

Chemical Resistance of Polyethylene

	Conc. %	20° C	60° C
Chemicals			
A			
Acetic acid (glacial acetic acid)	C.S.	+	+
Acetic acid, a. (c.f. vinegar)	100 50	+	+
Acetic acid butyleste	100	+	0
Acetic anhydride	10	+	+
Acetone	100	+	+
Acetate			
s. Ethyl acetate			
Alum of all types, a.	EA.	+	+
Aluminium salts, a.	EA.	+	+
Ammonia gas	100	+	+
Ammonia, a.	CONC.	+	+
Ammonia, a.	10	+	+
Ammonium acetat, a.	EA.	+	+
Ammonium carbonate, a.	EA.	+	+
Ammonium chloride, a.	EA.	+	+
Ammonium nitrate, a.	EA.	+	+
Ammonium phosphate, a.	EA.	+	+
Ammonium sulfate, a.	EA.	+	+
Amyl alcohol, absolut (Fermentatin amyl alcohol)		+	+
Aniline	10	+	+
B			
Barium salts	EA.	+	+
Benzaldehyde	100	+	+
Benzaldehyde, a.	(0,3) C.S.	+	+
Benzene	100	0	-
Benzoic acid	100	+	+
Benzoic acid, a.	C.S.	+	+
Boric acid	100	+	+
Boric acid, a.	(4,9) C.S.	+	+
Bromine, liquid	100	-	-
Bromine vapours	high	-	-
Bromine vapours	low	0	-
Bromine water	C.S.	-	-
Butane, liquid	100	+	+
Butane, gaseous	100	+	+
n-Butanol	100	+	+
Butyl acetate			
s. acetic acid butyleste			
C			
Calcium chloride, a.	C.S.	+	+
Calcium nitrate, a.	C.S.	+	+
Carbon disulphide	100	0	-
Carbon tetrachloride	100	0	-
Chlorine, liquid	100	-	-
Chlorine, gaseous, humid	10	0	-
Chlorine, gaseous, dry	100	-	-
Chlorine water	C.S.	0	-
Chlorobenzene	100	0	-
Chloroform	100	0	-
Chlorosulphonic acid	100	-	-
Chromic salts (bi- and trivalent), a.	C.S.	+	+
Chromium trioxide, a. (Chromic acid)	C.S. 20	+	+
Citric acid, a.	C.S.	+	+
Copper Salt, a.	C.S.	+	+
Cresol	100	0	-
Cresol, a.	(0,25) C.S.	+	0
Cyclohexane	100	+	X
Cyclohexanol	100	+	+
D			
Dekalin	100	0	-
Diethylether	100	X	-
Dimethylformamide	100	+	+
1,4-Dioxane	100	+	+
Dybutyl Phthalate s. plasticizer			
E			
Ether s. Diethylether			
Ethyl acetate	100	+	0
Ethyl alcohol, undenatured	100	+	+
Ethyl alcohol, a., undenatured	96	+	+
Ethyl benzene	100	0	-

	Conc. %	20° C	60° C
Ethyl chloride	100	0	-
Ethylene chloride	100	0	0
2-ethylhexanol	100	+	+
F			
Formic acid	98	+	+
Formic acid	90	+	+
Formic acid	50	+	+
Formic acid	10	+	+
Formaldehyde, a.	40	+	+
Formaldehyde, a.	40	+	+
Formaldehyde, a.	30	+	+
G			
Glycerine	10	+	+
Glycerine, a.	100	+	+
	high	+	+
Glycol	low	+	+
Glycol, a.	100	+	+
	high	+	+
H			
Heptane	C.S.	+	+
Hexane	100	+	0
Hydrochloric acid	Conc.	+	+
	10	+	+
Hydrofluoric acid	100	+	0
Hydrogen chloride, gaseous (c.f. hydrochloric acid)	100 high	+	0 +
Hydrogen peroxide	90	+	-
	30	+	+
	10	+	+
	3	+	+
Hydrogen sulphide	low	+	+
I			
Iron salt	low	+	+
Isooctane	100	+	+
Isopropyl alcohol	100	+	+
L			
Lactic acid, a.	90	+	+
	50	+	+
M			
Magnesium salts, a.	C.S.	+	+
Mercury	100	+	+
Mercury salts, a.	C.S.	+	+
Methyl ethyl ketone	100	+	+
Methyl alcohol (methanol)	100	+	+
Methyl alcohol, a.	50	+	+
Methylene chloride	100	0	-
Mineral oils s. technical commodities and drugs			
N			
Naphthalene	100	+	0
Nickel salts	C.S.	+	+
Nitric acid	50	0	0
Nitrobenzene	100	X	0
O			
Octane s. Isooctane			
Oleic acid	100	X	0
Oxalic acid	C.S.	+	+
Ozone (<0,5 ppm.)		X	0
P			
Petrol, s. fuels			
Perchlorethylene			
s. Tetrachloroethylene			
Phenol	C.S.	+	+
(aqueous phase)	(ca. 9)		
(phenol phase)	C.S. (ca 70)		
Phosphorus pentoxide	100	+	+
Phosphoric acid	(85) C.S.	+	0
	50	+	+
	10	+	+
Potassium carbonate, a. (potash)	C.S.	+	+
Potassium chlorate, a.	(7,3) C.S.	+	+
Potassium chloride	C.S.	+	+
Potassium dichromate, a.	40	+	+
Potassium hydroxide solution	50	+	+
	25	+	+

	Conc. %	20° C	60° C
Potassium iodide, a.	C.S.	+	+
Potassium nitrate, a.	C.S.	+	+
Potassium permanganate, a.	(6,4) C.S.	+	+
Potassium persulphate, a.	(0,5) C.S.	+	+
Potassium sulphate, a.	C.S.	+	+
Propane, liquid	100	+	
Propane, gaseous	100	+	+
Pyridine	100	+	0
S			
Silver salts	C.S.	+	+
Sodium bisulphate, a.	C.S.	+	+
Sodium carbonate, a.	(5) C.S.	+	+
Sodium carbonate, a.	(5) 10	+	+
Sodium carbonate, a. (Natron)	C.S.	+	+
Sodium chlorate, a.	25	+	+
Sodium chloride, a. (common salt)	C.S.	+	+
Sodium chlorite, a.	5	+	+
Sodium hydroxide (caustic soda)	100	+	+
Sodium hydroxide solution	50	+	+
	25	+	+
	10	+	+
Sodium hypochlorite, a.	5	+	+
Sodium nitrate, a.	C.S.	+	+
Sodium nitrite, a.	C.S.	+	+
Sodium perborate, a.	(1,4) C.S.	+	+
Sodium phosphate, a.	C.S.	+	+
Sodium sulphate, a.	C.S.	+	+
(Glauber's salt)			
Sodium sulphide, a.	C.S.	+	+
Sodium sulphite	C.S.	+	+
Sodium thiosulphate, a. (fixing salt)	C.S.	+	+
	25	+	+
	10	+	+
Stannous chloride	C.S.	+	+
Stearic acid	100	+	+
Sulphur	100	+	+
Sulphur dioxide	low	+	+
Sulphuric acid	96	+	0
	50	+	+
	25	+	+
	10	+	+
Succinic acid	C.S.	+	+
T			
Tartaric acid, a.	C.S.	+	+
Tetrachloroethene	100	0	-
Tetrachloroethylene (Perchloroethylene)	100	0	-
Tetrahydrofurane	100	0	-
Tetralin	100	+	-
Thiophene	100	0	0
Toluol	100	0	-
Trichloroethylene	100	0	-
U			
Urea	low	+	+
W			
Water	100	+	+
X			
Xylene	100	0	-
Z			
Zinc salts, a.	C.S.	+	+

Technical commodities and drugs

	Conc. %	20° C	60° C
A			
Alum	C.S.	+	+
Antifreeze (automotive)		+	X
Aqua regia		-	-
Asphalt		+	0
Astm D 380-59	100	+	0
B			
Battery acid		+	+
Bleaching solution (12,5% effective chlorine)		0	0
Bone oil		+	X
Borax, a.	C.S.	+	+
Brake fluid, a.		+	+
C			
Chlorinated lime (aqueous slurry)		+	+
Chrome bath, techn.		+	+
Chromo-sulphuric acid		-	-
Cresol solution		+	+
D			
Detergent, synthetic	high	+	+

	Conc. %	20° C	60° C
	ready-to-use	+	+
Diesel oil		+	0
Diesel oil s. fuels			
Dixan solution, ready for use		+	+
E			
Engine oils (automotive) (c.f. two-stroke oils and oils according to Astm)"		+	0
F			
Farmalin		+	+
Fixing salt (c.f. sodium thiosulphate)	10	+	+
Floor wax		+	0
Fuels			
Furniture polish		+	0
H			
Heating oils		+	0
Hydrogen peroxide s. chemicals			
I			
Ink		+	+
L			
Lanolin		+	0
Linseed oil		+	+
Litex		+	+
Lysol		+	0
M			
Marlipal MG	50	+	+
Marlon, 42% WAS		+	+
Marlophen 83	100	+	+
Marlophen 89	100	+	+
	20	+	+
	5	+	+
Marlophen 810	100	+	+
	20	+	+
	5	+	+
Marlophen 820	100	+	+
	20	+	+
	5	+	+
Mineral oil (free from aromatic compounds)		+	0
Mothballs		+	
O			
Oleum	EA.	-	-
P			
Paraffin	100	+	+
Paraffin oil	100	+	0
Pectin	C.S.	+	+
Petrol, regular		+	0
Petrol, s. fuels			
Petrol, super		0	-
Petroleum	100	+	0
Petroleum ether	100	+	0
Photographie customary development		+	+
Pine needle oil		+	X
Plasticizer			
Dybutyl Phthalate (Vestinol C)		+	0
Dibutylsebazat		+	0
Dihexylphthalat (Vestinol H)		+	
Dinonyladipat (Vestinol NA)		+	
Dinonylphthalat		+	
Dioktyladipat (Vestinol N)		+	
Dioktyladipat (Vestinol AO)		+	
Dioktylphthalat (Vestinol AH)		+	
Trikesylphosphat		+	+
Trioktylphosphat		+	0
R			
Regular petrol in accordance with DIN 51635			
S			
Sagrotan		+	0
Sea water		+	X
Shoe polish		+	0
Silicone oils		+	+
Soda s. sodium carbonate			
Soft soap		+	+
Spruce needle oil		+	X
Strychnine			
T			
Tar		+	0
Transformer oil		+	0

	Conc. %	20° C	60° C
Turpentine oil		O	-
Two-stroke oil		+	O
Typewriter oil		+	X
W			
Washing-up liquid		+	+
White spirit		+	O
Water glass		+	+

Pharmaceutics and cosmetics

	Conc. %	20° C	60° C
A			
Aspirin		+	+
C			
Camphor		+	
H			
Hair shampoo		+	+
I			
Iodine tincture DAB 6		+	
M			
Menthol		+	
Mercury ointment			
N			
Nail polish		+	O
Nail polish remover		+	O
P			
Perfume		+	
Q			
Quinine		+	
S			
Soap, soap bar		+	+
Soap solution	C.S.	+	+
	10	+	+
Sulphur ointment			
T			
Toothpastes		+	+
V			
Vaseline		+	O

Food and semi-luxuries

	Conc. %	20° C	60° C
A			
Apple juice		+	+
Apple puree		+	+
B			
Beef tallow		+	+
Beer		+	
Bitter almond flavour		+	
Brandy		+	
Butter		+	+
Butter milk		+	
C			
Cake		+	+
Cheese		+	
Cinnamon, Powder		+	
Cinnamon, Sticks		+	
Citric acid s. chemicals		+	
Cloves (Spice)		+	
Cloves oil		+	O
Coca-Cola		+	
Cocoa, ready-to-drink		+	+
Coconut oil		+	X
Cod-liver oil		+	
Coffee (beans and ground)		+	
Coffee, Powder		+	
Coffee, ready-to-drink		+	+
Cooking oil, animal		+	X
Cooking oil, vegetable		+	X
Corn oil		+	X
Cream, whipped cream		+	
E			
Egg (raw and boiled)		+	+
F			
Fish, pickled		+	+
Flour		+	

	Conc. %	20° C	60° C
Fruit juice		+	+
Fruit salad		+	
G			
Gin		+	
Grapefruit juice		+	+
Gravy		+	+
H			
Honey		+	+
Horseradish, ready-to-serve		+	
J			
Jam		+	+
Jelly		+	+
L			
Lard		+	+
Lemon flavour		+	
Lemon juice		+	+
Lemon peel		+	
Lemon peel oil		+	
Lemonades		+	
Linseed oil s. technical commodities and drugs			
Liqueurs		+	
M			
Margarine		+	+
Mashed potatoes		+	+
Mayonnaise		+	
Milk		+	+
Milk-foods		+	+
Mustard		+	
O			
Olive oil		+	+
Orange juice		+	+
Orange peel		+	
Orange peel oil		+	
P			
Palm kernel oil		+	X
Paprika (spice)		+	+
Peanut oil		+	X
Pepper		+	+
Peppermint oil		+	
Pineapple juice		+	+
Potatoe salad		+	
Pudding		+	+
Q			
Quark		+	
R			
Rum		+	+
Rum flavour		+	
S			
Salt water	EA.	+	+
Salt, dry		+	+
Salted herrings		+	
Sauerkraut, ready-to-serve		+	+
Sausage		+	+
Semolina		+	+
Soda water		+	
Soya oil		+	X
Starch, starch solution	EA.	+	+
Sugar beet molasses		+	+
Sugar solution	EA.	+	+
Sugar, dry		+	+
T			
Tea, ready-to-drink		+	+
Tealeaves		+	+
Tomato juice		+	+
Tomato ketchup		+	+
V			
Vanilla		+	+
Vegetables, ready-to-eat		+	+
Vinegar	customary	+	+
Vinegar essence	customary	+	+
W			
Whisky		+	
Wine, Mulled wind		+	+

LEGEND

Resistances:

+ = RESISTANT
X = GOOD RESISTANCE/
SUITABILITY
O = LIMITED RESISTANT

Ø = LOW RESISTANT
- = NOT RESISTANT
D = DISCOLORED
S = SOLUBLE

Concentration:

A. = AQUEOUS SOLUTION
C.S. = COLD SATURATED
EA. = EACH

Temperature:

H.P. (HIGH PRESSURE POLYETHYLENE) FROM -10° TO +60° C
H PE = SOFT AND ELASTIC
B.P. (LOW PRESSURE POLYETHYLENE) FROM -40° TO +80° C
N PE = TOUGH-HARD AND STIFF

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