

CHEMICAL RESISTANCE

Polypropylene is one of the polymers with highest chemical resistance. The chemical resistance of pipes and fittings made of Polypropylene Random Copolymer according to the German Standard DIN 8078 is given in the following table. Chemical resistance is dependent on the kind of chemical, its composition, concentration, temperature and the duration of exposure. Therefore, the table includes the chemicals concentrations and resistance at three different temperatures.

Chemical resistance is presented in the following four groups:

- Resistive
- ◐ Limited resistance
- Nonresistive
- Insufficient information

The following symbols describe the chemicals concentration:

VL: Diluted (mass ratio $\leq 10\%$)

L: Diluted (mass ratio $> 10\%$)

GL: Saturated dilution at 20°C

H: Commercial grade

TR: Technically pure

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
ACETALDEHYDE	RARE	○	○	○
ACETALDEHYDE	TR	●	—	—
ACETEPHENON	TR	●	●	—
ACETIC ACID ANHYDRIDE	TR	●	—	—
ACETIC ACID, DILUTED	TR	●	●	○
ACETIC ACID, DILUTED	40%	●	●	—
ACETONE	TR	●	—	—
ACID-ACETANHYDRIDE	40%	●	●	—
ACRILONITRILE	TR	●	●	—
ADIPIC ACID	TR	●	●	—
AIR	TR	●	●	●
ALAUNE ME - ME III SULPHATE	GL	●	●	—
ALLYL ALCOHOL, DILUTED	96%	●	●	—
ALUM	GL	●	●	—
ALUMINIUM CHLORIDE	GL	●	●	—
ALUMINIUM SULPHATE	GL	●	●	—
AMBER ACID	GL	●	●	—
2-AMINO-ETHANOL	TR	●	—	—
AMMONIA, GAS	TR	●	●	—
AMMONIA, LIQUID	TR	●	●	—
ANILIN	TR	●	—	—
AMMONIA, WATER	GL	●	●	—
AMMONIUM ACETATE	GL	●	●	—
AMMONIUM CARBONATE	GL	●	●	—
AMMONIUM CHLORIDE	GL	●	●	—
AMMONIUM FLORIDE	L	●	●	—
AMMONIUM NITRATE	GL	●	●	●
AMMONIUM PHOSPHATE	GL	●	●	●
AMMONIUM SULPHATE	GL	●	●	●

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
AMYL ACETATE	TR	●	—	—
AMYL ALCOHOL	TR	●	●	●
ANILINE	TR	●	●	—
ANILIN HYDROCHLORIDE	GL	●	●	—
ANON	TR	●	●	—
ANON (CYCLOHEXANONE)	TR	●	●	○
ANTIFREEZE	H	●	○	●
ANTIMONYTRICHLORIDE	90%	●	●	—
APPLE ACID	L	●	●	—
APPLE ACID	GL	●	●	—
APPLE WINE (ORTHO)	H	●	●	—
AQUA REGIA	H	●	●	●
ARSENIC ACID	40%	●	●	—
ARSENIC ACID	80%	●	●	●
BARIUM HYDROXIDE	GL	●	●	●
BARIUM SALTS	GL	●	●	●
BATTERY ACID	H	●	●	—
BEER	H	●	●	●
BENZALDEHYDE	GL	●	●	—
BENZINE - BENZOL MIXTURE	8090/2090	●	○	○
BENZOL	TR	●	○	○
BENZIL CHLORIDE	TR	●	—	—
BORAX	L	●	●	—
BORIC ACID	GL	●	●	●
BROMINE	TR	○	○	○
BROMINE VAPOURS	ALL	●	○	○
BUTADIENE, GAS	TR	●	○	○
BUTANE (2)DIOL(1,4)	TR	●	●	—
BUTANEDIOL	TR	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
BUTANETRIOL(1,2,4)	TR	●	●	—
BUTIN(2)DIOL(1,4)	TR	●	—	—
BUTYL ACETATE	TR	◐	○	○
BUTYL ALCOHOL	TR	●	◐	◐
BUTYL PHENOL	GL	●	—	—
BUTYL PHENON	TR	◐	—	—
BUTYLENE GLYCOL	10%	●	●	●
BUTYLENE GLYCOL	TR	●	●	●
BUTYLENE, LIQUID	TR	●	●	●
CALCIUM CABONATE	GL	●	—	—
CALCIUM CHLORIDE	GL	●	●	—
CALCIUM HYDROXIDE	GL	●	—	—
CALCIUM HYPOCHLORITE	L	●	●	—
CALCIUM NITRATE	GL	●	●	—
CARBOLINE	H	●	●	—
CARBON DIOXIDE, GAS	ALL	●	●	—
CARBONDIOXIDE, LIQUID	ALL	○	○	○
CARBONHYDRIDE	RARE	●	●	●
CARBONIMONOXIDE	ALL	●	●	—
CARBONSULPHIDE	TR	●	—	—
CAUSTIC SODA	60%	●	●	—
CHLORAL	TR	●	◐	○
CHLORAMINE	L	●	◐	○
CHLORETHANOL	TR	●	○	○
CHLORIC ACID	1%	◐	—	—
CHLORIC ACID	10%	○	○	○
CHLORIC ACID	20%	◐	○	○
CHLORINE	0.5%	○	○	○
CHLORINE	1%	○	○	○

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
CHLORINE	GL	◐	○	○
CHLORINE, GAS	TR	○	○	○
CHLORINE, WATER	TR	○	○	○
CHLOROACETIC ACID	L	●	●	—
CHLOROBENZOL	TR	◐	—	—
CHLOROFORM	TR	◐	○	○
CHLOR SULPHON ACID	TR	○	○	○
CHROMIC ACID	40%	◐	◐	○
CHROMIC ACID/SULPHURIC ACID/WATER	15/35/50%	○	○	○
CHROTONIC ALDEHYDE	TR	●	—	—
CITRIC ACID	VL	●	●	●
CITRIC ACID	VL	●	●	●
CITY GAS	H	●	—	—
COCONUT FAT ALCOHOL	TR	●	◐	—
COCONUT OIL	TR	●	—	—
COGNAC	H	●	●	—
COPPER(II)CHLORIDE	GL	●	●	—
COPPER(I)CYANIDE	GL	●	●	—
COPPER(III) NITRATE	30%	●	●	●
COPPER SULPHATE	GL	●	●	—
CORN OIL	TR	●	◐	—
COTTON OIL	TR	●	●	—
CRESOL	90%	●	●	—
CRESOL	>90%	●	—	—
CYCLOHEXANE	TR	●	—	—
CYCLOHEXANOL	TR	●	◐	—
CYCLOHEXANONE	TR	◐	○	○
DEXTRINE	L	●	●	—
DEXTRINE	L	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
DEXTROSE	20%	●	●	●
1,2 DIAMINOETHAN	TR	●	●	—
DICHLORO ACETIC ACID	TR	○	—	—
DICHLORO ACETIC ACID	50%	●	●	—
DICHLORO BENZENE	TR	○	—	—
DICHLORO ETHYLENE (1,1-1,2)	TR	○	—	—
DIESEL OIL	H	●	○	—
DIETHYL AMINE	TR	●	—	—
DIETHYL ETHER	TR	●	○	—
DIGLYCOLIC ACID	GL	●	●	—
DIHEXYL PHATALATE	TR	●	○	—
DI-ISO OCTYLPHATALATE	TR	●	○	—
D-ISO PROPYLETHER	TR	○	○	—
DIMETHYFORMAMIDE	TR	●	●	—
DYMETHYL AMINE	100%	●	—	—
DI-N BUTYL ETHER	TR	○	—	—
DINONYL PHATALATE	TR	●	○	—
DIOCTYL PHATALATE	TR	●	○	—
DIOXANE	TR	○	○	—
DRINKING WATER	TR	●	●	●
ETHANOL	L	●	—	—
ETHANOL+2% TOLUENE	96%	●	—	—
ETHYL ACETATE	TR	●	○	○
ETHYL ALCOHOL	TR	●	●	●
ETHYL BENZOL	TR	○	○	○
ETHYL CHLORIDE	TR	○	○	○
ETHYLENE DIAMINE	TR	●	●	—
ETHYLENE GLYCOL	TR	●	●	●
ETHYLENE OXIDE	TR	○	—	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
FATTY ACID	20%	●	—	—
FATTY ACIDS>C4	TR	●	○	—
FERMENTATION MALT	H	●	●	—
FERTILIZER SALTS	GL	●	●	—
FILM BATH	H	●	●	—
FLUORINE	TR	○	—	—
FLUOSILICIC ACID	32%	●	●	—
FORMALDEHYDE	40%	●	●	—
FORMIC ACID	10%	●	●	○
FORMIC ACID	85%	●	○	○
FRUCTOSE	L	●	●	●
FRUIT WUICES	H	●	●	●
FURFURYL ALCOHOL	TR	●	○	—
GELATINE	L	●	●	●
GLUCOSE	20%	●	●	●
GLYCERINE	TR	●	●	●
GLYCOLIC ACID	30%	●	○	—
GREASE	H	○	—	—
HCL/HNO3	75/25%	○	○	○
HEPTANE	TR	●	○	○
HEXANE	TR	●	○	—
HEXANETRIOL (1,2,6)	TR	●	●	—
HYDRAZINE HUDRATE	TR	●	—	—
HYDROBROMINE ACID	48%	●	○	○
HYDROCHLORIC ACID	20%	●	●	—
HYDROCHLORIC ACID	20-36%	●	○	○
HYDROFLUORIC ACID	40%	●	●	—
HYDROFLUORIC ACID	70%	●	○	—
HYDROGEN	TR	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
HYDROGEN CHLORIDE	TR	●	●	—
HYDRGEN PROXIDE	30%	●	●	—
HYDROSYANIC ACID	TR	●	●	—
HYDROXYLAMMONIUM SULFATE	12%	●	●	—
IODINE SOLUTION	H	●	●	—
ISOOCTANE	TR	●	●	○
ISOPROPYL	TR	●	●	●
KEROSEN	H	●	●	○
LASTIC ACID	90%	●	●	—
LANOLIN	H	●	●	—
LEAD ACETATE	GL	●	●	○
LINSEED OIL	H	●	●	●
LUBRICATING OILS	TR	●	●	○
MAGNESIUM CHLORIDE	GL	●	●	●
MAGNESIUM HYDROCARBONATE	GL	●	○	○
MAGNESIUM SALTS	GL	●	●	—
MAGNESIUM SULPHATE	GL	●	●	●
MENTHOL	TR	●	●	—
METHANOL	TR	●	●	—
METHANOL	5%	●	●	●
METHYL ACETATE	TR	●	●	—
METHYL AMINE	32%	●	—	—
METHYL BROMIDE	TR	○	○	○
METHYL CHLORIDE	TR	○	○	○
METHYL ETHYL KETONE	TR	●	●	—
MERCURY	TR	●	●	—
MERCURY SALTS	GL	●	●	—
MILK	H	●	●	●
MINERAL WATER	H	●	●	●

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
MOLASSES	H	●	●	●
MOTOR OIL	TR	●	●	—
NATURAL GAS	TR	●	—	—
NICKEL SALTS	GL	●	●	—
NITRIC ACID	10%	●	●	○
NITRIC ACID	10-50%	●	○	○
NITRIC ACID	>50%	○	○	○
2-NITROTOLUEN	TR	●	●	—
NITROYUS GASES	ALL	●	●	—
OLEUM(H2SO4+SO3)	TR	○	○	○
OLIVE OIL	TR	●	●	●
OXALIC ACID	GL	●	●	○
OXYGEN	TR	●	—	—
OZONE	0,5PPM	●	●	—
PARAFFIN EMULSIONS	H	●	●	—
PARAFFIN OIL	TR	●	●	○
PERCHLORIC ACID	20%	●	●	—
PERCHLOROETHYLENE	TR	—	●	—
PETROLEUM	TR	●	●	—
PETROLEUM ETHER	TR	●	●	—
PHENOL	5%	●	●	—
PHENOL	90%	●	—	—
PHENYL HYDRAZINE	TR	●	●	—
PHENYL HYDRAZINE HYDROCHLORIDE	TR	●	●	—
PHOSGENE	TR	●	●	—
PHOSPHATES	GL	●	●	—
PHOSPHORIC ACID	85%	●	●	●
PHOSPHORUS OXYCHLORIDE	TR	●	—	—
PHTHALIC ACID	GL	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
PHOTO EMULSIONS	H	●	●	—
PHOTO FIXING BATHS	H	●	●	—
PICRIC ACID	GL	●	—	—
POTASSIUM BICHROMATE	GL	●	●	—
POTASSIUM BROMATE	10%	●	●	—
POTASSIUM BROMIDE	GL	●	●	—
POTASSIUM CARBONATE	GL	●	●	—
POTASSIUM CHLORATE	GL	●	●	—
POTASSIUM CHLORIDE	GL	●	●	—
POTASSIUM CHROMATE	GL	●	●	—
POTASSIUM CYANIDE	L	●	●	—
POTASSIUM FLUORIDE	GL	●	●	—
POTASSIUM HYDROGEN CARBONATE	GL	●	●	—
POTASSIUM HYDROXIDE	50%	●	●	●
POTASSIUM IODIDE	GL	●	●	—
POTASSIUM NITRATE	GL	●	●	—
POTASSIUM PERCHLORATE	10%	●	●	—
POTASSIUM PERMANGANATE	GL	●	○	—
POTASSIUM PERSULFATE	GL	●	●	—
POTASSIUM SULFATE	GL	●	●	—
PROPANE, GAS	TR	●	—	—
PROPANOL (I)	TR	●	●	—
PROPARGYL ALCOHOL	7%	●	●	—
PROPIONIC ACID	>50%	●	—	—
PROPYLENE GLYCOL	TR	●	●	—
PYRIDIN	TR	●	●	—
SEAWATER, BRINE	H	●	●	●
SILICIC ACID	All	●	●	—
SILICO FLUORIC ACID	32%	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
SILICO FLUORIC ACID	32%	●	●	—
SILICONE EMULSION	H	●	●	—
SILICONE OIL	TR	●	●	●
SILVER NITRATE	GL	●	●	●
SILVER SALTS	GL	●	●	—
SODIUM ACETATE	GL	●	●	●
SODIUM BENZOATE	35%	●	●	—
SODIUM BICARBONATE	GL	●	●	●
SODIUM BISULPHATE	GL	●	●	—
SODIUM BISULPHITE	L	●	—	—
SODIUM CARBONATE	50%	●	●	●
SODIUM CHLORATE	GL	●	●	—
SODIUM CHLORIDE	VL	●	●	●
SODIUM CHLORITE	VL	●	●	●
SODIUM CHLORITE	2-20%	●	●	○
SODIUM CHROMATE	GL	●	●	●
SODIUM HYDROX	60%	●	●	●
SODIUM HYPOCHLORIDE	20%	○	○	○
SODIUM HYPOCHLORITE	10%	●	—	—
SODIUM HYPOCHLORITE	20%	●	●	○
SODIUM NITRATE	GL	●	●	—
SODIUM SILICATE	L	●	●	—
SODIUM SULPHATE	GL	●	●	—
SODIUM SULPHIDE	GL	●	●	—
SODIUM SULPHIDE	40%	●	●	●
SODIUM THIOSULPHATE	GL	●	●	—
SODIUM TRIPHOSPHATE	GL	●	●	●
SAYABEAN OIL	TR	●	●	—
STRACH SOLUTION	All	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
STRACH SYRUP	All	●	●	—
SULPHURDIOXIDE	All	●	●	—
SULPHURDIOXIDE, GAS	TR	●	●	—
SULPHURDIOXIDE, LIQUID	All	●	●	—
SULPHURIC ACID	10%	●	●	●
SULPHURIC ACID	10-80%	●	●	—
SULPHURIC ACID	80%-TR	○	○	—
SULPHURIC ACID		○	○	○
SULPHURIC ACID	All	●	●	—
SULPHUR TRIOXIDE	All	●	●	—
TAR OIL	H	●	○	○
TETRACHLOROETHANONE	TR	○	○	○
TETRACHLOROETHYLENE	TR	○	○	—
TETRACHLOROMETHANE	TR	○	○	○
TETRAETHYL LEAD	TR	●	—	—
TETRAHYDROFURANE	TR	○	○	○
TETRAHYDRONAPHATALENE	TR	○	○	○
THIONYL CHLORIDE	TR	○	○	○
TIN (II) CHLORIDE	GL	●	●	—
TIN (IV) CHLORIDE	GL	●	●	—
TOULENE	TR	○	○	○
TRICHLOROETHYLENE	TR	○	○	○
TRICHLORO ASETIC ACID	50%	●	●	—
TRICRESYL PHOSPHATE	TR	●	○	—
TRIETHANOLAMIN	L	●	—	—
WINEVINEGAR	H	●	●	●
XYLENE	TR	○	○	○
YEAST	ALL	●	—	—
ZINK	GL	●	●	—

AGRESIVE MEDIA	CONCENTRATION	CHEMICAL RESISTANCE		
		20°C	60°C	100°C
TRIOCTYL PHOSPHATE	TR	●	—	—
UREA	GL	●	●	—
VASELINE OIL	TR	●	○	—
VINEGAR	H	●	●	●
VINYL ACETATE	TR	●	○	—
WASHING POWDER	VL	●	●	—
WASTE GASES CONTAINING HYDROGEN FLUORIDE	RARE	●	●	—
WATER, PURE	H	●	●	●
WAX	H	●	○	—
WINE ACID	10%	●	●	—
WINES	H	●	●	—