

## Chemical Performance of PE

### Abbreviations

S Satisfactory Resistance

L Limited Resistance

U Unsatisfactory Resistance

dil.sol. dilute aqueous solution at a concentration equal to or less than 10%

sol. Aqueous solution at a concentration greater than 10% but not saturated

sat.sol. saturated aqueous solution prepared at 20°C

tg-g technical grade, gas

tg-l technical grade, liquid

tg-s technical grade, solid

work.sol. working solution of the concentration usually used in the industry concerned

susp. Suspension of solid in a saturated solution at 20°C

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Acetaldehyde	CH <sub>3</sub> CHO	20	40	S	L
		60		L	U
		20	100	S	L
		60		L	U
Acetic acid  -glacial	CH <sub>3</sub> COOH	20	up to	S	S
		60	10	S	S
		20	40-60	S	S
		60		S	L
		20	60	S	S
		60		S	L
		20	>96	S	L
		60		L	U
Acetic anhydride	(CH <sub>3</sub> CO) <sub>2</sub> O	20	100	S	L
		60		L	U
Acetone	CH <sub>3</sub> COCH <sub>3</sub>	20	100	L	L
		60		L	U
Acetophenone	CH <sub>3</sub> COC <sub>6</sub> H <sub>5</sub>	20			S
		60			S
Acrylonitrile	CH <sub>2</sub> CHCN	20		S	
		60		S	
Adipic acid	(CH <sub>2</sub> CH <sub>2</sub> CO <sub>2</sub> H) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
Air		20		S	S
		60		S	S
Allyl acetate		20		S	
		60		S	
Allyl alcohol	CH <sub>2</sub> CHCH <sub>2</sub> OH	20	96	S	L
		60		S	U
Allyl chloride		20		L	U
		60		U	U
Alum (Aluminium potassium sulphate)	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ·K <sub>2</sub> SO <sub>4</sub> ·nH <sub>2</sub> O	20	sat. sol	S	S
		60		S	S
Aluminium -chloride	AlCl <sub>3</sub>	20	sat. sol	S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Aluminium -fluoride -hydroxide  -nitrate  -oxychloride  -phosphate (meta) -sulphate	AlF <sub>3</sub>	20	susp.	S	S
		60		S	S
	Al(OH) <sub>3</sub>	20	susp.	S	S
		60		S	S
	Al(NO <sub>3</sub> ) <sub>3</sub>	20	sat. sol	S	S
		60		S	S
		20	susp.	S	S
		60		S	S
		20		S	
		60		S	
	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	20	sat. sol	S	S
		60		S	S
Amino acids		20		S	
		60		S	
Ammonia (aqueous) (gaseous)  (liquid)	NH <sub>3</sub>	20	sat. sol	S	S
		60		S	S
		20	100	S	S
		60		S	S
		20	100	S	L
		60		S	L
Ammonium -acetate -bromide  -carbonate  -chloride  -fluoride  -hydrogen carbonate  -hydrosulphide  -hydroxide  -nitrate  -persulphate  -phosphate (dibasic) (meta)  -sulphate  -sulphide	CH <sub>3</sub> COONH <sub>4</sub>	20	sat	S	
		60		S	
	NH <sub>4</sub> Br	20		S	
		60		S	
	(NH <sub>4</sub> ) <sub>2</sub> CO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
	NH <sub>4</sub> Cl	20	sat. sol	S	S
		60		S	S
	NH <sub>4</sub> F	20	up to 20	S	S
		60		S	S
	NH <sub>4</sub> HCO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
		20		S	
		60		S	
	NH <sub>4</sub> (OH)	20		S	S
		60		S	S
	NH <sub>4</sub> NO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
	(NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	20	sat. sol	S	S
		60		S	S
	NH <sub>4</sub> (HPO <sub>4</sub> ) <sub>2</sub>	20		S	
		60		S	
	(NH <sub>4</sub> ) <sub>4</sub> P <sub>4</sub> O <sub>12</sub>	20	sat. sol.	S	S
		60		S	S
	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	20	sat. sol.	S	S
		60		S	S
	(NH <sub>4</sub> ) <sub>2</sub> S	20	sat. sol.	S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance		
				MDPE/HDPE	LDPE	
Ammonium -sulphate -thiocyanate	NH <sub>4</sub> OHSO <sub>4</sub>	20	dil/sat	S		
		60		S		
		20	sat. sol	S	S	
		60		S	S	
Amyl acetate	CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	20	100	S	U	
		60		L	U	
Amyl alcohol	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>2</sub> OH	20	100	S	L	
		60		L	L	
Amyl chloride	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>2</sub> Cl	20	sat. sol	U	U	
		60		U	U	
Aniline  -chlorhydrate	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	20		L	U	
		60		L	U	
	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub> HCl	20		L		
		60		L		
Anthraquinone sulphonic acid		20		S		
		60		S		
Antimony chloride		20		S		
		60		S		
Antimony pentachloride		20		S		
		60		S		
Antimony trichloride	SbCl <sub>3</sub>	20	sat. sol	S	S	
		60		S	S	
Aqua regia	HCl + HNO <sub>3</sub>	20	3:1	U	U	
		60		U	U	
Aromatic acids		20		S		
		60		S		
Aromatic hydrocarboU		20		U	U	
		60		U	U	
Arsenic		20		S		
		60		S		
Arsenic acid	H <sub>3</sub> AsO <sub>4</sub>	20	sat. sol	S	S	
		60		S	S	
Ascorbic acid		20		S	S	
		60		S	S	
Barium -bromide -carbonate  -chloride  -hydroxide  -sulphate  -sulphide  -sulphite	BaBr <sub>2</sub>	20	sat. sol	S	S	
		60		S	S	
	BaCO <sub>3</sub>	20	susp	S	S	
		60		S	S	
	BaCl <sub>2</sub>	20	sat. sol	S	S	
		60		S	S	
	Ba(OH) <sub>2</sub>	20	sat. sol	S	S	
		60		S	S	
	BaSO <sub>4</sub>	20	susp	S	S	
		60		S	S	
	BaS	20	sat. sol	S	S	
		60		S	S	
			20		S	
			60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Beer		20		S	S
		60		S	S
Benzaldehyde	C <sub>6</sub> H <sub>5</sub> CHO	20		S	L
		60		L	U
Benzene	C <sub>6</sub> H <sub>6</sub>	20	100	L	U
		60		L	U
-monochlorine	C <sub>6</sub> H <sub>5</sub> Cl	20		U	
Benzenesulphonic acid		20		S	L
		60		S	L
Benzoic acid	C <sub>6</sub> H <sub>5</sub> COOH	20	sat. sol	S	S
		60		S	S
Benzoyl chloride		20		L	U
		60		L	U
Benzyl alcohol	C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH	20		S	U
		60		L	U
Benzyl chloride		20		L	
		60		U	
Bichromate sulphuric acid		20		S	
		60		U	
Bismuth carbonate		20	sat. sol	S	S
		60		S	S
Bisulphite		20		S	
		60		S	
Borax		20	sat. sol	S	S
		60		S	S
Boric acid	H <sub>3</sub> BO <sub>3</sub>	20	dil/sat	S	S
		60		S	S
-methyl ester		20		S	
		60		L	
Boron trifluoride	BF <sub>3</sub>	20	sat. sol	S	S
		60		S	S
Brine saturated		20		S	S
		60		S	S
Bromic acid	HBrO <sub>3</sub>	20	10	S	S
		60		S	S
Bromine (dry gas) (liquid)	Br <sub>2</sub>	20	100	U	U
		60		U	U
		20	100	U	U
		60		U	U
Bromochloromethane		20		U	
		60		U	
Butadiene	C <sub>4</sub> H <sub>6</sub>	20		U	
		60		U	
Butane	C <sub>4</sub> H <sub>10</sub>	20		S	
		60		S	
Butanediol (aqueous)	CH <sub>3</sub> CH <sub>2</sub> CHOHCH <sub>2</sub> OH	20		L	L
		60		U	L
Butanetriol		20		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
		60		S	
<b>Butanol (butyl alcohol)</b>	C <sub>4</sub> H <sub>9</sub> OH	20	100	S	S
		60		S	L
<b>Butanone</b>		20		S	
		60		L	
<b>Butoxl</b>		20		S	
		60		L	
<b>Butyl acetate</b>	CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	20		L	L
		60		U	U
<b>Butyl acrylate</b>		20		S	
		60		L	
<b>Butyl carbitol</b>		20		S	
		60		L	
<b>Butylene glycol</b>	C <sub>4</sub> H <sub>6</sub> (OH) <sub>2</sub>	20	100	S	
		60		S	
<b>Butylbenzyl phthalate</b>		20		S	
		60		S	
<b>Butyric acid</b>	C <sub>2</sub> H <sub>5</sub> CH <sub>2</sub> COOH	20		S	L
		60		L	L
		20	conc	U	U
		60		U	U
<b>Calcium -bisulphide -bisulphite</b>		20	sol	S	S
		60		S	S
<b>-bromide</b>	CaBr <sub>2</sub>	20		S	
		60		S	
<b>-carbide</b>		20		S	S
		60		S	S
<b>-carbonate</b>	CaCO <sub>3</sub>	20	susp	S	S
		60		S	S
<b>-chlorate</b>	CaCHCl	20	sat. sol.	S	S
		60		S	S
<b>-chloride</b>	CaCl <sub>2</sub>	20	sat. sol.	S	S
		60		S	S
<b>-hydroxide</b>	Ca(OH) <sub>2</sub>	20	sat. sol.	S	S
		60		S	S
<b>-hypochlorite</b>	Ca(OCl) <sub>2</sub>	20	sol	S	S
		60		S	S
<b>-nitrate</b>	Ca(NO <sub>3</sub> ) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
<b>-oxide</b>		20		S	S
		60		S	S
<b>-phosphate</b>		20		S	
		60		S	
<b>-sulphate</b>	CaSO <sub>4</sub>	20	susp	S	S
		60		S	S
<b>-sulphide</b>	CaS	20	dil	L	L
		60		L	L

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Carbazole		20		S	
		60		S	
Carbolic acid		20		S	
		60		S	
Carbolineum		20		S	
		60		L	
Carbon dioxide	CO <sub>2</sub>	20	dry/wet gas	S	S
		60		S	S
Carbon disulphide	CS <sub>2</sub>	20		L	U
		60		U	U
Carbon monoxide	CO	20		S	S
		60		S	S
Carbon tetrachloride	CCl <sub>4</sub>	20		L	U
		60		U	U
Carbonic acid	H <sub>2</sub> CO <sub>3</sub>	20		S	S
		60		S	S
Caustic potash	KOH	20		S	
		60		S	
Caustic soda	NaOH	20	>10	S	S
		60		S	S
Cetyl alcohol		20		S	
		60		S	
Chloral hydrate		20		S	
		60		S	
Chloramine		20		S	
		60		S	
Chloric acid	HClO <sub>3</sub>	20	20	S	
		60		U	
Chlorine (aqueous) (dry gas)	Cl <sub>2</sub>	20	sat. sol	L	U
		60		U	U
		20		L	U
		60		U	U
Chlorine dioxide (dry gas)		20		U	U
		60			
Chlorine methane		20	100	L	L
		60			
Chloroacetic acid	ClCH <sub>2</sub> COH	20	>10	S	U
		60		S	U
-ethyl ester		20		S	
		60		S	
-methyl ester		20		S	
		60		S	
Chlorobenzene		20		U	U
		60		U	U
Chlorocarbonic acid		20		S	
		60		L	
Chloroethanol		20		S	
		60		S	
Chloroethyl phosphate		20		S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Chloroform		20	100	U	U
		60		U	U
Chloromethane		20		L	L
Chloropicrin		20		S	
		60		U	
Chlorosulphonic acid	ClHSO <sub>3</sub>	20	100	U	U
		60		U	U
Chrome alum	KCr(SO <sub>4</sub> ) <sub>2</sub>	20	sol	S	S
		60		S	S
Chrome salts		20		S	
		60		S	
Chromic acid	CrO <sub>3</sub> + H <sub>2</sub> O	20	20	S	S
		60		L	S
		20	50	S	S
		60		L	S
		20	80	S	S
		60		U	S
Chromic solution	CrO <sub>3</sub> + H <sub>2</sub> O + H <sub>2</sub> SO <sub>4</sub>	20	50/35/15	U	
		60		U	
Chromium trioxide		20	50	S	
		60		U	
Chromosulphuric acid		20		S	
		60		U	
Citric acid	C <sub>3</sub> H <sub>4</sub> (OH)(CO <sub>2</sub> H) <sub>3</sub>	20	sat. sol	S	S
		60		S	S
Copper -chloride	CuCl <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-cyanide	CuCN <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-fluoride	CuF <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-sulphate	CuSO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
Cresol	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> OH	20		S	
		60		L	
Cresylic acid	CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> COOH	20	sat. sol	L	
		60			
Crotonaldehyde		20	sat. sol	S	L
		60		L	
Cupric chloride		20		S	S
		60		S	S
Cupric nitrate		20		S	S
		60		S	S
Cupric sulphate		20		S	S
		60		S	S
Cuprous chloride		20		S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Cuprous oxide		20		S	
		60		S	
Cyclanone		20		S	
		60		S	
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	20		U	
		60		U	
Cyclohexanol		20	100	S	L
		60		L	U
Cyclohexanone	C <sub>6</sub> H <sub>10</sub> O	20		S	U
		60		L	U
Cyclohexyl alcohol		20		S	L
		60		S	L
DDT		20		S	
		60		S	
Decahydronaftalene	C <sub>10</sub> H <sub>18</sub>	20		S	
		60		L	
Decalin		20		S	
		60		L	
Dextrin	C <sub>6</sub> H <sub>12</sub> OCH <sub>2</sub> O	20	sol	S	S
		60		S	S
Dextrose		20	sol	S	S
		60		S	S
Diazo salts		20		S	
		60		S	
Dibromoethane		20		L	
		60		U	
Dibutyl ether		20	100	L	U
		60		U	U
Dibutyl phthalate	C <sub>6</sub> H <sub>4</sub> (CO <sub>2</sub> C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	20		L	L
		60		L	L
Dibutyl sebacate		20		S	
		60		L	
Dichloroacetic acid	Cl <sub>2</sub> CHCOOH	20	50	S	
		60		S	
		20	100	S	
		60		L	
Dichloroacetic methyl ester		20		S	
		60		S	
Dichlorobenzene		20		U	U
		60		U	U
Dichloroethane	CH <sub>2</sub> ClCH <sub>2</sub> Cl	20		L	
		60		L	
Dichloroethylene	ClCH <sub>2</sub> Cl	20		U	
		60		U	
Dichloropropane		20		L	
		60		U	
Dichloropropene		20		L	
		60		U	
Diesel oil		20		S	
		60		L	



Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Diethyl ether	C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub>	20	100	U	U
		60		U	U
Diethyl ketone		20		L	L
		60		L	U
Diethylene glycol		20		L	L
		60		L	L
Diethylenetriamine (DETA)		20		S	
		60		S	
Diglycolic acid	(CH <sub>2</sub> ) <sub>2</sub> O(CO <sub>2</sub> H) <sub>2</sub>	20		L	L
		60		L	L
Diisobutyl ketone		20		S	
		60		U	
Diisopropyl ether		20		S	
		60		U	
Dimethylamine	(CH <sub>3</sub> ) <sub>2</sub> NH	20		U	U
		60		U	U
Dimethyl formamide		20	100	S	
		60		L	
Dimethyl sulphoxide		20		S	
		60		S	
Diocetyl phthalate		20		S	L
		60		L	U
Dioxane		20	100	S	L
		60		S	U
Diphenyl oxide		20		S	
		60		L	
Diphenylamine		20		S	
		60		L	
Disodium phosphate		20		S	S
		60		S	S
Disodium sulphate		20		S	
		60		S	
Dodecylbenzenesulphonic acid		20		S	
		60		L	
DOP (di(2-ethylhexyl) phthalate)		20		S	
		60		L	
Emulsifiers		20		S	
		60		S	
Ephetin		20	10	S	
		60		S	
Epichlorohydrin		20		S	
		60		S	
Ethane	C <sub>2</sub> H <sub>6</sub>	20		S	
		60		S	
Ethers		20		L	
		60		L	
Ethanol	CH <sub>3</sub> CH <sub>2</sub> OH	20	40	S	S
		60		L	L
		20	95		L
		60			L

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Ethyl acetate	CH <sub>3</sub> CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub>	20	100	S	L
		60		U	U
Ethyl benzene		20		U	U
		60		U	U
Ethyl butyrate		20			L
		60			U
Ethyl chloride	CH <sub>3</sub> CH <sub>2</sub> Cl	20		U	U
		60		U	U
Ethyl dibromide		20		L	
		60		U	
Ethyl ether	CH <sub>3</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>3</sub>	20		U	U
		60		U	U
Ethylene		20		S	
		60		U	
Ethylene chloride		20		U	U
		60		U	U
Ethylene chlorohydrin	ClCH <sub>2</sub> CH <sub>2</sub> OH	20			U
		60			U
Ethylene dichloride		20		L	U
		60		U	U
Ethylene glycol	HOCH <sub>2</sub> CH <sub>2</sub> OH	20	100	S	S
		60		S	S
Ethylene glycol ethyl		20			S
Ethylene oxide		20		S	
		60		S	
Ethylenediamine		20		S	
		60		S	
Ethylenediaminetetraacetic acid		20		S	
		60		S	
Ethyl hexanol		20		S	
		60		L	
Fatty acids		20		S	
		60		S	
Fatty alcohols		20		S	
		60		L	
Ferric chloride		20	sat.sol	S	S
		60		S	S
-nitrate		20	sat.sol	S	S
		60		S	S
-sulphate		20	sat.sol	S	S
		60		S	S
Ferrous ammonium citrate		20		S	
		60		S	
Ferrous chloride		20	sat.sol	S	S
		60		S	S
Ferrous sulphate		20	sat.sol	S	S
		60		S	S
Fluoboric acid		20		S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Fluorine	F <sub>2</sub>	20	100	U	U
		60		U	U
Fluosilic acid	HSiF <sub>6</sub>	20	40	S	S
		60		S	S
Formaldehyde	HCOH	20	30-40	S	S
		60		S	S
Formamide		20		S	
		60		S	
Formic acid	HCOOH	20	10-85	S	S
		60		S	S
Fructose		20		S	S
		60		S	S
Furfural		20		U	U
		60		U	U
Furfuryl alcohol	C <sub>5</sub> H <sub>3</sub> OCH <sub>2</sub> OH	20	100	S	L
		60		L	U
Gallic acid		20		L	L
		60		L	L
Gas exhaust (w/nitrous vapours)		20		S	
		60		S	
Gasoline (fuel)		20	work.sol	S	L
		60		L	U
Gas phosgene		20	100	L	
		60		L	
Gelatine		20	sol	S	S
		60		S	S
Genantin		20		S	
		60		S	
Glaubers salt		20		S	
		60		S	
Gluconic acid		20	>10	S	S
		60		S	S
Glucose		20	sol	S	S
		60		S	S
Glycerine		20		S	S
		60		S	S
Glycerine chlorhydrin		20		S	
		60		S	
Glycerol		20	100	S	S
		60		S	S
Glycine		20		S	
		60		S	
Glycogluce		20	10	S	
		60		S	
Glycol		20		L	L
		60		L	L
Glycolic acid	HOCH <sub>2</sub> COOH	20	30		S
		60			L
		20	50-70	S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Glycolic acid -butyl ester		20		S	
		60		S	
Glysantin		20		S	
		60		S	
Halothane		20		L	
		60		L	
Heptane	C <sub>7</sub> H <sub>16</sub>	20	100	S	U
		60		U	U
Hexachlorobenzene		20		S	S
		60			S
Hexadecyl alcohol		20		S	
		60		S	
Hexane	C <sub>6</sub> H <sub>14</sub>	20		S	
		60		L	
Hexanetriol		20		S	
		60		S	
Hexyl alcohol		20		L	L
		60		L	L
Hydrazine hydrate		20		S	
		60		S	
Hydrobromic acid	HBr	20	100	S	S
		60		S	S
Hydrochloric acid	HCl	20	up to 25	S	S
		60		S	S
		20	>30	S	S
		60		S	S
		20	conc	S	S
60		S	S		
Hydrocyanic	HCN	20	10	S	S
		60		S	S
Hydrofluoric acid	HF	20	up to 10	S	S
		60		S	S
		20	60	S	S
		60		L	L
Hydrofluosilicic acid		20		S	
		60		S	
Hydrogen	H <sub>2</sub>	20	100	S	S
		60		S	S
Hydrogen bromide		20	10	S	S
		60		S	S
Hydrogen chloride gas		20		S	S
		60		S	S
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	20	up to 10	S	S
		60		S	S
		20	30	S	S
		60		S	L
		20	90	S	S
		60		U	U
Hydrogen phosphide		20		S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Hydrogen sulphide gas		20	100	S	S
		60		S	S
Hydroquinone		20	sat. sol	S	S
		60		S	S
Hydrosulphite		20		S	
		60		S	
Hydroxylamine sulphate		20		S	
		60		S	
Hypochlorous acid		20		S	S
		60		S	S
Iodine (in potassium iodide) (in alcohol)	I <sub>2</sub>	20	sat. sol	U	U
		60		U	U
		20	work sol (in alcohol)	U	U
		60		U	U
Isobutyl acetate		20		L	
Isobutyl alcohol		20		S	
		60		S	
Isooctane	C <sub>8</sub> H <sub>18</sub>	20		S	
		60		L	
Isopropanol		20		S	
		60		S	
Isopropyl acetate		20		S	
		60		L	
Isopropyl alcohol	(CH <sub>3</sub> ) <sub>2</sub> CHOH	20		S	
		60		S	
Isopropyl ether	(CH <sub>3</sub> ) <sub>2</sub> CHOCH(CH <sub>3</sub> ) <sub>2</sub>	20		L	
		60		U	
Kerosine		20		L	
		60		L	
Ketone		20		L	
		60		U	
Labarraques solution		20		S	
Lactic acid	CH <sub>3</sub> CHOHCOOH	20	10-90	S	S
		60		S	S
Lactose		20		S	
		60		S	
Latex		20			L
		60			L
Lead acetate	Pb(CH <sub>3</sub> COO) <sub>2</sub>	20	dil/sat. sol	S	S
		60		S	S
Lead nitrate	PbNO <sub>3</sub>	20		S	S
		60		S	S
Lestoil		20	2	U	
LiUeed oil		60		S	L
		60		S	U
Lithium Bromide		20		S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Magnesium -carbonate -chloride -fluosilicate -hydroxide -iodide -nitrate -sulphate	MgCO <sub>3</sub>	20	susp	S	S
		60		S	S
	MgCl <sub>2</sub>	20	sat. sol	S	S
		60		S	S
		20		S	
		60		S	
	Mg(OH) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
		20		S	
		60		S	
	MgNO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
MgSO <sub>4</sub>	20	sat. sol	S	S	
	60		S	S	
Maleic acid	COOHCHCHOOH	20	sat. sol	S	S
		60		S	S
Malic acid	CH <sub>2</sub> CHOH(COOH) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
Manganese sulphate		20		S	
		60		S	
Menthol		20		S	
		60		L	
Mercuric -chloride -cyanide -nitrate	HgCl <sub>2</sub>	20	sat. sol	S	S
		60		S	S
	HgCN <sub>2</sub>	20	sat. sol	S	S
		60		S	S
HgNO <sub>3</sub>	20	sat. sol	S	S	
	60		S	S	
Mercurous nitrate	HgNO <sub>3</sub>	20		S	S
		60		S	S
Mercury -cyanide	Hg	20	100	S	S
		60		S	S
		20		S	S
		60		S	S
Methacrylate		20		S	
		60		S	
Methacrylic acid		20		S	
		60		S	
Methanol	CH <sub>3</sub> OH	20	100	S	S
		60		S	L
Methoxybutyl alcohol		20		S	
		60		L	
Methyl-2-Pentanone		20		S	
		60		S	
Methyl bromide	CH <sub>3</sub> Br	20		U	
		60		U	
Methyl butanol		20		S	
		60		L	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Methyl chloride	CH <sub>3</sub> Cl	20		L	
		60		U	
Methylene chloride		20		U	U
		60		U	U
Methyl ethyl ketone	CH <sub>3</sub> COCH <sub>2</sub> CH <sub>3</sub>	20		U	U
		60		U	U
Methyl glycol		20		S	
		60		S	
Methyl isobutyl ketone		20		S	
		60		L	
Methyl methacrylate		20		S	
		60		S	
Methyl propyl ketone		20		S	
		60		L	
Methyl salicylate		20		S	
		60		L	
Methyl sulphate		20		S	
		60		S	
Methyl sulphuric acid	CH <sub>3</sub> COOSO <sub>4</sub>	20	50	L	
		60		L	
		20	100	U	
		60		U	
Methyl sulphuric acid		20		S	L
		60		S	L
Methylamine	CH <sub>3</sub> NH <sub>2</sub>	20	32	S	
		60		L	
Methylbenzene		20	L		
		60	U		
Methylcyclohexane		20	U		
		60	U		
Methylpyrrolidone		20	S		
		60	S		
Mineral oils		20	work. sol	S	L
		60		L	U
Mineral spirits (white spirits)		20		S	
		60		S	
Molasses		20	work. sol	S	S
		60		S	S
Monochloroacetic acid		20		S	
		60		S	
Monochloroacetic ethyl ester		20		S	
		60		S	
Monochloroacetic methyl ester		20		S	
		60		S	
Morpholine		20		S	
		60		S	
Mowilith		20		S	
		60		S	
Naptha		20		L	L
		60		U	U

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Naphthalene		20		U	U
		60		U	U
Natural gas		20		S	
		60		S	
Nickel -chloride	NiCl <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-nitrate	Ni(NO <sub>3</sub> ) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-sulphate	NiSO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
Nicotinic acid		20	susp	S	L
		60		S	L
Nitric acid  -fuming (with nitrogen dioxide)	HNO <sub>3</sub>	20	5	S	S
		60		S	S
		20	25	S	S
		60		S	S
		20	50	L	L
		60		U	U
		20	>50	U	U
		60		U	U
		20		U	U
		60		U	U
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	20		U	U
		60		U	U
Nitrocellulose		20		S	
Nitroglycerin		20		L	
		60		U	
Nitrotoluene		20		S	
		60		L	
Nonyl alcohol		20		S	
		60		S	
Octane	C <sub>8</sub> H <sub>18</sub>	20		S	S
		60		S	S
Octyl cresol		20		L	L
		60		U	U
Oils and fats		20		S	L
		60		L	U
Oleic acid	C <sub>8</sub> H <sub>17</sub> CHCH(CH <sub>2</sub> ) <sub>7</sub> CO <sub>2</sub> H	20	100	S	L
		60		L	U
Oleum		20		U	U
		60		U	U
Orthophosphoric acid		20	50	S	S
		60		S	S
		20	95	S	S
		60		L	L
Oxalic acid	HO <sub>2</sub> CCO <sub>2</sub> H	20	sat. sol	S	S
		60		S	S
Oxygen	O <sub>2</sub>	20		S	S
		60		L	L



Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Ozone	O <sub>3</sub>	20		L	U
		60		U	U
Palmitic acid	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>14</sub> COOH	20		S	
		60		S	
Palmityl alcohol		20		S	
		60		S	
Paraformaldehyde		20		S	
		60		S	
Peppermint oil		20		L	
		60		U	
Perchloric acid	HClO <sub>4</sub>	20	20	S	
		60		S	
		20	50	S	
		60		L	
		20	70	S	
		60		U	
		20		S	S
		60		S	S
Peroxide		20	30	S	S
		60		S	S
		20	90	S	S
		60		U	U
		20		S	
		60		L	
Petrol		20		S	
		60		L	
Petroleum -ether -jelly  -spirits		20		U	U
		60		U	U
		20		S	
		60		S	
		20		S	
		60		L	
Phenol	C <sub>6</sub> H <sub>5</sub> OH	20	sol	S	L
		60		S	U
Phenolic resin		20		S	
		60		S	
Phenylethyl alcohol		20		S	
		60		S	
Phenyl hydrazine  -chlorhydrate	C <sub>6</sub> H <sub>5</sub> NHNH <sub>2</sub>	20		L	
		60		L	
	C <sub>6</sub> H <sub>5</sub> NHNH <sub>3</sub> Cl	20		S	
		60		U	
Phenylsulphonate		20		S	
		60		S	
Phosgene		20		U	
		60		U	
Phosphates		20		S	
		60		S	
Phosphine		20		S	S
		60		S	S
Phosphoric -acid	H <sub>3</sub> PO <sub>4</sub>	20	up to 50	S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Phosphoric -acid -anhydride	P <sub>2</sub> O <sub>5</sub>	20	95	S	
		60		L	
		20		S	
		60		S	
Phosphorous oxychloride		20		S	
		60		L	
Phosphorous pentoxide		20		S	S
		60		S	S
Phosphorous trichloride	PCl <sub>3</sub>	20	100	S	S
		60		L	S
Photographic -developer -emulsion		20		S	S
		60		S	S
		20		S	S
		60		S	S
Phthalic acid  -ester	C <sub>6</sub> H <sub>4</sub> (CO <sub>2</sub> H) <sub>2</sub>	20	50	S	
		60		S	
		20		S	
		60		S	
Phthalic anhydride		20		S	
		60		S	
Picric acid	HO <sub>6</sub> H <sub>2</sub> (NO <sub>2</sub> ) <sub>3</sub>	20	sat. sol	S	S
		60			L
Plasticisers		20		S	
		60		L	
Plating solution		20		S	
		60		S	
-brass		20		S	
		60		S	
-cadmium		20		S	
		60		S	
-chromium		20		S	
		60		S	
-copper		20		S	
		60		S	
-gold		20		S	
		60		S	
-indium		20		S	
		60		S	
-lead		20		S	
		60		S	
-nickel		20		S	
		60		S	
-nonchrome		20		S	
		60		S	
-rhodium		20		S	
		60		S	
-silver		20		S	
		60		S	
-tin		20		S	
		60		S	
-zinc		20		S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Polyesters		20		L	
		60		U	
Polyglycols		20		S	
		60		S	
Potash alum		20		S	
		60		S	
Potassium -bicarbonate		20	sat. sol	S	S
		60		S	S
-bisulphate		20	sat. sol	S	S
		60		S	S
-borate	K <sub>3</sub> BO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-bromate	KBrO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-bromide	KBr	20	sat. sol	S	S
		60		S	S
-carbonate	K <sub>2</sub> CO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-chlorate		20	sat. sol	S	S
		60		S	S
-chloride	KCl	20	sat. sol	S	S
		60		S	S
-chromate	K <sub>2</sub> CrO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
-cyanide	KCN	20	sat. sol	S	S
		60		S	S
-dichromate	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	20	sat. sol	S	S
		60		S	S
-ferricyanide		20	sat. sol	S	S
		60		S	S
-ferrocyanide (-hexacyanoferrate (II))	K <sub>4</sub> Fe(CN) <sub>6</sub> ·3H <sub>2</sub> O	20	sat. sol	S	S
		60		S	S
-fluoride	KF	20	sat. sol	S	S
		60		S	S
-hydrogen sulphite		20	sol	S	S
		60		S	S
-hydroxide	KOH	20	sol	S	S
		60		S	S
-hypochlorite		20	sol	S	S
		60		L	L
-iodide		20		S	
		60		S	
-nitrate	KNO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-orthophosphate		20	sat. sol	S	S
		60		S	S
-perborate	KBO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-perchlorate		20	sat. sol	S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Potassium -permanganate -persulphate  -sulphate  -sulphide  -sulphite  -tetracyanocuprate  -thiosulphate	KMnO <sub>4</sub>	20	20	S	S
		60		S	S
	K <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	20	sat. sol	S	S
		60		S	S
	K <sub>2</sub> SO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
		20	sat. sol	S	S
		60		S	S
		20	sat. sol	S	S
		60		S	S
		20	sat. sol	S	S
		60		S	S
Propane (gas) (liquid)	C <sub>3</sub> H <sub>8</sub>	20	100	S	
		60		S	
		20	100	L	
Propargyl alcohol		20		L	L
		60		L	L
Propionic acid		20	50	S	S
		60		S	S
		20	100	S	S
		60		L	L
Propyl alcohol		20	100	S	L
		60		S	L
Propylene -dichloride -glycol  -oxide		20		U	U
		60		U	U
		20		L	L
		60		L	L
		20		S	
		60		S	
Pseudocumene		20		L	
		60		L	
Pyridine	CH(CHCH) <sub>2</sub> N	20	100	S	S
		60		L	L
Quinine		20		S	
		60		S	
Resorcinol		20		S	S
		60		S	S
Roasting gases		20		S	
		60		S	
Rubbers		20		S	
		60		S	
Sagrotan		20		S	
		60		L	
Salicylic acid  -methyl ester		20	sat. sol	S	S
		60		S	S
		20		S	
		60		L	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Selenic acid		20		S	S
		60		S	S
Silicic acid	H <sub>2</sub> SiO <sub>3</sub>	20		S	
		60		S	
Silicone oil		20		S	
		60		L	
Silver -acetate	AgCH <sub>3</sub> COO	20	sat. sol	S	S
		60		S	S
-acid		20		S	S
		60		S	S
-cyanide	AgCN	20	sat. sol	S	S
		60		S	S
-nitrate	AgNO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
Sodium -acetate	CH <sub>3</sub> COONa	20	sat. sol	S	S
		60		S	S
-aluminium sulphate		20		S	
		60		S	
-antimonate		20	sat. sol	S	S
		60		S	S
-arsenite		20	sat. sol	S	S
		60		S	S
-benzoate		20	sat. sol	S	S
		60		S	S
-bicarbonate	NaHCO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-bisulphate	NaHSO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
-bisulphite	NaHSO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-borate		20	sat. sol	S	S
		60		S	S
-bromide	NaBr	20	sat. sol	S	S
		60		S	S
-carbonate	Na <sub>2</sub> CO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-chlorate	NaClO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-chloride	NaCl	20	sat. sol	S	S
		60		S	S
-chlorite		20	2	S	S
		20	20	S	S
-chromate		20	dil. sol	S	S
		60		S	S
-cyanide	NaCN	20	sat. sol	S	S
		60		S	S
-dichromate		20	sat. sol	S	S
		60		S	S
dodecylbenzenesulphonate		20		S	
		60		S	

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Sodium -ferricyanide		20	sat. sol	S	S
		60		S	S
-ferrocyanide	Na <sub>4</sub> Fe(CN) <sub>6</sub>	20	sat. sol	S	S
		60		S	S
-fluoride	NaF	20	sat. sol	S	S
		60		S	S
-hexacyanoferrate		20		S	
		60		S	
-hydrogen sulphide		20	>10	S	S
		60		S	S
-hydroxide	NaOH	20	1 to 40	S	S
		60		S	S
-hypochlorite	NaOCl	20		S	L
		60		S	L
-nitrate	NaNO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-nitrite	NaNO <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-perborate	NaBO <sub>3</sub> .H <sub>2</sub> O	20		S	
		60		S	
-perchlorate		20		S	
		60		S	
-peroxide		20		S	
		60		S	
-phosphate (acid)		20	sat. sol	S	S
		60		S	S
-phosphate (neutral)		20	sat. sol	S	S
		60		S	S
-phosphate (tri)	Na <sub>3</sub> PO <sub>4</sub>	20		S	
		60		S	
-silicate		20	sol	S	S
		60		S	S
-sulphate	Na <sub>2</sub> SO <sub>4</sub>	20	sat. sol	S	S
		60		S	S
-sulphide	Na <sub>2</sub> S	20	sat. sol	S	S
		60		S	S
-sulphite	NaSO <sub>3</sub>	20	sat. sol	S	S
		60		S	S
-thiosulphate	Na <sub>2</sub> S <sub>3</sub> O <sub>3</sub>	20		S	
		60		S	
Spermaceti		20		S	
		60		L	
Spirits		20		S	
		60		S	
Stannic chloride (Tin (IV) chloride)	SnCl <sub>4</sub>	20		S	S
		60		S	S
Stannous chloride (Tin (II) chloride)	SnCl <sub>2</sub>	20		S	S
		60		S	S

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance			
				MDPE/HDPE	LDPE		
Starch		20		L	L		
		60		L	L		
Stearic acid		20		L	L		
		60		L	L		
Styrene		20		L			
		60		U			
Succinic acid		20		S			
		60		S			
Sugar syrup		20	high	S			
		60		S			
Sulphur	S	20		S	S		
		60		S			
Sulphuric acid           -nitric aqueous soln	H <sub>2</sub> SO <sub>4</sub>	20	up to 10	S	S		
		60		S	S		
		20	10 to 50	S	S		
		60		S	S		
		20	50 to 75	S	S		
		60		S	S		
		20	98	S	L		
		60		U	U		
		20	fuming	U	U		
		60		U	U		
		-nitric aqueous soln	H <sub>2</sub> SO <sub>4</sub> + HNO <sub>3</sub> + H <sub>2</sub> O	20	48/49/3	U	
				60		U	
20	50/50/0			U			
60				U			
-nitric aqueous soln	H <sub>2</sub> SO <sub>4</sub> + HNO <sub>3</sub> + H <sub>2</sub> O	20	10/20/70	L			
		60		L			
Sulphurous acid		20	up to 30	S	S		
		60		S	S		
Sulphurous ether		20		S			
		60		L			
Sulphur dioxide	SO <sub>2</sub>	20	dry	S	S		
		60		S	S		
		20	100 liquid	S			
60	L						
Sulphur trioxide	SO <sub>3</sub>	20	100	U	U		
		60		U	U		
Tallow emulsion		20		S	S		
		60		L	L		
Tannic acid	C <sub>14</sub> H <sub>10</sub> O <sub>9</sub>	20	sol	S	S		
		60		S	S		
Tartaric acid	HOOC(CHOH) <sub>2</sub> COOH	20	sat. sol	S	S		
		60		S	S		
Tetrabromoethane		20		L			
		60		U			
Tetrachloroethane	CHCl <sub>2</sub> CHCl <sub>2</sub>	20		L			
		60		U			
Tetrachloroethylene	CCl <sub>2</sub> CCl <sub>2</sub>	20		L			
		60		U			

Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Tetraethyllead	Pb(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>	20		S	S
Tetrahydrofuran	C <sub>4</sub> H <sub>8</sub> O	20		L	U
		60			U
Tetrahydronaphthalene		20		S	
		60		U	
Tetralin		20		U	
		60		U	
Thioglycolic acid		20		S	
		60		S	
Thionyl chloride	SOCl <sub>3</sub>	20	100	U	U
		60		U	U
Thiophene	C <sub>4</sub> H <sub>4</sub> S	20	100	L	
		60		L	
Titanium tetrachloride		20		U	U
		60		U	U
Toluene	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	20	100	L	U
		60		U	U
Tributyl phosphate		20		S	
Trichloroacetic acid	CCl <sub>3</sub> COOH	20	≤50	S	
		60		L	
Trichlorobenzene		20		U	U
		60		U	U
Trichloroethylene	Cl <sub>2</sub> CCHCl	20	100	U	U
		60		U	U
Tricresyl phosphate		20		S	
		60		S	
Triethanolamine	N(CH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub>	20	sol	S	S
		60		L	L
Triethylamine		20			L
		60			L
Triethylene glycol		20		S	S
		60		S	S
Trilon		20		S	
		60		S	
Trimethyl borate		20		S	
		60		L	
Trimethylolpropane		20		S	
		60		S	
Trioctyl phosphate		20		S	
		60		L	
Trisodium phosphate		20		S	S
		60		S	S
Turpentine		20		U	U
		60		U	U
Urea	CO(NH <sub>2</sub> ) <sub>2</sub>	20	sol	S	S
		60		S	S
Uric acid	C <sub>5</sub> H <sub>4</sub> N <sub>4</sub> O <sub>3</sub>	20		S	
		60		S	



Chemical	Formula	Temp. (°C)	Conc. (%)	Resistance	
				MDPE/HDPE	LDPE
Urine		20		S	S
		60		S	S
Vinegar		20	work.sol	S	S
		60		S	S
Vinyl acetate	CH <sub>3</sub> CO <sub>2</sub> CHCH <sub>2</sub>	20		S	
		60		S	
Waste gases		20		S	S
		60		S	S
Water	H <sub>2</sub> O	20		S	S
		60		S	S
Xylene	C <sub>8</sub> H <sub>10</sub>	20	100	L	U
		60		U	U
Yeast (aqueous)		20	susp	S	S
		60		S	S
Zinc -bromide		21		S	S
		60		S	S
-carbonate	ZnCO <sub>3</sub>	20	susp	S	S
		60		S	S
-chloride	ZnCl <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-nitrate	Zn(NO <sub>3</sub> ) <sub>2</sub>	20	sat. sol	S	S
		60		S	S
-oxide	ZnO	20	susp.	S	S
		60		S	S
-stearate		20		S	S
		60		S	S
-sulphate	ZnSO <sub>4</sub>	20	sat. sol	S	S
		60		S	S

#### Sources for Chemical Resistances of PE

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