

# The resistance of Polyethylene to chemicals

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/ mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Acetaldehyde	techn. grade	+	○	+	=
Acetaldehyde, aqueous	any	+	○	+	
Acetaldehyde + acetic acid	90:10	+		+	
Acetamide		+	+	+	
Acetic acid	100%	+	○▽	+	○▽
Acetic acid, aqueous	70%	+	+	+	+
Acetic anhydride	techn. grade	+	○▽	+	
Acetoacetic acid		+		+	
Acetone	techn. grade	+	⊕*	○	
Acetophenone		+		○	
Acetylene		+			
Acids, aromatic		+	+	+	
Acronal® dispersions	as supplied commerc.	+	○	+	
Acrylonitrile	techn. grade	+	+	+	○
Adipic acid, aqueous	saturated	+	+	+	+
Adipic ester		+	○		
Air	techn. grade	+	+	+	+
Aktivin® (chloramine, aqueous 1%)		+	+	+	+
Allyl acetate		+	⊕ to ○	+	○
Allyl alcohol (2-propenol-1)	96%	+	+	○	○
Allyl chloride		○	=	=	=
Aluminium chloride, aqueous	any	+	+	+	+
Aluminium chloride, solid		+	+	+	+
Aluminium fluoride	conc.	+	+	+	+
Aluminium hydroxide		+	+	+	+
Aluminium metaphosphate		+	+	+	+
Aluminium sulphate, aqueous	saturated	+	+	+	+
Aluminium sulphate, solid		+	+	+	+
Alum, aqueous	any	+	+	+	+
Amino acids		+	+	+	+
2-aminoethanol (ethanolamine)	techn. grade	+		+	
Ammonia, gaseous		+	+	+	
Ammonia, liquid		+		+	
Ammonia water	any	+	+	+	
Ammonium acetate, aqueous	any	+	+	+	+
Ammonium bicarbonate, aqueous	saturated	+	+	+	+
Ammonium carbonate, aqueous	any	+	+	+	+
Ammonium chloride, aqueous	any	+	+	+	+
Ammonium fluoride, aqueous	saturated	+	+	+	+
Ammonium hydrosulphide, aqueous	any	+	+	+	+
Ammonium metaphosphate		+	+	+	+
Ammonium nitrate, aqueous	any	+	+	+	+
Ammonium phosphate, aqueous	any	+	+	+	+
Ammonium sulphate, aqueous	any	+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Ammonium sulphide, aqueous	any	+	+	+	+
Ammonium thiocyanate		+	+	+	+
Amyl acetate	techn. grade	+	+	+	○
Amyl alcohol (C5 alcohols)	techn. grade	+	+	+	○
Amyl chloride	100%	○	=	=	=
Amyl phthalate		+	○	○	○
Aniline	any	+	+	+	○
Aniline hydrochloride, aqueous	any	+	+	+	+
Animal oils		+	○	+	○
Aniseed		○	○ to =	=	=
Aniseed oil		○	=	=	=
Anisole		+	=	○	=
Anone (cyclohexanone)		+	○	○	=
Anthraquinone sulphonic acid, aqueous (susp.)		+	+	+	+
Antifreeze (automotive)	as supplied commerc.	+	+	+	+
Antimony chloride, anhydrous		+	+	+	+
Antimony pentachloride		+	+	+	+
Antimony trichloride		+	+	+	+
Aqua regia (HCl + HNO <sub>3</sub> )		=		=	
Aromatic oils		○	=	○	=
Arsenic acid, aqueous	any	+	+	+	+
Arsenic anhydride		+	+	+	+
Ascorbic acid		+	+	+	+
Asphalt		+	○▽	+	○▽
Aspirin®		+		+	
Barium hydroxide, aqueous	any	+	+	+	+
Barium salts, aqueous	any	+	+	+	+
Battery acid		+	+	+	+
Beater glue (animal glue)	as supplied commerc.	+	+		
Beef tallow		+	+	+	○
Beer		+	+	+	+
Beer sugar colouring	as supplied commerc.	+	+	+	+
Beeswax		+	○ to =	+	=
Benzaldehyde, aqueous	any	+	+	○	○
Benzaldehyde in isopropyl alcohol	1 %	+	+	+	○
Benzene	techn. grade	○	=	○	=
Benzene sulphonic acid		+	+	+	+
Benzoic acid, aqueous	any	+	+	+	+
Benzoyl chloride		○	○	=	
Benzyl alcohol		+	+	+	○
Benzyl chloride		○	=	=	
Bichromate – sulphuric acid	conc.	=		=	
Bismuth salts		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Bisulphite liquor		+	+		
Bitumen		+	○▽	+	○▽
Bleaching solution with 12.5 % active chlorine**		○	=	○	=
Bone oil		+	+	+	+
Borax (sodium tetraborate), aqueous	saturated	+	+	+	+
Boric acid, aqueous	any	+	+	+	+
Boric acid methyl ester		+	○ to =	+	=
Boron trifluoride		+	+	+	○
Brake fluid		+	+	+	○
Brandy		+	+	+	+
Bromic acid	conc.	=		=	
Bromine, liquid	100%	=		=	
Bromine vapours		=		=	
Bromine water	cold saturated	+		+	
Bromochloromethane		=		=	
1,3-butadiene, gaseous	techn. grade	○	=		
Butanediol, aqueous	any	+	+	+	+
Butanetriol, aqueous	any	+	+	+	+
Butane, gaseous		+			
Butanol, aqueous	any	+	+	+	○
Butanone		+	○ to =	+	=
2-Butenediol-1,4	techn. grade	+		+	
2-Butinediol-1,4	techn. grade	+		+	
Butoxyl® (methoxybutylacetate)		+	○		
Butter		+		+	
Butylene glycol	techn. grade	+	+	+	+
Butyl acetate (acetic acid butyl ester)	techn. grade	+	○	+	○
Butyl acrylate		+	○	+	○
Butyl alcohol		+	+	+	○
Butyl benzyl phthalate		+	+	○	○
Butyl glycol (ethylene glycol monobutylether)	techn. grade	+		+	
Butyl phenol	techn. grade	+	+	○	
Butyl phenone	techn. grade	=		=	
Butyl phthalate (dibutyl phthalate)	techn. grade	+	○	○	○
Butyric acid, aqueous	any	+	○	+	○
Calcium carbide		+	+	+	+
Calcium carbonate		+	+	+	+
Calcium chlorate, aqueous	saturated	+	+	+	+
Calcium chloride, aqueous	saturated	+	+	+	+
Calcium hydroxide		+	+	+	+
Calcium hypochlorite, aqueous (suspension)	any	+	+	+	+
Calcium nitrate, aqueous	50%	+	+	+	+
Calcium oxide (powder)		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/ mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Calcium phosphate		+	+	+	+
Calcium sulphate		+	+	+	+
Calcium sulphide, aqueous	≤ 10%	○	○		
Camphor		○	=	○	=
Camphor oil		=		=	
Cane sugar, aqueous	any	+	+	+	+
Carbazole		+	+		
Carbolic acid (phenol)		+	+	○	○
Carbolineum	as supplied commerc.	+		○	
Carbolineum, aqueous (for fruit trees)		+	○	○	○
Carbonic acid, aqueous	any	+	+	+	+
Carbonic acid, dry	100%	+	+		
Carbon dioxide	100%	+	+		
Carbon disulphide		○	=	○	=
Carbon monoxide, gaseous	techn. grade	+	+		
Carbon tetrachloride		○	=	=	=
Castor oil		+	+	+	○
Caustic soda solution	any	+	+	+	+
Cetyl alcohol (hexadecanol)		+	+	+	
Chloral hydrate, aqueous	any	+	+	+	+
Chloral (trichloroacetaldehyde)	techn. grade	+	+		
Chloramine, aqueous	saturated	+		+	
Chloric acid, aqueous	1%	+	+	+	+
Chloric acid, aqueous	10%	+	+	+	+
Chlorinated lime		+	+	+	+
Chlorine, aqueous solution (chlorine water)	saturated	+	○	+	○
Chlorine, gaseous, dry		○	=	○	=
Chlorine, gaseous, moist		○	=	○	=
Chlorine, liquid		=		=	
Chlorine bleaching solution with 12.5% active chlorine		○	=	○	=
Chloroacetic acid, aqueous	≤ 85%	+	+	+	+
Chloroacetic acid (mono), aqueous	any	+	+	+	○
Chlorobenzene		○	=	○	=
Chloroformic acid ester		+	○		
Chloroform	techn. grade	○ to =	=	=	=
Chloropicrin		+	=		
Chlorosulphonic acid	techn. grade	=	=	=	=
Chrome alum (potassium chromic sulphate), aqueous	saturated	+	+	+	+
Chrome anode slime		+	+	+	+
Chrome salts, aqueous	any	+	+	+	+
Chromic acid, aqueous**	50%	○	=	○	=
Chromium trioxide, aqueous**	50%	○	=	○	=
Chromosulphuric acid		=		=	
Cider		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Citric acid, aqueous	saturated	+	+	+	+
Citrus fruit juices		+	+	+	+
Clophen® A 50 and A 60®		+	○ to =		
Coal tar oil		±▽	○▽	±▽	○▽
Coconut oil		+	○	+	○
Coconut oil alcohol	techn. grade	+	○	+	○
Cod liver oil		+	○	+	○
Coffee extract		+	+	+	+
Cognac		+		+	
Cola concentrates		+	+	+	+
Common salt, aqueous	any	+	+	+	+
Coolants and lubricants for metalworking		○	○		
Copper chloride, aqueous	saturated	+	+	+	+
Copper cyanide, aqueous	saturated	+		+	
Copper fluoride, aqueous	saturated	+	+	+	+
Copper nitrate, aqueous	30%	+	+	+	+
Copper salts, aqueous	cold saturated	+	+	+	+
Copper sulphate, aqueous	any	+	+	+	+
Corn oil		+	○	+	○
Cottonseed oil	techn. grade	+	+	+	○
Coumarone resins		+	+		
Creasote		+	±▽		
Cresol	100%	+	○▽	○	=
Cresol, aqueous	dilute	+	±▽	+	
Crop protection agents, aqueous	as supplied commerc.	+	+	+	+
Crotonaldehyde	techn. grade	+	○	○	
Crude oil		+	○	+	○
Cyclanone (fatty alcohol sulphonate)	as supplied commerc.	+	+	+	
Cyclohexane		+	+	+	=
Cyclohexanol		+	+	+	+
Cyclohexanone (anone)		+	○	○	=
Decahydronaphthalene (Dekalin®)	techn. grade	+	○	○	=
Defoamers		+	± to ○	+	○
Detergents		+	+	+	+
Detergents, synthetic	end use concentration	+	+	+	+
Developer solutions (photographic)		±▽	±▽	±▽	±▽
Dextrin (starch gum), aqueous	18%	+	+	+	+
Dextrose, aqueous	any	+	+	+	+
1,2-Diaminoethane (ethylenediamine)	techn. grade	+	+	+	○
1,2-Dibromoethane		○	=	=	=
Dibutyl ether		± to ○	=	○	=
Dibutyl phthalate (butyl phthalate)	techn. grade	+	○	○	○
Dibutyl sebacate		+	○	○	○

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Dichloroacetic acid	techn. grade	+	○▽	+	=
Dichloroacetic acid	50%	+	+	+	+
Dichloroacetic acid methyl ester		+	+	○	=
Dichlorobenzene		○	=	=	=
Dichlorodiphenyltrichloroethane (DDT, powder)		+	+	+	+
Dichloroethane		○	○	=	=
1,1-Dichloroethylene (vinylidene chloride)	techn. grade	=	=	=	=
Dichloromethane**		○	○*	=	=*
Dichloropropane		○	=	=	=
Dichloropropene		○	=	=	=
Diesel fuel		+	○	+	=
Diethanolamine	techn. grade	+		+	
Diethylene glycol		+	+	+	+
2-Diethylhexylphthalate (DOP)		+	○	+	
Diethylketone		+	○	○	=
Diethyl ether		+	○*	○	
Diglycolic acid, aqueous	30%	+	+	+	+
Diisobutylketone	techn. grade	+	○ to =	○	=
Diisooctyl phthalate	techn. grade	+	○	○	
Diisopropyl ether		+	=	○	=
Dimethylamine		+	○	○	=
Dimethyl formamide	techn. grade	+	+	+	○
Dimethyl sulphoxide		+	+	+	
Dinonyl phthalate (DNP)	techn. grade	+	○	○	
Diocetyl phthalate		+	○	○	
Dioxane		+	+	+	○
Diphenylamine		+	○	+	○
Diphenyl oxide		+	○	+	○
Disodium phosphate		+	+	+	+
Disodium sulphate		+	+	+	+
Dodecylbenzenesulphonic acid		+	○	+	○
Drinking water, also chlorinated		+	+	+	+
Dyes		+	+	+	+
Eau de Javelle (potassium hypochlorite bleaching solution)		+	=	+	=
Eau de Labarraque (sodium hypochlorite bleaching solution)		+	=	+	=
Electrolytic baths for electroplating		+	○	+	○
Emulsifiers		+	+	+	
Emulsions (photographic)		+	+	+	+
Ephetin®, aqueous	10%	+	+	+	+
Epichlorohydrin		+	+	+	+
Essential oils		+	+	+	○
Esters, aliphatic	techn. grade	+	+	+	○ to =
Ethane		+	+		

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Ethanolamine (2-aminoethanol)	techn. grade	+		+	
Ethanol	96%	+	+	+	+
Ethanol denatured with toluene	96% (v/v)	+		+	
Ethereal oils		○	=	○	=
Ether		⊕ to ○	○*	○	
Ethylenediamine tetraacetic acid		+	+	+	+
Ethylene		+	+		
Ethylene chloride		○	=	○	=
Ethylene chlorohydrin (chloroethanol)	techn. grade	+	⊕▽	+	⊕▽
Ethylene diamine (1,2-diaminoethane)	techn. grade	+	+	+	○
Ethylene dibromide		○	=	○	=
Ethylene dichloride (dichloroethane)		○	=	○	=
Ethylene glycol		+	+	+	+
Ethylene glycol monobutyl ether (butyl glycol)	techn. grade	+		+	
Ethylene oxide, gaseous		+	+		
Ethyl acetate (acetic acid ethyl ester)	techn. grade	+	○	○	=
Ethyl alcohol	96%	+	+	+	+
Ethyl alcohol + acetic acid (fermentation mixture)	as used in production	+	+	+	+
Ethyl benzene	techn. grade	○		○	
Ethyl chloride (chloroethane)	techn. grade	○*		○*	
Ethyl ether (diethyl ether)	techn. grade	⊕ to ○	○*	○	
2-Ethyl hexanol		+	○	+	○
Euron® B		○	○		
Euron® G		+	+		
Fatty acids (>C6)		+	⊕ to ○	+	○
Fatty acid amides		+	○	+	○
Fatty alcohols		+	○	+	○
Fatty oils		+	○	+	○
Ferric alum (ferric ammonium sulphate), aqueous	saturated	+	+	+	+
Ferric chloride, aqueous	any	+	+	+	+
Ferric nitrate, aqueous	saturated	+	+	+	+
Ferric sulphate, aqueous	saturated	+	+	+	+
Ferrous chloride, aqueous	saturated	+	+	+	+
Ferrous sulphate, aqueous	saturated	+	+	+	+
Fertilizer salts, aqueous	any	+	+	+	+
Fixing salt, aqueous	any	+	+	+	+
Fixing salt, solid		+	+	+	+
Fluorine, gaseous		=		=	
Fluoroboric acid, aqueous		+	○	+	○
Fluorosilicic acid	any	+	+	+	+
Fluorosilicic acid, aqueous	any	+	+	+	+
Formaldehyde, aqueous	up to 40%	+	+	+	+
Formamide		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Formic acid, aqueous	10%	+	+	+	+
Formic acid, aqueous	85%	+	+	+	+
Frigen® 12 (Freon® 12)	100%	○	=	○	=
Fructose (fruit sugar), aqueous	any	+	+	+	+
Fruit juices, fermented		+	+	+	+
Fruit juices, unfermented	any	+	+	+	+
Fruit pulp		+	+	+	+
Fuel oil		+	○	○	=
Fuming sulphuric acid (H <sub>2</sub> SO <sub>4</sub> + SO <sub>3</sub> )	any	=		=	
Furfural		+	○	○	=
Furfuryl alcohol		+	⊕▽	+	⊕▽
Gas, manufactured	as supplied commerc.	+		+	
Gas, natural	techn. grade	+		+	
Gas, liquor		+	+	+	+
Gasoline, regular-grade (DIN 51635)		+	○	○	=
Gelatin		+	+	+	+
Genantin®		+	+		
Gin		+		+	
Glacial acetic acid (100% acetic acid)	techn. grade	+	○▽	+	○▽
Glauber's salt, aqueous	any	+	+	+	+
Glucose, aqueous	any	+	+	+	+
Glue		+	+	+	+
Glycerin, aqueous	any	+	+	+	+
Glycerin chlorohydrin		+	+	+	+
Glycerol		+	+	+	+
Glycine		+	+	+	+
Glycolic acid, aqueous	up to 70%	+	+	+	+
Glycolic acid butyl ester		+	+	+	
Glycol, aqueous	as supplied commerc.	+	+	+	+
Glystantin®		+	+	+	+
Grisiron® 8302		○	○		
Grisiron® 8702		+	+		
Halothan®		○	○ to =		
Heptane		+	○	+	=
Hexafluorosilicic acid, aqueous	40%	+	+	+	+
Hexane		+	○	+	=
Hexanetriol		+	+	+	+
Honey		+	+	+	+
Hydraulic fluid		+	○	+	
Hydrazine hydrate		+	+	+	+
Hydrobromic acid, aqueous	50%	+	+	+	+
Hydrochloric acid, aqueous	any	+	+	+	+



Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Hydrocyanic acid		+	+	+	+
Hydrofluoric acid, aqueous	40-85%	+	○	+	○
Hydrogen		+	+		
Hydrogen bromide, gaseous	techn. grade	+	+	+	
Hydrogen chloride gas, dry and moist		+	+	+	
Hydrogen peroxide, aqueous	10%	○	=	○	=
Hydrogen peroxide, aqueous	30%	○	=	○	=
Hydrogen peroxide	100%	○	○	○	=
Hydrogen sulphide, aqueous	saturated	+	+	+	+
Hydrogen sulphide, gaseous		+	+	+	+
Hydroquinone		+	+	+	+
Hydrosulphite, aqueous	up to 10%	+	+	+	+
Hydroxylamine sulphate, aqueous	12%	+	+	+	+
Hypochlorous acid		+	○	○	
Ink		+	+	+	+
Iodine in potassium iodide solution	3% iodine	+	+	+	+
Iodine tincture, DAB 6	as supplied commerc.	+	○	+	○
Isoamyl alcohol	techn. grade	+	○	+	○
Isobutyl alcohol (isobutanol)		+	+	+	○
Isobutyric acid	techn. grade	+	○	+	○
Isooctane		+	○	+	=
Isopropanol (isopropyl alcohol)	techn. grade	+	+	+	+
Isopropyl acetate	100%	+	○	+	○
Isopropyl ether	techn. grade	+	=	○	=
Jam		+	+	+	+
Kerosene		+	○	○	=
Ketones		+	○ to =	+	○ to =
Lactic acid, aqueous	any	+	+	+	+
Lactose (milk sugar)		+	+	+	+
Lanolin (wool fat)		+	+	+	+
Latex		+	+	+	+
Lead acetate, aqueous	any	+	+	+	+
Lead tetraethyl		+		+	
Lime		+	+	+	+
Lime water		+	+	+	+
Linseed oil	techn. grade	+	+	+	○
Liqueur		+	+		
Liquid manure		+	+		
Liquid soaps		+	+	+	+
Lithium bromide		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Lubricating oils	techn. grade	+	+ to O	+	O
Lysol®		+	O		
Machine oil		+	O	+	O
Magnesium carbonate		+	+	+	+
Magnesium chloride, aqueous	any	+	+	+	+
Magnesium fluorosilicate		+	+	+	+
Magnesium hydroxide		+	+	+	+
Magnesium iodide		+	+	+	+
Magnesium salts, aqueous	any	+	+	+	+
Magnesium sulphate, aqueous	any	+	+	+	+
Maleic acid, aqueous	up to 100%	+	+	+	+
Malic acid, aqueous	50%	+	+	+	+
Manganese sulphate		+	+	+	+
Margarine		+	+	+	+
Mash		+	+	+	+
Mayonnaise		+		+	
Menthol		+	O	O	=
Mercury		+	+	+	+
Mercury chloride		+	+	+	+
Mercury salts		+	+	+	+
Metal soaps		+	+	+	+
Methacrylic acid		+	+	+	O
Methanol	techn. grade	+	+	+	+
Methoxybutanol		+	O	+	O
Methoxybutyl acetate (Butoxyl®)		+	+	+	O
Methylamine, aqueous	32%	+		+	
2-Methylbutanol-2	techn. grade	+	O	+	O
Methylene chloride** (dichloromethane)		O	O*	=	=*
Methylisobutyl ketone		+	O to =	+	=
Methyl acetate (acetic acid methyl ester)	techn. grade	+		+	
Methyl acrylate		+	+	+	O
Methyl alcohol		+	+	+	+
Methyl benzene		O	=	O	=
Methyl benzoic acids (toluic acids)	saturated	O		O	
Methyl bromide, gaseous	techn. grade	=		=	
Methyl bromide (bromomethane), gaseous	techn. grade	=		=	
Methyl chloride (chloromethane), gaseous	techn. grade	O		=	
Methyl cyclohexane		O	O to =	O	=
Methyl ethyl ketone	techn. grade	+	O	O	=
Methyl glycol		+	+	+	+
Methyl methacrylate		+	+	+	O
4-Methyl pentanol-2		+	+ to O∇	+	O∇
Methyl propyl ketone		+	O	O	=

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
N-Methyl pyrrolidone		+	+	+	
Methyl salicylate (salicylic acid methyl ester)		+	○	+	○
Methyl sulphuric acid	50%	+	+	+	+
Milk		+	+	+	+
Mineral oil	without additives	+	+	+	○
Mineral water		+	+	+	+
Molasses		+	+	+	+
Molasses wort		+	+	+	+
Monochloroacetic acid		+	○	+	○
Monochloroacetic acid ethyl ester		+	+	+	○
Monochloroacetic acid methyl ester		+	+	+	○
Monochlorobenzene		○	=	○	=
Mordants, metallic		+		+	
Morpholine		+	+	+	
Motor oil (heavy duty oil)		+	+	+	○
Mowilith® emulsions		+	+	+	+
Mustard		+	+	+	+
Nail polish remover		+	○	+	○
Naphthalene		+	=	+	=
Naphtha	techn. grade	+	○	+	○
Naphtha		+	○	+	○
Naphtha/benzene mixture	80/20	+	○	+	○
Nickel chloride		+	+	+	+
Nickel nitrate		+	+	+	+
Nickel salts, aqueous		+	+	+	+
Nickel sulphate, aqueous	any	+	+	+	+
Nicotine		+	+	+	+
Nicotinic acid	≤ 10%	+		+	
Nitric acid**	25%	+	+	+	+
Nitric acid**	50%	○	=	○	=
Nitric acid	95%	=	=	=	=
2,2',2"-Nitrilotriethanol (triethanolamine), aqueous	any	+	○	+	○
Nitrobenzene		+	○	○	=
Nitrocellulose		+		+	
o-Nitrotoluene		+	○	○	=
Nonyl alcohol (nonanol)		+	+	+	○
Nut oil		+		+	
Octyl cresol	techn. grade	○	=	○	=
Oils, ethereal		○	=	○	=
Oils, vegetable and animal		+	+	+	○
Oleic acid		+	○	+	○
Oleum		=	=	=	=

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Olive oil		+	+	+	○
Optical brighteners		+	+	+	+
Orange juice		+	+	+	+
Oxalic acid, aqueous	any	+	+	+	+
Oxygen		+	+	+	+
Ozone	50 ppm	○	=	○	=
Palmitic acid		+	+	+	+
Palmityl alcohol		+	+	+	+
Palm nut oil		+		+	
Paraffin, liquid		+	+	+	○
Paraffin wax emulsions	as supplied commerc.	+	○	+	○
Paraformaldehyde		+	+	+	+
Peanut oil	techn. grade	+		+	
Pentanol		+		+	
Peppermint oil		+		+	
Perchloric acid, aqueous	20%	+	+	+	+
Perchloric acid, aqueous	50%	+	○	+	○
Perchloric acid, aqueous	70%	+	=	+	=
Perchloroethylene		○	=	=	=
Petrol, regular-grade (DIN 51 635)		+	○	○	=
Petroleum		+	○	○	=
Petroleum ether		+	○	+	
Phenolic resin moulding compounds		+	+	+	+
Phenol		+	⊕▽	○	○▽
Phenyl ethyl alcohol		+	+	+	○
Phenyl hydrazine	techn. grade	○	○ to =	○	=
Phenyl hydrazine hydrochloride		+	=	+	=
Phenyl sulphonate (sodium dodecyl benzene sulphonate)		+	+	+	+
Phosgene, gaseous		○			
Phosgene, liquid	100%	=			
Phosphates, aqueous	any	+	+	+	+
Phosphoric acid, aqueous	50%	+	+	+	+
Phosphoric acid, aqueous	80% ... 95%	+	○▽	+	○▽
Phosphorus oxychloride		+	○	+	○
Phosphorus pentoxide	100%	+	+	+	+
Phosphorus trichloride		=	=	=	=
Photographic developers		⊕▽	⊕▽	⊕▽	⊕▽
Photographic emulsions	as supplied commerc.	+	+	+	+
Photographic fixing baths	as supplied commerc.	+	+	+	+
Phthalic acid, aqueous	50%	+	+	+	+
Phthalic acid dibutyl ester (dibutyl phthalate)	techn. grade	+	○	○	○
Phthalic ester		+	⊕ to ○	+	○
Picric acid, aqueous	1%	+		+	

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Pineapple juice		+	+	+	+
Pine needle oil		+		+	
Plasticisers		+	○	○	○
Polyacrylic acid emulsions		+	+	+	+
Polyester plasticisers		+	⊕ to ○	○	○
Polyester resins		○	=	○	=
Polyglycols		+	+	+	+
Polysolvan® O (glycolic acid butyl ester)		+	+	+	○
Potassium aluminium sulphate, aqueous	any	+	+	+	+
Potassium bicarbonate, aqueous	saturated	+	+	+	+
Potassium bisulphate, aqueous	saturated	+	+	+	+
Potassium bisulphite, aqueous	saturated	+	+	+	+
Potassium borate, aqueous	1 %	+	+	+	+
Potassium bromate, aqueous	up to 10 %	+	+	+	+
Potassium bromide, aqueous	any	+	+	+	+
Potassium carbonate, aqueous	any	+	+	+	+
Potassium chlorate, aqueous	any	+	+	+	+
Potassium chloride, aqueous	any	+	+	+	+
Potassium chromate, aqueous	40 %	+	+	+	+
Potassium chromic sulphate (chrome alum), aqueous	saturated	+	+	+	+
Potassium cyanide, aqueous	any	+	+	+	+
Potassium dichromate, aqueous	any	+	+	+	+
Potassium ferrocyanide and ferricyanide, aqueous	any	+	+	+	+
Potassium fluoride, aqueous	any	+	+	+	+
Potassium hexacyanoferrate, aqueous	any	+	+	+	+
Potassium hydroxide		+	+	+	+
Potassium hydroxide, aqueous	any	+	+	+	+
Potassium hydroxide solution	50 %	+	+	+	+
Potassium hypochlorite, aqueous	saturated	○	=	○	=
Potassium iodide, aqueous	any	+	+	+	+
Potassium nitrate, aqueous	any	+	+	+	+
Potassium perborate		+	+	+	+
Potassium perchlorate, aqueous	up to 10 %	+	○	+	○
Potassium perchlorate, aqueous	1 %	+		+	
Potassium permanganate	20 %	+	⊕▽	+	⊕▽
Potassium permanganate, aqueous	up to 6 %	+	⊕▽	+	⊕▽
Potassium persulphate, aqueous	any	+	+	+	+
Potassium phosphate, aqueous	saturated	+	+	+	+
Potassium sulphate, aqueous	any	+	+	+	+
Potassium sulphide, aqueous	saturated	+	+	+	+
Potassium sulphite, aqueous	saturated	+	+	+	+
Potassium tetracyanocuprate, aqueous	saturated	+	+	+	+
Potassium thiosulphate, aqueous	saturated	+	+	+	+
Propane, gaseous	techn. grade	+			

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/ mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Propanol-(2) (isopropyl alcohol)		+	+	+	+
n-Propanol (n-propyl alcohol)		+	+	+	+
Propanol (propyl alcohol)		+	+	+	+
Propargyl alcohol, aqueous	7%	+	+	+	+
Propionic acid, aqueous	any	+	+	+	+
Propylene dichloride	100%	=		=	
Propylene glycol		+	+	+	+
Propylene oxide		+	+		
Pseudocumene		○	○		
Pyridine		+	○	+	○
Quinine		+	+	+	+
Release agents		+	+		
Roasting gases, dry	any	+	+		
Rubber dispersions (latex)		+	+	+	+
Sagrotan®		+	○	+	○
Salicylic acid		+	+	+	+
Salt brines	saturated	+	+	+	+
Saturated steam condensate		+	+	+	+
Sauerkraut (pickled cabbage)		+	+	+	+
Sea water		+	+	+	+
Silicic acid, aqueous	any	+	+	+	+
Silicone emulsion	as supplied commerc.	+	+	+	+
Silicone oil	techn. grade	+	+	+	+
Silver nitrate		+	+	+	+
Silver nitrate, aqueous	any	+	+	+	+
Silver salts, aqueous	cold saturated	+	+	+	+
Soap solution, aqueous	any	+	+	+	+
Soda (sodium carbonate), aqueous	any	+	+	+	+
Sodium acetate, aqueous	any	+	+	+	+
Sodium aluminium sulphate		+	+	+	+
Sodium benzoate, aqueous	any	+	+	+	+
Sodium bicarbonate, aqueous	saturated	+	+	+	+
Sodium bisulphate, aqueous	saturated	+	+	+	+
Sodium bisulphite, aqueous	saturated	+	+	+	+
Sodium borate		+	+	+	+
Sodium bromide		+	+	+	+
Sodium carbonate, aqueous	any	+	+	+	+
Sodium chlorate, aqueous	saturated	+	+	+	+
Sodium chloride, aqueous	any	+	+	+	+
Sodium chlorite, aqueous	50%	+		+	
Sodium chromate		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE		Behaviour of LDPE/LLDPE/mLLDPE	
		at 20 °C	60 °C	at 20 °C	60 °C
Sodium cyanide		+	+	+	+
Sodium dichromate		+	+	+	+
Sodium dodecylbenzenesulphonate		+	+	+	+
Sodium ferricyanide, aqueous	saturated	+	+	+	+
Sodium ferrocyanide		+	+	+	+
Sodium fluoride		+	+	+	+
Sodium hexametaphosphate, aqueous	saturated	+	+	+	+
Sodium hydroxide, aqueous	any	+	+	+	+
Sodium hydroxide, solid		+	+	+	+
Sodium hypochlorite, aqueous with 12.5% active chlorine**		○	=	○	=
Sodium iron cyanide		+	+	+	+
Sodium nitrate, aqueous	any	+	+	+	+
Sodium nitrite, aqueous	any	+	+	+	+
Sodium perborate, aqueous	any	+	○	+	○
Sodium perchlorate, aqueous	any	+	+	+	+
Sodium peroxide, aqueous	saturated	○		○	
Sodium peroxide, aqueous	10%	+	+	+	+
Sodium phosphate, aqueous	saturated	+	+	+	+
Sodium silicate		+	+	+	+
Sodium silicate, aqueous	any	+	+	+	+
Sodium sulphate, aqueous	cold saturated	+	+	+	+
Sodium sulphide, aqueous	any	+	+	+	+
Sodium tetraborate (borax), aqueous	saturated	+	+	+	+
Sodium thiosulphate, aqueous	saturated	+	+	+	+
Soft soap		+	+	+	+
Soya bean oil		+	+	+	○
Spermaceti		+		○	
Spindle oil		⊕ to ○	○	○	
Spirits		+		+	
Stain remover		⊕ to ○	○	○	
Starch, aqueous	any	+	+	+	+
Starch gum (dextrin), aqueous	18%	+	+	+	+
Starch syrup		+	+	+	+
Stearic acid		+	○	+	○
Styrene		○	=	○	=
Succinic acid, aqueous	50%	+	+	+	+
Sugar beet juice		+	+	+	+
Sugar syrup		+	+	+	+
Sulphates, aqueous solutions	any	+	+	+	+
Sulphur		+	+	+	+
Sulphuric acid, aqueous	up to 50%	+	+	+	+
Sulphuric acid, aqueous	70%	+	○	+	○
Sulphuric acid, aqueous	80%	+	○	+	○
Sulphuric acid, aqueous	98%	○ <sup>1)</sup>	=	○	=

1) *Lupolen* and *Hostalen* blow mouldings that have been approved for use with dangerous filling substances are suitable for contact with e. g. 98% Sulphuric acid

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/ mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Sulphurous acid		+	+	+	+
Sulphuryl chloride (sulphonyl chloride)		=		=	
Sulphur dioxide, aqueous	any	+	+	+	+
Sulphur dioxide, gaseous		+	+		
Sulphur trioxide		=		=	
Tallow	techn. grade	+	+	+	+
Tannic acid (tannin), aqueous	10%	+	+	+	+
Tanning extracts, vegetable	as supplied	+		+	
Tartaric acid, aqueous	any	+	+	+	+
Tetrabromomethane		○ to =	=	=	=
Tetrachloroethane		○ to =	=	=	=
Tetrachloroethylene		○ to =	=	=	=
Tetrachloromethane (carbon tetrachloride)	techn. grade	○	=	=	=
Tetrahydrofuran	techn. grade	○ to =	=	=	=
Tetrahydronaphthalene (Tetralin®)	techn. grade	+	=	○	=
Thioglycolic acid		+	+	+	+
Thionyl chloride		=		=	
Thiophene		○	=	○	=
Tin (II) chloride, aqueous	any	+	+	+	+
Tin (IV) chloride, aqueous	saturated	+	+	+	+
Toluene	techn. grade	○	=	○	=
Toluic acids (methyl benzoic acids)	saturated	○		○	
Tomato juice		+	+	+	+
Transformer oil (insulating oil)	techn. grade	+	○	+	○
Tributyl phosphate		+	+	+	
Trichloroacetaldehyde (chloral)	techn. grade	+	+	○	=
Trichloroacetic acid	techn. grade	+	○ to =	○	=
Trichloroacetic acid, aqueous	50%	+	+	+	+
Trichlorobenzene		=	=	=	=
Trichloroethylene	techn. grade	○ to =	=	=	=
Tri- <i>n</i> -chloroethylphosphate		+	+	+	
Tricresyl phosphate		+	+	+	
Triethanolamine		+	+	+	○▽
Triethanolamine (2,2'2''-nitrilotriethanol), aqueous	any	+	○	+	○
Triethylene glycol		+	+	+	+
Trilon®		+	+		
Trimethylol propane, aqueous		+	+	+	+
Trimethyl borate		+	○ to =	+	=
Trioctyl phosphate		+	○	+	
Trisodium phosphate		+	+	+	+
Turpentine oil	techn. grade	+	=	○	=
Tutogen® U		+	+		
Tween® 20 and 80		+	=		
Two-stroke oil		+	○		



Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Urea, aqueous	up to 33%	+	+	+	+
Uric acid		+	+	+	+
Urine		+	+	+	+
Vaseline	techn. grade	+	○	○	○
Vaseline oil	techn. grade	+	○	○	○
Vinegar (wine vinegar)	as supplied commerc.	+	+	+	+
Vinylidene chloride (1,1-dichloroethylene)	techn. grade	=		=	
Vinyl acetate		+	+	+	○
Viscose spinning solutions		+	+	+	+
Vitamin C		+		+	
Vitamin preparations, dry (powder)		+		+	
Walnut oil		+	○	+	○
Washing up liquids	usual	+	+	+	+
Waste gases containing carbonic acid	any	+	+		
Waste gases containing carbon dioxide	any	+	+		
Waste gases containing carbon monoxide	any	+	+		
Waste gases containing hydrochloric acid	any	+	+		
Waste gases containing hydrogen fluoride	trace	+	+		
Waste gases containing nitrogen oxides	trace	+	+		
Waste gases containing sulphur dioxide	low	+	+		
Waste gases containing sulphuric acid (moist)	any	p	p		
Waste gases containing sulphur trioxide (fuming sulphuric acid)	trace	=		=	
Water, distilled		+	+	+	+
Waxes		+	+	+	○
Wax alcohols	techn. grade	○	○		
Whey		+	+	+	+
Whisky		+		+	
White spirit	techn. grade	+		○	
Wine		+		+	
Wine vinegar (table vinegar)	as supplied commerc.	+	+	+	+
Wood stains	end use concentration	+	+		
Xylene		○	=	○	=
Yeast		+	+	+	+
Zinc carbonate		+	+	+	+
Zinc chloride, aqueous	any	+	+	+	+
Zinc oxide		+	+	+	+
Zinc salts, aqueous	any	+	+	+	+
Zinc sludge		+	+	+	+

Substance	Concentration	Behaviour of MDPE/HDPE at		Behaviour of LDPE/LLDPE/mLLDPE at	
		20 °C	60 °C	20 °C	60 °C
Zinc stearate		+	+	+	+
Zinc sulphate, aqueous	any	+	+	+	+