon® 50HB5100 (Union Carbide, polyalkylene glycol)	125	B	B
	Freon® 11 (DuPont, halocarbon)	5	C	A

Rating	Percent Weight Change
A	<20
B	20-40
C	40-60
D	60-80
E	80-100
F	>100