

## Resistance to chemical substances

The following index gives information about the chemical resistance of the materials ORBILAN PE 8000 natural, ORBILAN PE 1000 natural and PE 500 natural.

The details on the following index refer to a test specimen remained 60 days without loading in a certain substance. It has than been assayed on moisture extantion, weight loss and a pull-out test has been made.

The test specimen 50 mm x 25 mm x 1 mm and 1B according to ISO 527-2, with dimensions in a ratio 1 : 4 had been taken from a compression-moulded sheet.

### Explanation of symbols

- |                                  |  |
|----------------------------------|--|
| + resistant                      | tensile stress at yield and elongation at break changes nonessentionally |
| ○ conditionally resistant        | tensile stress and elongation at break slightly alleviated               |
| - not resistant                  | tensile stress and elongation at break slightly alleviated               |
| * temperature of ebullition      |  |
| ∇ changing of colour is possible |  |

### Table

A				
substance	concentration	20°C	60°C	
Acetaldehyde	technically grade	+	○	
Acetic acid	100 %	+	○∇	
Acetic acid, aqueous	70 %	+	+	
Acetic anhydride	technically grade	+	○∇	
Acetone	technically grade	+	+*	
Acronal® dispersions	as supplied commerce	+	○	
Acrylonirile	technically grade	+	+	
Allyl acetate		+	+ → ○	
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		+	+	
Ammonia, gaseous		+	+	
Ammonia, liquid		+		

A				
substance	concentration	20°C	60°C	
Aniline	any	+	+	
Anisole		+	-	
Aqua regia (HCl + HNO <sub>3</sub> )		-		

B				
substance	concentration	20°C	60°C	
Beer		+	+	
Benzaldehyde, aqueous	any	+	+ → ○	
Benzene	technically grade	○	-	
Benzoic acid, aqueous	any	+	+	
Benzyl alcohol		+	+	
Bitumen		+	○∇	
Bromine, liquid	100 %	-		

B				
substance	concentration	20°C	60°C	
Butanol, aqueous	any	+	+	
Butter		+		

02.2014

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## C

substance	concentration	20°C	60°C
Calcium hypochlorite, aqueous (suspension)	any	+	+
Camphor		○	-
Carbon disulphide		-	
Caustic soda	any	+	+
Chlorine, liquid		-	
Chloroacetic acid, aqueous	≤ 85 %	+	+
Chlorobenzene		○	-
Chloroform	technically grade	○ →	-
Chromosulphuric acid		-	
Cider		+	+
Citrus fruit juices		+	+
Coconut oil		+	○
Cod liver oil		+	○
Cresol	100 %	+	○▽
Cyclohexane		+	+
Cyclohexanol		+	+
Cyclohexanone (anone)		+	○

## D

substance	concentration	20°C	60°C
Detergents		+	+
Dibutyl ether		+ → ○	-
Dibutyl phthalate (butyl phthalate)	technically grade	+	○
Dichloroacetic acid	technically grade	+	○▽
Dichloroacetic acid	technically grade	+	○▽
Dichloroethane		○	○
Diesel fuel		+	○
Diglycolic acid, aqueous	30 %	+	+
Dimethyl formamide	technically grade	+	□+ → ○
Dimethylamine		+	○
Dioxane		+	+

## E

substance	concentration	20°C	60°C
Ethyl acetate (acetic acid ethyl ester)	technically grade	+	○
Ethylene alcohol	96 %	+	+
Ethylene chloride		○	-
Ethylene diamine (1,2 – diaminoethane)	technically grade	+	+
Ethylene glykol		+	+

## F

substance	concentration	20°C	60°C
Ferric chloride, aqueous	any	+	+
Ferric nitrate, aqueous	saturated	+	+
Ferric sulphate, aqueous	saturated	+	+
Ferrous (II) chloride, aqueous	saturated	+	+
Ferrous (III) chloride, aqueous	saturated	+	+
Ferrous (III) nitrate, aqueous	saturated	+	+
Ferrous (II) sulfate, aqueous	saturated	+	+
Ferrous (III) sulfate, aqueous	saturated	+	+
Formaldehyde, aqueous	≤ 40 %	+	+
Formaldehyde, aqueous	≤ 40 %	+	+
Formic acid, aqueous	85 %	+	+
Frigen® 12 (Freon® 12)	100 %	○	-
Fruit juices	any	+	+
Fuel oil		+	○
Furfurol		+	○

## G

substance	concentration	20°C	60°C
Glycerin, aqueous	any	+	+
Glykol, aqueous	as supplied commerce	+	+
Glystantin®		+	+

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## H

substance	concentration	20°C	60°C
Heptane		+	○
Hexane		+	○
Honey		+	+
Hydrobromic acid, aqueous	50 %	+	+
Hydrochloric acid, aqueous	any	+	+

## I

substance	concentration	20°C	60°C
Ink		+	+
Iodine in potassium iodide solution	3 % iodine	+	+
Isooctane		+	○
Isopropanol (isopropyl alcohol)	technically grade	+	+
Isopropyl ether		□+ → ○	-

## J

substance	concentration	20°C	60°C
Jam		+	+

## K

substance	concentration	20°C	60°C
Kerosene		+	○

## L

substance	concentration	20°C	60°C
Linseed oil	technically grade	+	+
Lithium bromide		+	+

## M

substance	concentration	20°C	60°C
Maleic acid, aqueous	any	+	+
Menthol		+	○
Mercury		+	+
Methanol	technically grade	+	+
Methyl chloride (chloromethane), gaseous	technically grade	-	
Methyl ethyl ketone	technically grade	+	○
Milk		+	+
Molasses		+	+
Motor oil (heavy duty oil)	without additives	+	+ → -

## N

substance	concentration	20°C	60°C
Naphtha		+	○
Naphthalene		+	-
Nitric acid, aqueous	25 %	+	+
Nitric acid, aqueous	50 %	○	-
Nitrobenzene		+	○

## O

substance	concentration	20°C	60°C
Oils, ethereal		○	-
Oils, vegetable and animal		+	□+ → ○
Oleic acid		+	○
Oleum	any	-	
Oxalic acid, aqueous	any	+	+
Oxygen		+	+
Ozone	50 ppm	○	-

## P

substance	concentration	20°C	60°C
Perchloric acid, aqueous	20 % 50 % 70 %	+	+
Petroleum		+	○
Petroleum ether		+	○
Phenol		+	+∇
Phosphoric acid, aqueous	50 %	+	+
Phosphoric acid, aqueous	80 % ... 95 %	+	○∇
Phosphorus trichloride		-	-
Photographic developers		+∇	+∇
Photographic developers		+∇	+∇
Photographic emulsions	as supplied commerce	+	
Photographic fixing baths	as supplied commerce	+	
Phthalic acid, aqueous	50 %	+	+
Polyester resins		○	-
Propionic acid, aqueous	any	+	+
Pyridine		+	○

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## S

substance	concentration	20°C	60°C
Sea water		+	+
Silicone oil	technically grade	+	+
Sodium borate		+	+
Sodium bromide		+	+
Sodium hydroxid, aqueous	any	+	+
Sodium hydroxid, solid		+	+
Stearic acid		+	○
Sugar syrup		+	+
Sulphuric acid, aqueous	≤ 50 %	+	+
	70 %	+	○
	80 %	+	○
	98 %	○	○

## T

Substance	concentration	20°C	60°C
Tallow	technically grade	+	+
Tannic acid (tannin), aqueous	10 %	+	+
Tetrahydrofuran	technically grade	○ → -	-
Thionyl chloride		-	
Thiophene		○	-
Tin (II) chloride, aqueous	any	+	+
Tin (IV) chloride, aqueous	saturated	+	+
Toluene	technically grade	○	-
Transformer oil (insulating oil)	technically grade	+	○
Trichloroacetic acid	technically grade	+	○ → -
Trichloroethylene	technically grade	○ → -	-
Triethanolamine		+	+∇
Turpentine oil	technically grade	+ → ○	-

## U

substance	concentration	20°C	60°C
Urea, aqueous	≤ 33 %	+	+

## V

substance	concentration	20°C	60°C
Vaseline	technically grade	+ → ○	○

## W

substance	concentration	20°C	60°C
Washing up liquids	usual	+	+
Water, distilled		+	+
Wine		+	

## X

substance	concentration	20°C	60°C
Xylene		○	-

## Z

substance	concentration	20°C	60°C
Zinc sludge		+	+

## For all statements be valid

This product information based on our present know-how and experience. We strongly recommend doing application tests, because of the different influence of processing. They are typical values, not to be construed as specification, so there are no legal rights depending on this index. Respect trade mark rights if necessary. Feel free to contact us for additional technical information.

We would like to point out that the results mentioned in the table can be affected by incalculable heavy conditions like recurrent storage in the mentioned substances. The temperature, mechanically stress and duration of application can load the material in different ways and therefore in a lot of cases an individual advice as well as a practical test is absolutely necessary.

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