

U.H.M.W. Polymer

Hostalen® GUR is almost completely inert to chemical attack. At temperatures below 60°C it is unaffected by a large number of solvents. At higher temperatures Hostalen® GUR is dissolved by solvents such as decahydronphthalene and also by aromatic and halogenated hydrocarbons. Fats, oils and waxes have very little swelling effect on the product. It is not attacked by aqueous solutions of salts, acids and alkalis, unless they are strong oxidising agents such as nitric acid, oleum and halogens.

The results of numerous chemical resistance tests are listed below. They were obtained on test specimens 50mm (2") x 25mm (1") x 1mm (0.040") after 55 days aging in the various media. The results quoted are not always transferable to end-use applications. Under a state of stress and simultaneous contact with surface-active and polar substances, the mechanical properties of the moulding may be adversely affected.

Symbols used below:

+	= Specimen is resistant	Swelling <3% or alternately weight loss < 0.5%. Break elongation not significantly altered.
/	= Specimen has limited	Swelling 3-8% or alternately weight loss 0.5-5% and/or break elongation decreased by <50%.
-	= Not resistant	Swelling >8% or alternately weight loss >5% and/or break elongation decreased by >50%.
D	= Discolouration	
*	Aqueous solutions in all concentrations	
**	Under slight mechanical stress	
***	Or alternately boiling point	
****	Does not hold for welded joints (including fold welds); further information may be obtained from us direct or from the fabricator of the semi-finished article.	

Substance	20°C	60°C	Substance	20°C	60°C
Acetaldehyde	+	/*	Calcium chloride, 10%*	+	+
Acetic acid, 10%	+	+	Calcium chloride, conc.	+	+
Acetic acid, 100% (glacial)	+	+ D	Calcium hypochlorite, bleach*	+	+
Acetic anhydride	+	/ D	Calcium nitrate, 50%	+	+
Acetone	+	+***	Camphor	+	/
Acids, aromatic	+	+	Carbon disulphide	/	
Acrylonitrile	+	+	Carbon tetrachloride	/**to-	-
Acrylic acid	+	+ and higher	Carbonic acid	+	+
Allyl alcohol, 96%	+	+	Castor oil	+	+
Aluminium chloride*	+	+	Caustic potash	+	+
Alum	+	+	Caustic soda	+	+
Ammonia*	+	+	Chloral hydrate*	+	+ D
Ammonia, gaseous	+	+	Chlorine, liquid	-	-
Ammonia, liquid	+		Chlorine gas, dry	/	-
Ammonium salts*	+	+	Chlorine gas, moist	/	-
Amyl acetate	+	+	Chloroacetic acid (mono)	+	+
Aniline	+	+	Chlorobenzene	/	-
Anisole	/	/to-	Chloroethanol	+	+ D
Antimony trichloride	+	+	Chloroform	/**to-	-
Aqua regia	-	-	Chlorosulphonic acid	-	-
Beer	+	+	Chromic acid, 10%	+	+
Beeswax	+	/**to-	Chromic acid, 80%****	+	/ D
Benzaldehyde	+	+to/	Citric acid, 10% & conc.	+	+
Benzene	/	/	@Clophen A50 and A60	+	/to-
Benzenesulphonic acid	+	+	Coconut oil	+	/
Benzoic acid*	+	+	Common salt, aqueous, saturated	+	+
Benzoyl chloride	/	/	Copper salts*	+	+
Benzyl alcohol	+	+	Corn oil	+	/
Borax*	+	+	Creosote	+	+ D
Boric acid*	+	+	Cresol	+	+ D
Brine (saturated)	+	+	Cyclohexane	+	+
Bromine, liquid	-	-	Cyclohexanol	+	+
Bromochloromethane	-	-	Cyclohexanone	+	/
Butanol	+	+	@Dekalin	+	/
Butoxyl (Methoxy butyl acetate)	+	/	Desiccator grease (Merck 4318)	+	/
Butyl acetate	+	/	Detergents, synthetic	+	+
Butylene glycol	+	+	Dibutyl ether	+to/	-
Butyric acid	+	/	Dibutyl phthalate	+	/
Calcium carbonate, 10%*	+	+	Dichloroacetic acid, 50%	+	+

Substance	20°C	60°C	Substance	20°C	60°C
Dichloroacetic acid, 100%	+	/ D	Glycerine	+	+
Dichloroacetic acid methyl ester	+	+	Glycol, concentrated	+	+
o-Dichlorobenzene	/	-	Glycolic acid, 55%	+	+
p-Dichlorobenzene	/	-	Glycolic acid, 70%	+	+
Dichloroethylene	-	-	Glycolic acid butyl ester	+	+
Diesel fuel oil	+	+	@Grisiron 8302	/	/
Diethyl ether	+to/	/**	@Grisiron 8702	+	+
Diisobutyl ketone	+	/to-	Halothane	/	/to-
Dimethylamine	+	/	Heating oil	+	/
Dimethyl formamide	+	+to/	Hydraulic fluid	+	/
Dimethyl sulphoxide	+	+	Hydrazine hydrate	+	+
Dioxane	+	+	Hydrobromic acid, 50%	+	+
Drilling aid "Hoechst" (water soluble coolant)	/	/	Hydrobromic acid, all concs.	+	+
Emulsifiers	+	+	Hydrobromic acid gas, dry and moist	+	+
Epichlorhydrin	+	+	Hydrocyanic acid	+	+
Esters, aliphatic	+	+to/	Hydrofluoric acid, 10%	+	+
Ethanol, 96%	+	+	Hydrofluoric acid, 40%	+	/
Ether	+to/	/**	Hydrofluoric acid, 70%	+	/
Ethyl acetate	+	/	Hydrogen peroxide, 30%	+	+
Ethylene chloride (Dichloroethane)	/	/	Hydrogen peroxide, 90%	+	-
Ethylenediaminetetraacetic acid	+	+	Hydrogen sulphide	+	+
Ethylene glycol	+	+	Hydrosulphite, 10% aqueous	+	+
@Euron B	/	/	Iodine tincture, DAB 6 (German Pharmacopoeia)	+	/ D
@Euron G	+	+	Isooctane	+	/
Fatty acids (>C6)	+	+to/	Isopropanol	+	+
Ferric chloride*	+	+	Isopropyl ether	+to/	-
Fluorine	-	-	Jams	+	+
Fluosilicic acid*	+	+	Kerosene	+	/
Formaldehyde, 40% aqueous	+	+	Ketones	+	+to/
Formic acid	+	+	Lactic acid	+	+
@Frigen	/	-	Linseed oil	+	+
Fruit juices	+	+	Magnesium chloride*	+	+
Fruit pulp	+	+	Maleic acid	+	+
Furfuryl alcohol	+	+ D	Maleic acid, 50%	+	+
Gasoline	+	/	Menthol	+	/
Gelatine	+	+	Mercury	+	+
			Mercuric chloride (corrossive subliminate)	+	+

Substance	20°C	60°C	Substance	20°C	60°C
Methanol	+	+	Perchloric acid, 70%	+	- D
Methoxybutanol	+	/	Petrol	+	+to/
Methylcyclohexane	/	/to-	Petrol/benzene mixture (BV-Aral)	+	/
Methylene chloride	/	/**	Petroleum ether	+	/
Methyl ethyl ketone	+	+	Phenol	+	+ D
Methyl glycol	+	+	Phenyl sulphonate (Sodium dodecylbenzenesulphonate)	+	+
4-Methyl-2-pentanol	+	+to/ D	Phosphates*	+	+
Milk	+	+	Phosphoric acid, 10%	+	+
Mineral oils	+	+to/	Phosphoric acid, 25%	+	+
Molasses	+	+	Phosphoric acid, 50%	+	+
Monochloroacetic acid	+	+	Phosphoric acid, 95%	+	+ D
Monochloroacetic acid ethyl ester	+	+	Phosphorus oxychloride	+	/
Monochloroacetic acid methyl ester	+	+	Phosphorus pentoxide	+	+
Morpholine	+	+	Phosphorus trichloride	+	/
Motor oils, heavy-duty oils	+	+to/	Photographic developers	+	+
Naphtha	+	/	Phthalic acid, 50%	+	+
Naphthalene	+	/	Polyglycols	+	+
Nickel salts*	+	+	®Polysolvan O (Glycolic acid butyl ester)	+	+
Nitric acid, 25%****	+	+	Potassium bichromate, 40%	+	+
Nitric acid, 50%	/	- D	Potassium chloride*	+	+
Nitrobenzene	+	/	Potassium cyanide, aqueous, saturated	+	+
o-Nitrotoluene	+	/	Potassium hydroxide, 30% aqueous	+	+
Nitrous gasses	+	+	Potassium nitrate, aqueous, saturated	+	+
Oils, ethereal	+	/	Potassium permanganate	+	+ D
Oils, linseed & olive	+	+	Propionic acid, 50%	+	+
Oils, lubricating	+	+	Propionic acid, 100%	+	/
Oils, lubricating, detergent	+	+	Propylene glycol	+	+
Oils, penetrating			Pseudocumene	/	/
Oleic acid, 10%	+	+	Pyridine	+	/
Oleic acid, conc.	+	/	Sea water	+	+
Oleum	-	-	Silicic acid	+	+
Oxalic acid, 50%	+	+	Silicone oil	+	+
Oxygen, liquid (not recommended as seals due to flammability)	-	-	Silver nitrate	+	+
Ozone	/	-	Sodium benzoate	+	+
Paraffin, liquid	+	+			
Perchloric acid, 20%	+	+			
Perchloric acid, 50%	+	/			

Substance	20°C	60°C	Substance	20°C	60°C
Sodium borate	+	+	Sulphuric acid, 100%	+	- D
Sodium carbonate, 10%*	+	+	Sulphurous acid	+	+
Sodium chloride, 10%	+	+	Sulphuryl chloride	-	
Sodium chloride, 50%	+	+	Synthetic detergents	+	+
Sodium chloride bleach	/	-	Tallow	+	+
Sodium dodecylbenzene-sulphonate	+	+	Tannic acid, 10%	+	+
Sodium hydroxide, 30% aqueous	+	+	Tartaric acid	+	+
Sodium hydroxide, 60% aqueous	+	+	Tetrabromoethane	/**to-	-
Sodium hypochlorite**** all concs.	+	+	Tetrachloroethane	+**to/	-
Sodium nitrate*	+	+	Tetrahydrofurane	+**to-	-
Sodium peroxide, 10%	+		@Tetralin	+	/
Sodium peroxide, saturated	/		Thionyl chloride	-	
Sodium silicate*	+	+	Thiophene	/	/
Sodium sulphide*	+	+	Toluene	/	-
Sodium thiosulphate	+	+	Transformer oil	+	/
Spermaceti	+	/	Tributyl phosphate	+	+
Spindle oil	+to/	/	Trichloroacetic acid, 50%	+	+
Starch	+	+	Trichloroacetic acid, 100%	+	/to-
Stearic acid	+	/	Trichloroethylene	+**to-	-
Succinic acid, 50%	+	+	Tricresyl phosphate	+	+
Sugar syrup	+	+	Tri-B-chloroethyl phosphate	+	+
Sulphates*	+	+	Triethanolamine	+	+ D
Sulphur	+	+	Turpentine oil	+to/	/
Sulphur dioxide, dry	+	+	@Tutogen "U"	+	+
Sulphur dioxide, moist	+	+	@Tween 20 and 80	+	-
Sulphur trioxide	-	-	Urea, 33%	+	+
Sulphuric acid, 10%	+	+	@Vaseline	+**to/	/
Sulphuric acid, 50%	+	+	Water, distilled	+	+
Sulphuric acid, 75%	+	/	Water, sea	+	+
			White spirit	+to/	/
			p-Xylene	/	-
			Yeast	+	+
			Zinc chloride*	+	+