

# Chemical resistance of



# pump hoses

Pumping medium	NK	N	H	NBR	EPDM	Pp
available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
acetaldehyde	C	B	A	C	A	A
acetates	?	?	?	?	?	?
acetic acid 10 %	A	A	A	A	?	A
acetic acid 25 %	B	B	A	B	?	A
acetic acid 40%, 96%	C	C	C	?	?	C
acetic acid 75 %	C	C	C	C	?	A
acetic acid, conc.	?	A	A	B	B	A
acetic acid, crystallized	C	C	C	B	?	?
acetic acid, vapors	?	A	A	B	?	A
acetic anhydride	A	A	A	C	C	C
acetone 100%	C	C	C	C	B - C	C
acetylene	A	A	A	A	B	A
acrylate dispersion	A	A	A	?	?	?
acrylate monomeres	C	?	?	C	?	?
acrylonitrile	C	B	C	?	?	C
adipic acid dinitrile	?	A	?	?	B	?
air	?	?	?	?	A	?
alcohol	A	A	A	A	A	A
alum	A	A	A	B	A	?
aluminium chloride	A	A	A	A	B	A
aluminium fluoride	A	A	A	A	B	?
aluminum sulfate	A	A	A	A	B	?
amines	C	C	B		?	B
ammonia	A	A	A	C	B	A
ammonia (aqueous solution)	A	A	A	C	A	A
ammonium bisulfite	?	?	A	?	?	?
ammonium carbonate	A	A	A	B	A	?
ammonium chloride	A	A	A	B	A	A
ammonium hydroxide	B	A	A	C	B	A
ammonium monophosphate	B	A	A	A	?	?
ammonium nitrate	A	A	A	B	B	?
ammonium sulfate	A	B	A	A	B	?
Amocool Soluble 3 %	?	A	A	?	?	?
amyl acetate	B	B	C	C	C	C
amyl alcohol	A	A	A	C	B	A
Andol 4,5 H1 36	?	A	?	?	?	?
aniline	C	C	C	C	?	A
aniline colors	B	A	?	B	?	?
animal oils	?	?	?	?	?	A
antimony salts	?	?	?	?	?	?
arsenic	A	A	A	?	?	A
arsenic, phosphorester-based	C	C	C	C	C	?
baking soda	A	A	A	A	?	A
barium chloride	A	A	A	A	B	A
barium hydroxide	A	A	A	A	A	A
barium salts	A	A	A	A	B	A
barium sulfide	A	A	A	A	B	?
Basoplast PR8081	?	?	A	?	?	?

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available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
battery acid	B	A	A	B	A	?
Becroson KSM	?	A	?	?	?	?
beer	A	A	A	B	B	A
benzaldehyde	C	C	?	C	C	A
benzene	C	C	C	C	C	C
benzine	C	C	B	A	C	C
benzoic acid	?	?	?	?	C	C
benzyl alcohol	A	A	A	C	B	A
benzyl chloride	C	C	?	C	C	?
biodiesel made of fat from deep fryers	C	C	C	C	C	C
biodiesel made of rape oil	C	C	C	C	C	C
bitumen	B	A	B	A	?	?
blast furnace gas	B	A	A	A	?	?
borax	A	A	A	A	A	A
boric acid	A	A	A	B	B	A
boron fluorid acid	A	A	A	?	B	A
brake fluid	?	?	?	?	?	A
brandy	?	A	A	B	?	?
Brega crude oil	C	A	?	?	?	?
brine	A	A	A	?	?	?
bromine	C	B	A	C	C	C
bromine benzene	C	C	C	C	C	C
butadiene	C	B	B	C	C	?
butanal (butyraldehyde)	C	B	B	C	C	?
butane, dry	C	C	A	A	C	C
butane, humid	C	A	A	A	C	C
butanoic acid	?	?	?	?	C	A
butanol (butyl alcohol)	B	A	A	?	A	A
butyl acetate	C	B	C	C	C	C
butyl acrylate	C	C	C	C	C	C
calcium bisulfite	C	A	A	A	C	?
calcium chloride	A	A	A	A	B	?
calcium hydroxide	A	A	A	A	A	A
calcium hypochlorite	C	A	A	B	B	?
calcium salts	A	A	A	A	?	?
carbolic acid (phenol)	C	C	C	C	C	C
carbon dioxide, dry	A	A	A	A	C	A
carbon dioxide, wet	A	A	A	A	C	A
carbon disulfide	C	C	C	C	C	?
carbon monoxide	A	A	A	A	B	A
carbon monoxide, hot	?	B	A	B	B	A
carbonic acid	A	A	A	A	B	C
chloroacetic acid	C	B	A	?	B	C
chlorinated solvents	C	C	C	C	?	C
chlorine acetone	A	B	A	A	B	?
chlorine bleaching	A	C	A	?	?	?
chlorine dioxide	C	C	A	?	C	?
chlorine, dry	C	B	A	?	C	C
chlorine, wet	C	B	A	?	C	C
chlorobenzene	C	C	C	C	C	C
chloroform	C	C	C	C	C	C
chloroprene	C	C	C	C	?	?
chlorosulfonic acid	B	B	B	C	?	C
choline	?	A	A	?	?	?
chromic acid	C	C	A	C	B	A

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available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
chromium salts	?	?	?	?	?	A
Circan 21	?	A	A	?	?	?
citric acid	A	A	A	B	B	A
coal gas	?	A	B	B	C	?
coconut oil	C	A	B	B	C	A
cod-liver oil	C	A	A	A	C	A
coke oven gas	A	A	A	C	?	?
copper chloride (50-65 gr/l, T=60°C)	A	A	A	A	B	A
copper salts	A	A	A	A	?	A
copper sulfate	A	A	A	A	?	?
corn oil	C	A	B	B	?	?
cotton seed oil	C	A	C	A	A	?
creosote	C	C	?	C	C	?
creosote oil	C	B	B	C	?	?
cresol	C	B	B	C	C	?
crude oil	C	B	C	C	?	?
cyclohexane	C	C	C	A	C	?
cyclohexanol	B	A	A	C	C	?
cyclohexanone	C	C	C	C	C	?
decahydronaphthaline (Dekalin)	C	C	C	C	?	?
deionised water	A	A	A	A	A	A
dibenzylether	C	C	C	C	C	A
dibutylether	C	C	C	?	C	?
dibutylphthalate	C	C	?	C	C	C
dichlorobenzene	C	C	C	C	C	C
dichlorobutylene	C	C	C	C	?	?
dichloroethylene	C	C	C	C	?	?
dicyclohexylamine	C	B	?	?	?	?
diesel fuel	C	B	B	A	C	C
diethanolamine	A	A	?	C	?	?
diethylamine	A	C	C	C	B	?
diethylether	C	C	C	A	C	?
diethyloxalate	A	C	A	C	?	?
diethylsebacate	B	C	A	C	C	?
diethylsulfate	A	A	A	A	?	?
dimethylacetamide	?	?	?	?	?	A
dimethylaniline	C	C	C	C	?	?
dimethylether	C	B	B	C	C	?
dimethylformamide	B	B	B	B	?	?
dioctylphthalate	C	C	?	A	C	C
dioxane	C	C	C	C	?	?
dioxolane	?	B	?	?	?	?
dipentene	C	B	C	B	?	?
diphenyl	C	C	?	C	?	?
diphenyloxide	C	C	?	C	?	?
Donax T6	?	A	A	?	C	?
effluents *	A	A	A	A	A	A
Elaol FR	?	A	A	?	?	?
essential oils	C	C	B	C	?	C
ethane	C	A	B	A	C	?
ethanolamines	B	B	A	B	B	?
ether	C	B	B	C	C	C
ethyl acetate	C	B	C	C	B	C
ethyl alcohol	A	A	A	A	A	A
ethyl benzene	C	C	C	C	C	?

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available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
ethyl bromide	B	C	C	C	C	?
ethyl cellulose	A	A	A	A	?	?
ethyl chloride	C	C	C	A	C	?
ethyl chloride	C	C	C	A	C	C
ethyl diamine	C	A	A	C	?	?
ethyl mercaptan	C	B	?	C	C	?
ethylene	C	A	A	A	?	?
ethylene glycol	A	A	A	A	B	A
fatty acids	C	A	B	A	C	?
Feboclean UV (Böttcher)	?	A	A	?	?	?
fir oil	C	B	B	B	?	?
fluorobenzene	C	C	C	C	C	?
fluoroborate salts	?	?	?	?	?	A
fluosilicon acid	?	?	?	?	B	?
formaldehyde (40 %, 25° C)	C	A	A	A	A	A
formaldehyde (40 %, 70° C)	C	C	C	?	A	A
formalin < 40°C	?	A	?	?	?	?
formalin > 40°C	?	A	?	?	?	?
formamide, pure	A	A	A	A	?	A
formic acid	B	A	C	B	B	A
formwork oil	C	A	B	A	C	C
Frigen (Freon) 11	A	A	B	B	C	C
Frigen (Freon) 113	?	A	?	?	?	C
Frigen (Freon) 12	A	A	A	A	C	C
Frigen (Freon) 14	A	A	A	?	?	C
Frigen (Freon) 21	A	A	C	B	C	C
Frigen (Freon) 22	?	C	C	B	C	C
fuel oil	C	B	B	B	C	A
fumes	A	A	A	B	?	?
furan	C	C	?	C	?	?
furfural	C	B	B	C	?	A
gear oil	C	B	B	B	C	?
gelatine	A	A	A	A	B	A
glacial acetic acid	C	C	C	B	B	?
glucose	A	A	A	A	B	A
glycerin	A	A	A	A	A	A
glycol	A	A	?	A	B	A
halogenated solvents				?	C	C
heptane	C	A	A	A	C	?
hexamethyldisilacane (HMD)	C	B	A	?	?	?
hexane	C	A	A	A	C	?
Hydran 21	?	A	A	?	?	?
Hydran 25	?	A	A	?	?	?
hydraulic fluid	?	?	?	?	?	?
hydrochloric acid < 65° C	A	A	A	C	A	A
hydrochloric acid > 65° C	C	B	A	C	A	A
hydrochloric acid, conc.	A	A	?	C	A	A
hydrocyanic acid	?	?	?	?	B	A
hydrocyanic acid	A	A	A	B	A	?
hydrofluoric acid < 30°C	B	B	A	C	B	?
hydrofluoric acid > 40°C	?	?	B	?	?	?
hydrofluosilicic acid	A	A	A	A	?	?
hydrogen bromide	A	A	A	B	?	A
hydrogen fluoride	B	B	A	C	?	?
hydrogen fluoride < 65 %, cold	B	A	A	C	?	?

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available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
hydrogen fluoride < 65 %, hot	B	B	A	C	B	?
hydrogen fluoride > 65 %, cold	B	B	A	C	?	?
hydrogen fluoride > 65 %, hot	B	B	A	C	B	?
hydrogen peroxide	C	B	A	B	?	?
hydrogen sulfide, cold	A	A	A	A	?	A
hydrogen sulfide, hot	B	B	A	B	?	A
hydrogen, cold	A	A	A	A	B	A
hydrogen, hot	?	A	A	A	?	A
iodine	?	?	?	?	C	A
iodine solution	?	?	?	?	?	?
iodine tincture	C	B	A	C	?	?
iron chloride	A	A	A	A	B	A
iron nitrate	A	A	A	A	B	?
iron(III)chloride-sulfate (KRONOS, Ferrifloc)	A	A	A	B	A	?
iron sulfate	A	A	A	A	B	?
isobutyl alcohol	A	A	A	B	B	A
isocyanates	C	C	C	?	?	?
isodecane	C	A	A	C	?	?
isooctane	C	A	A	C	C	C
isopropylacetate	C	B	C	C	C	?
isopropylchloride	C	C	C	C	C	A
isopropylether	C	B	B	?	C	?
kerosene	C	B	C	B	C	?
lactic acid, cold	C	A	A	B	?	A
lactic acid, hot	C	A	A	B	?	C
landfill gas condensate	A	A	A	?	?	?
lard	C	A	A	A	A	?
lead acetate	A	A	A	A	?	A
lead nitrate	A	A	A	?	?	A
lead sulfate	A	A	A	?	A	A
lecithin	?	?	?	?	?	A
linseed oil	C	A	A	A	B	?
lithium base grease	?	?	?	?	?	A
lubricating oils	C	B	B	A	?	A
magnesium chloride	A	A	A	A	B	A
magnesium hydroxide	A	A	A	A	B	A
magnesium salts	A	A	A	A	B	A
magnesium sulfate	A	A	A	A	B	?
maleic acid	A	A	A	?	?	?
maleic acid anhydride	A	A	A	?	?	?
malic acid	A	A	A	A	A	A
manganese salts	?	?	?	?	A	A
mercury	A	A	A	A	B	A
mercury chloride	A	A	A	A	A	A
methacrylates monomers	C	?	?	C	?	?
methanol	A	A	A	A	A	A
methyglycolacetate	C	C	B	C	?	?
methyl ethyl ketone (MEK)	C	C	C	C	C	C
methyl isobutyl ketone	C	C	C	C	C	C
methyl methacrylate	C	C	?	C	C	?
methyl pyrrolidone	C	C	C	C	?	?
methyl salicylate	C	C	?	C	?	?
methylene chloride	C	C	C	C	C	C
milk	A	A	A	A	C	A
milk of lime	A	A	A	A	A	A

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available for the following series:	PX • PX/2 PD • PD/2 PA • PK	PX • PX/2	PX • PX/2	PK	PK	PDX PDX/2 PAX
mineral oils	C	B	?	A	C	C
motor oils	C	B	B	A	B	C
mustard	A	A	A	A	?	?
NALCO 71606 (flocculant)	C	C	C	C	C	C
naphtha	C	A	B	A	A	C
naphthaline	C	C	C	C	C	?
Naphtolen ZD	?	B	B	C	?	?
natural gas	?	?	?	?	?	A
natural rubber, liquid	C	?	B	A	?	?
nickel chloride	A	A	A	A	B	?
nickel salts	A	A	A	A	B	A
nickel sulfate	A	A	A	A	B	?
nitric acid, diluted 10 %	C	B	A	C	?	A
nitro ethane	?	?	?	?	C	?
nitrobenzene	C	C	C	C	B	C
nitrogen oxides	?	?	?	?	?	A
nitrohydrochloric acid (aqua regia)	C	C	A	C	?	?
nitrous acid 30 %	?	?	?	?	?	C
nitrous acid 70 %	?	?	?	?	?	C
o-chloronaphthalin	C	C	C	C	?	?
oleic acid	C	A	A	A	A	C
olive oil	C	A	?	A	C	?
oxalic acid	A	A	A	A	C	A
oxygen, cold	A	A	A	C	A	A
ozone	?	A	A	C	C	A
palmitic acid	C	B	B	A	A	A
Pentosin- Super Fluid	?	A	A	?	?	?
perchloroethylene, 50° C	C	C	C	C	?	C
petroleum	C	A	B	A	A	C
petroleum ether	?	A	B	A	A	?
phenol	C	C	C	C	C	C
phenol from tar (Tectal)	C	C	C	C	?	?
phenyl benzene	C	C	C	C	A	?
phenyl ethylether	C	B	C	C	?	?
phenyl hydrazine	C	C	B	C	C	?
phosphor trichloride	C	C	C	C	B	?
phosphoric acid, 98%	C	C	B	C	B	?
phthalic acid	?	?	?	?	?	A
phthalis acid anhydride	?	A	?	A	B	?
picric acid	A	A	A	C	A	A
polyetherpolyol	?	A	A	A	?	?
polypropylene glycol (BASF Pluriol P 2000)	B	A	A	?	?	?
potassium chloride	A	A	A	A	B	A
potassium cyanide	B	A	A	A	A	A
potassium dichromate	A	A	A	A	B	A
potassium hydroxide (caustic potash)	A	A	A	B	B	A
potassium sulfate	A	A	A	A	B	?
Praestol 0,25%	C	A	A	?	?	?
Praestol 2540 TR (Stockhausen)	A	A	A	?	?	A
Praestol K233L (Stockhausen)	C	C	A	A	C	C
propane	C	A	B	A	B	?
propanol (propyl alcohol), room temperature	A	A	A	B	A	B
propanol (propyl alcohol), 50° C	B	B	?	C	A	B
pyridine	?	?	?	?	?	C
propionitrile	C	B	B	A	?	?

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rape oil	C	C	C	A	B	A
Reiflock E34F (Flockungshilfsmittel)	?	?	?	?	?	C
resin (UV curing)	B	B	A	?	?	?
ricinus oil (caster oil)	C	A	B	C	C	A
salicylic acid	A	A	A	B	B	A
Sedipur 9855	C	C	A	C	C	C
Shell Tellus DO 46 (hydraulic oil)	C	A	?	B	?	?
silicic acid	?	?	?	?	A	?
silicic acid tetra ethyl ester	B	A	A	A	?	?
silver nitrate	A	A	A	A	B	A
Skydrol 500 B (60° C)	?	C	C	?	B	A
soap sud	A	A	A	A	B	A
sodium aluminate (Alufinish - Alfinat 25)	A	A	A	A	A	?
sodium carbonate	A	A	A	A	?	A
sodium chloride	A	A	A	A	A	A
sodium cyanide	A	A	A	A	?	A
sodium dichromate	A	A	A	A	?	A
sodium hydroxide (caustic soda)	A	A	A	B	?	B
sodium hydroxide solution 10 %	A	A	A	B	A	?
sodium hydroxide solution 25 %	A	A	A	B	A	?
sodium hydroxide solution 50 %	C	?	A	?	?	?
sodium hypochlorite	C	C	A	?	A	?
sodium nitrate	A	A	A	B	?	A
sodium phosphate	A	A	A	A	B	A
sodium silicate	A	A	A	A	B	A
sodium sulfate	A	A	A	A	B	A
sodium sulfide	A	A	A	A	B	A
sodium thiosulfate	A	A	A	A	A	A
Solvenon PM	?	?	B	?	B	B
solvent naphtha	C	C	C	?	?	?
solvent naphtha K30	C	C	C	?	?	?
soy bean oil	C	C	C	A	C	?
spindle oil	C	B	B	A	?	?
spirits of turpentine	C	C	C	B	?	?
stearic acid	C	B	B	B	B	A
styrene	C	C	C	C	C	C
suger-beet juice	A	A	A	A	?	?
sulfur dioxide	B	C	A	C	B	A
sulfur trioxide	C	A	A	C	C	A
sulfuric acid 10 %	A	A	A	A	?	A
sulfuric acid 25 %	A	A	A	C	A	A
sulfuric acid 50 %	A	A	A	C	A	A
sulfuric acid 75 %	C	C	A	C	C	A
sulfuric acid 96 %	C	C	C	C	C	A
sulfuric acid 98 %	C	C	C	C	C	C
sulfuric acid, conc.	C	C	A	C	C	A
sulfuric acid, fuming	C	C	A	C	?	?
sulfurous acid	B	A	A	C	B	A
sun flower oil	C	C	A	?	?	A
synthetic oils	C	?	?	?	?	C
tannic acid	A	A	A	A	B	A
tannin extracts	?	?	?	?	C	?
tar	C	A	C	C	?	?
tartaric acid	A	A	A	A	A	?
Tellusöl T 17	?	A	?	?	?	?

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tetrachloroethylene	C	C	C	C	C	?
tetrachloromethane	C	C	C	C	C	?
tetrahydrofurane	C	C	C	C	C	C
thioglycolic acid	C	B	A	?	?	?
thiophosphorychloride	C	C	C	?	?	?
tin chloride	A	A	A	A	B	A
toluene	C	C	C	C	C	C
tributylphosphate	B	C	A	C	B	?
trichloroethylene	C	C	C	C	C	C
triethanolamine	B	B	A	B	C	?
triethylamine	?	?	?	?	?	B
triethylene glycol	A	?	?	?	?	?
trisodium phosphate	?	?	?	?	C	?
Tritan 21	?	A	A	?	?	?
turpentine	C	C	B	B	C	A
urea	A	B	A	?	A	A
uric acid	?	?	?	?	?	A
vegetable fat	C	A	A	?	?	?
vegetable oils	C	A	B	B	C	A
vinegar	B	A	A	B	?	A
vinyl acetate	C	C	C	?	A	?
waster water *	A	A	A	A	A	A
wood oil	C	B	B	B	C	A
wool grease	C	A	A	B	?	?
xylene	C	C	C	C	C	C
zinc chloride	A	A	A	B	B	?
zinc salts	A	A	A	A	B	A
zinc sulfate	A	A	A	A	B	?

\* The resistance can vary depending on the chemical composition of the pumping medium.

### **Important note:**

This list was compiled on the basis of own tests, but as well on the basis of information of different manufacturers and users e.g. of the chemical and rubber processing industry and is not exhaustive. We do not assume any liability for potentially incorrect entries caused by misinformation, errata etc. Furthermore the chemical resistance of pump hoses is affected by factors like temperature, pressure, length of contact and flow rate as well as the varying mechanical load caused by the flexing work of the pumps (e.g. at different pump speeds). Because of this the resistance can vary in different applications. Hence this list should only be considered as a noncommittal guideline, in case of doubt the **PONNDORF Gerätetechnik GmbH** should be contacted directly!

#### **Legend:**

A = resistant  
B = conditionally resistant  
C = not resistant  
? = resistance unknown