



Crastin[®] 6130 NC010

THERMOPLASTIC POLYESTER RESIN

Product information

| | | |
|----------------------|-------|-----------|
| Resin Identification | PBT | ISO 1043 |
| Part Marking Code | >PBT< | ISO 11469 |

Rheological properties

| | | |
|---|---------------------------|---------------------|
| Melt volume-flow rate | 14 cm ³ /10min | ISO 1133 |
| Melt mass-flow rate | 16 g/10min | ISO 1133 |
| Temperature | 250 °C | ISO 1133 |
| Load | 2.16 kg | ISO 1133 |
| Melt mass-flow rate, Temperature | 250 °C | ISO 1133 |
| Melt mass-flow rate, Load | 2.16 kg | ISO 1133 |
| Viscosity number | 130 cm ³ /g | ISO 307, 1157, 1628 |
| Intrinsic viscosity | 1.1 - | ISO 307, 1157, 1628 |
| Moulding shrinkage, parallel | 1.7 % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 1.7 % | ISO 294-4, 2577 |
| Postmoulding shrinkage, normal, 48h at 80°C | 0.5 % | ISO 294-4 |
| Postmoulding shrinkage, parallel, 48h at 80°C | 0.4 % | ISO 294-4 |

Typical mechanical properties

| | | |
|---------------------------------------|-----------------------|--------------|
| Tensile Modulus | 2600 MPa | ISO 527-1/-2 |
| Yield stress | 59 MPa | ISO 527-1/-2 |
| Yield strain | 8 % | ISO 527-1/-2 |
| Nominal strain at break | 50 % | ISO 527-1/-2 |
| Strain at break, 50mm/min | 110 % | ISO 527-1/-2 |
| Charpy notched impact strength, 23°C | 5 kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 4.5 kJ/m ² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 4 kJ/m ² | ISO 180/1A |
| Poisson's ratio | 0.38 - | |

Thermal properties

| | | |
|--|---------------|----------------|
| Melting temperature, 10°C/min | 225 °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa | 50 °C | ISO 75-1/-2 |
| Temp. of deflection under load, 1.8 MPa, annealed | 60 °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 115 °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa, annealed | 180 °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion, parallel | 108 E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 144 E-6/K | ISO 11359-1/-2 |
| Thermal conductivity of melt | 0.25 W/(m K) | |
| Spec. heat capacity of melt | 2050 J/(kg K) | |
| RTI, electrical, 0.75mm | 75 °C | UL 746B |
| RTI, electrical, 1.5mm | 75 °C | UL 746B |
| RTI, electrical, 3mm | 75 °C | UL 746B |
| RTI, impact, 0.75mm | 75 °C | UL 746B |



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|-----------------------|-------|---------|
| RTI, impact, 1.5mm | 75 °C | UL 746B |
| RTI, impact, 3mm | 75 °C | UL 746B |
| RTI, strength, 0.75mm | 75 °C | UL 746B |
| RTI, strength, 1.5mm | 75 °C | UL 746B |
| RTI, strength, 3mm | 75 °C | UL 746B |

Flammability

| | | |
|--------------------------------------|------------|----------------------|
| Burning Behav. at 1.5mm nom. thickn. | HB class | IEC 60695-11-10 |
| Thickness tested | 1.5 mm | IEC 60695-11-10 |
| UL recognition | yes - | UL 94 |
| Burning Behav. at thickness h | HB class | IEC 60695-11-10 |
| Thickness tested | 0.81 mm | IEC 60695-11-10 |
| UL recognition | yes - | UL 94 |
| Oxygen index | 22 % | ISO 4589-1/-2 |
| FMVSS Class | B - | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm | <80 mm/min | ISO 3795 (FMVSS 302) |

Electrical properties

| | | |
|-----------------------------|-------------|---------------|
| Relative permittivity, 1MHz | 3.2 - | IEC 62631-2-1 |
| Volume resistivity | >1E13 Ohm*m | IEC 62631-3-1 |
| Electric strength | 26 kV/mm | IEC 60243-1 |
| Comparative tracking index | 600 - | IEC 60112 |

Other properties

| | | |
|-----------------|------------------------|----------|
| Density | 1300 kg/m ³ | ISO 1183 |
| Density of melt | 1110 kg/m ³ | |

VDA Properties

| | | |
|-------------------------------|--------|----------|
| Fogging, G-value (condensate) | 0.1 mg | ISO 6452 |
|-------------------------------|--------|----------|

Injection

| | |
|---------------------------------|---------|
| Drying Recommended | yes |
| Drying Temperature | 120 °C |
| Drying Time, Dehumidified Dryer | 2 - 4 h |
| Processing Moisture Content | ≤0.04 % |
| Melt Temperature Optimum | 250 °C |
| Min. melt temperature | 240 °C |
| Max. melt temperature | 260 °C |
| Mold Temperature Optimum | 80 °C |
| Min. mould temperature | 30 °C |
| Max. mould temperature | 130 °C |
| Hold pressure range | ≥60 MPa |
| Hold pressure time | 4 s/mm |



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Back pressure

As low as MPa
possible

Ejection temperature

170 °C

Extrusion

Drying Temperature

110 - 130 °C

Drying Time, Dehumidified Dryer

2 - 4 h

Processing Moisture Content

≤0.04 %

Melt Temperature Optimum

250 °C

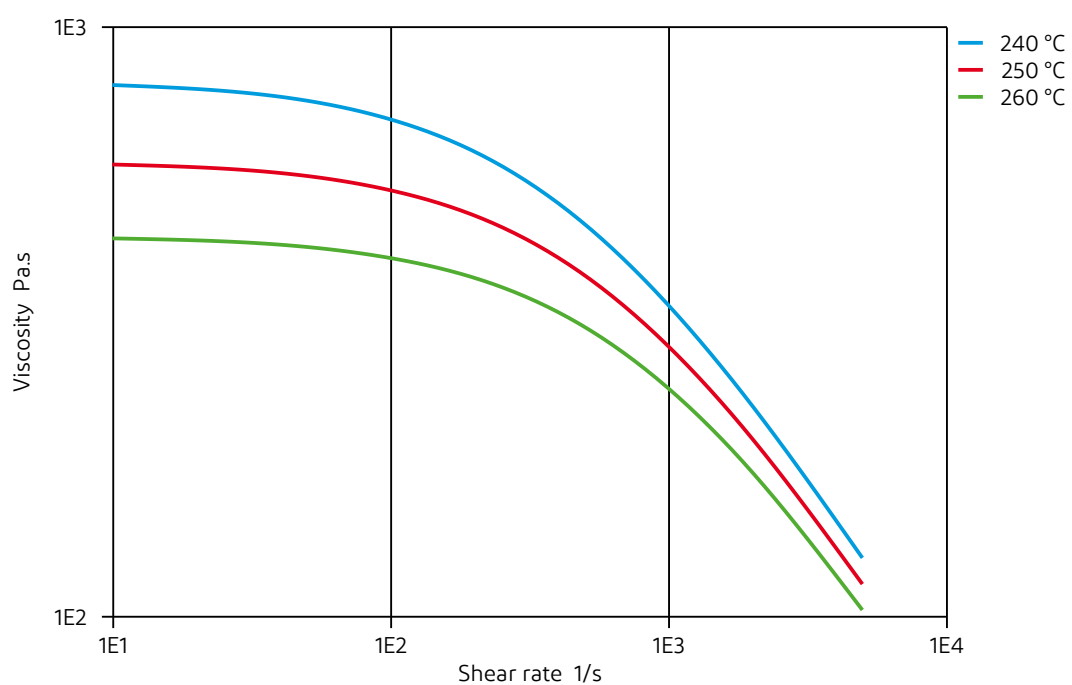
Melt Temperature Range

240 - 260 °C

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Viscosity-shear rate

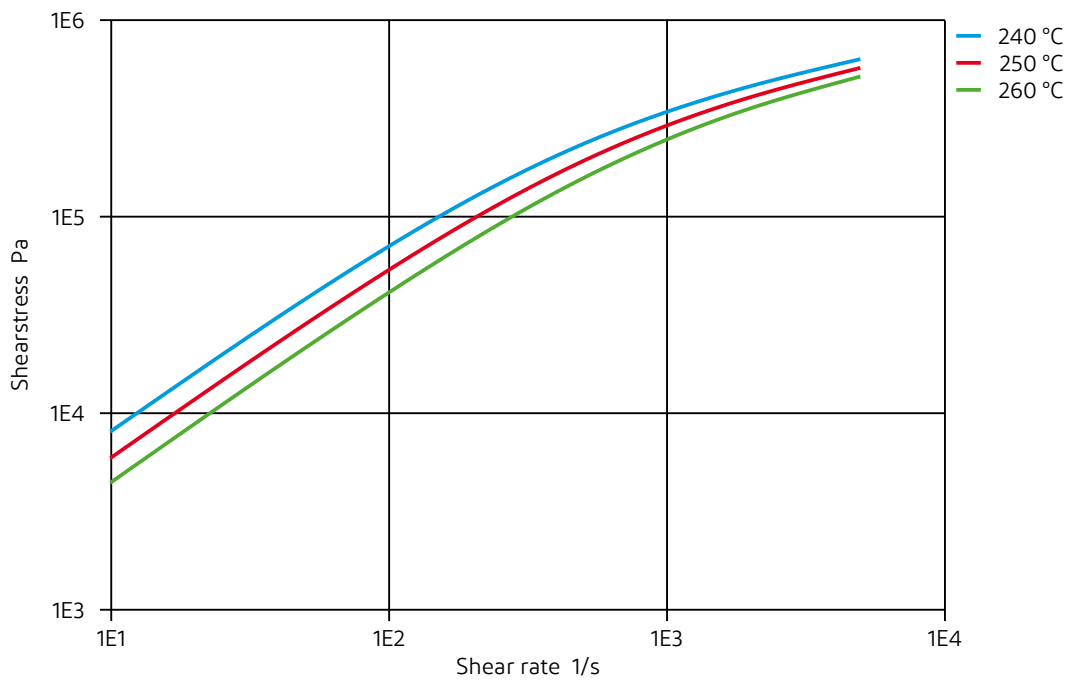




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Shearstress-shear rate

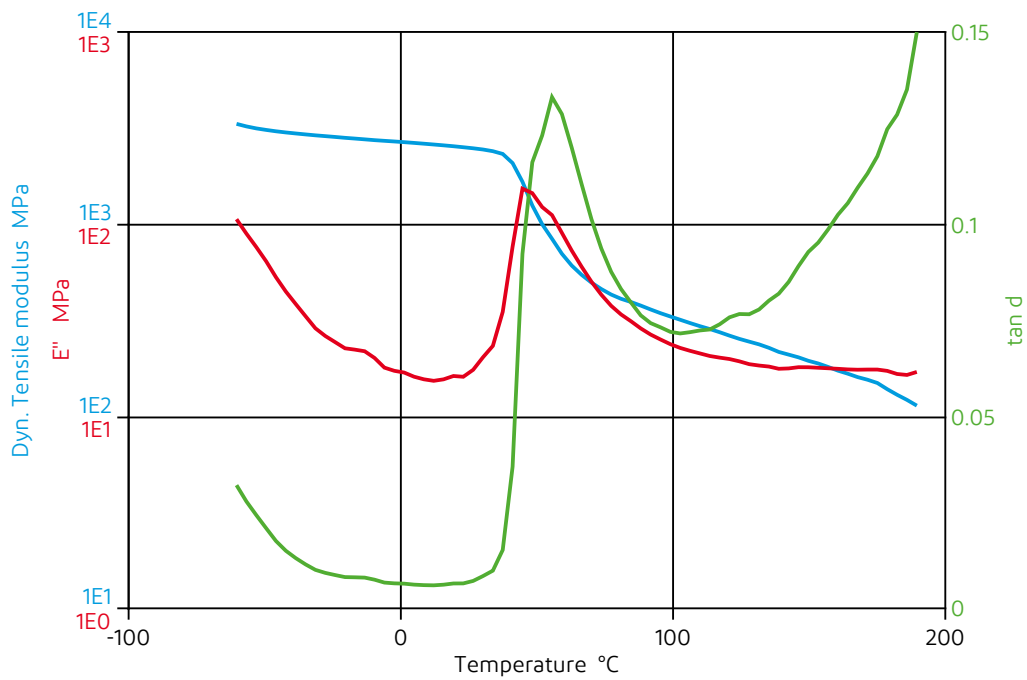




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THERMOPLASTIC POLYESTER RESIN

Dynamic Tensile modulus-temperature
(measured on Crastin[®] S600F20 NC010)

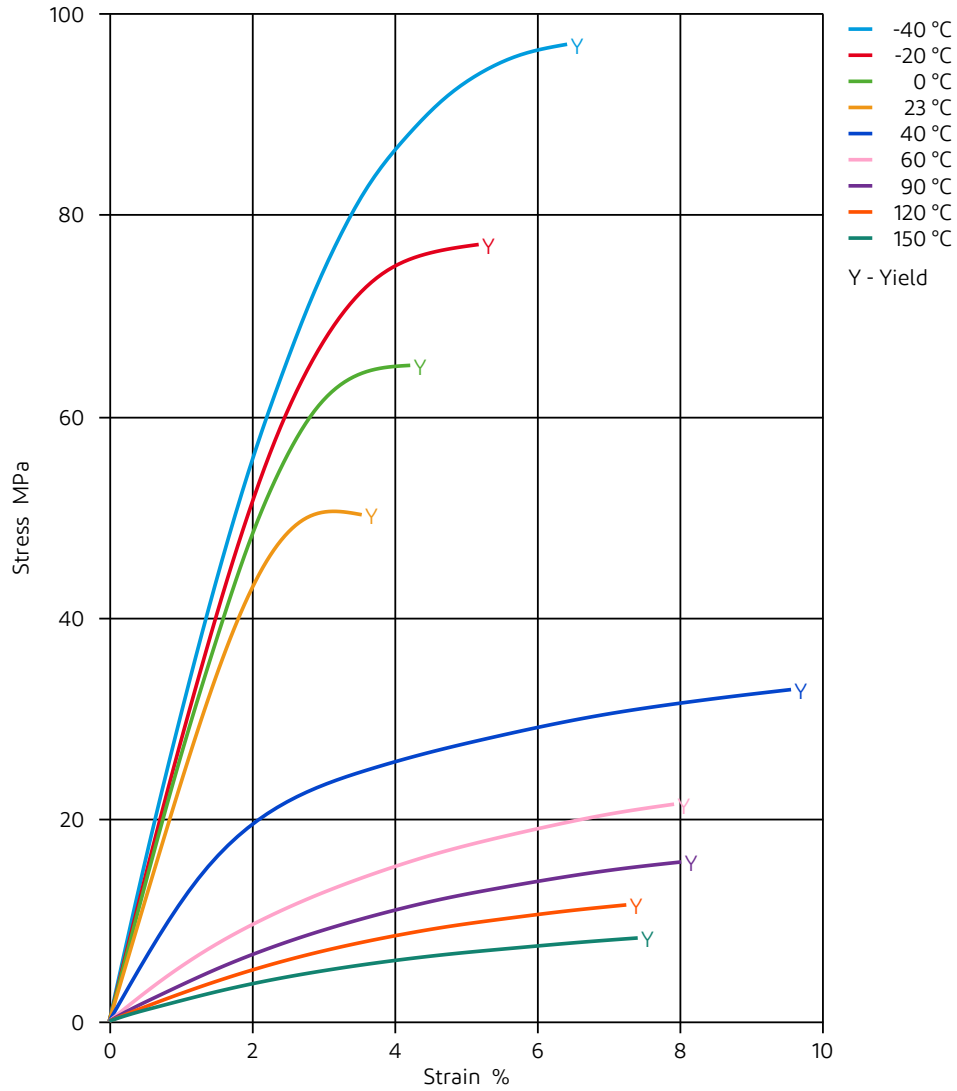




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THERMOPLASTIC POLYESTER RESIN

Stress-strain
(measured on Crastin® 6129 NC010)

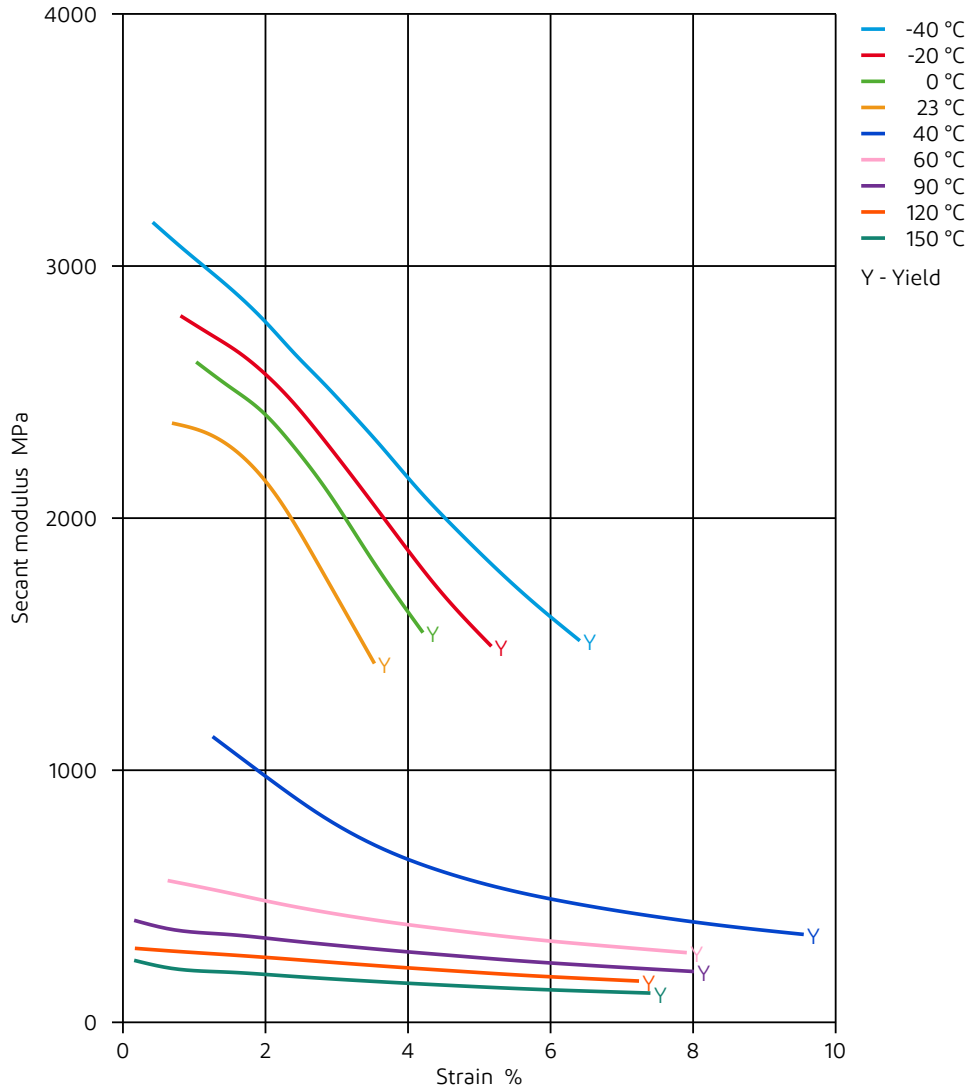




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THERMOPLASTIC POLYESTER RESIN

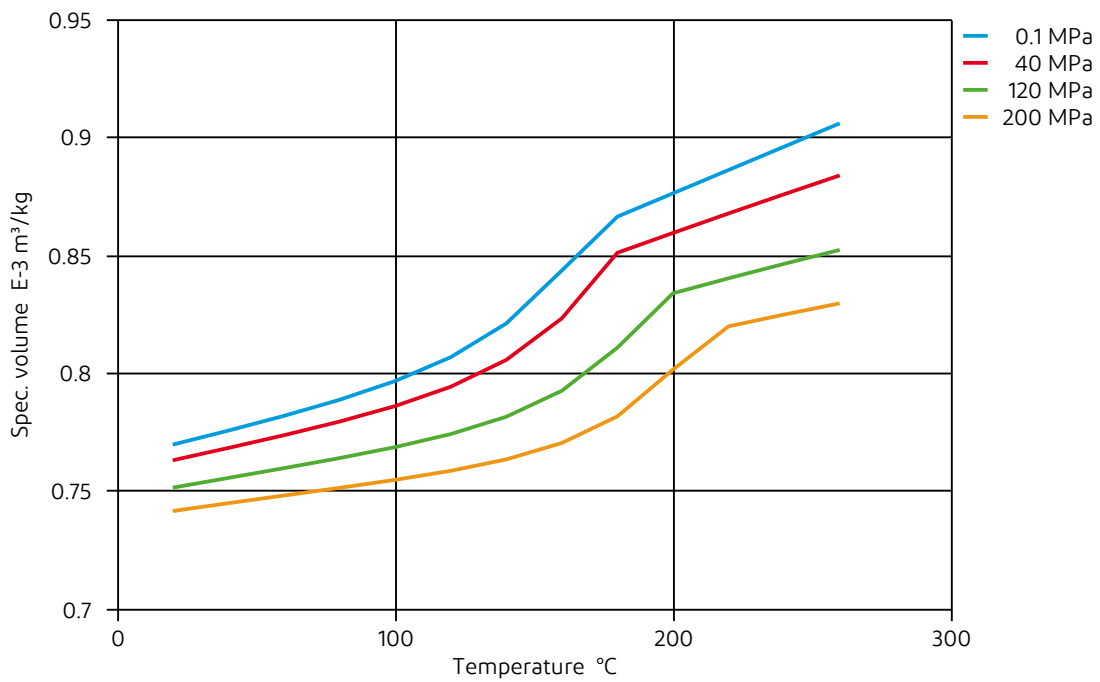
Secant modulus-strain
(measured on Crastin[®] 6129 NC010)



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Specific volume-temperature (pvT)



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Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass), 23°C
- ✓ Citric Acid solution (10% by mass), 23°C
- ✓ Lactic Acid (10% by mass), 23°C
- ✗ Hydrochloric Acid (36% by mass), 23°C
- ✗ Nitric Acid (40% by mass), 23°C
- ✗ Sulfuric Acid (38% by mass), 23°C
- ✗ Sulfuric Acid (5% by mass), 23°C
- ✗ Chromic Acid solution (40% by mass), 23°C

Bases

- ✗ Sodium Hydroxide solution (35% by mass), 23°C
- ✓ Sodium Hydroxide solution (1% by mass), 23°C
- ✓ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols

- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

Hydrocarbons

- ✓ n-Hexane, 23°C
- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

Ketones

- ✓ Acetone, 23°C

Ethers

- ✓ Diethyl ether, 23°C

Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- ✗ SAE 10W40 multigrade motor oil, 130°C
- ✗ SAE 80/90 hypoid-gear oil, 130°C
- ✓ Insulating Oil, 23°C

Standard Fuels

- ✗ ISO 1817 Liquid 1 - E5, 60°C
- ✗ ISO 1817 Liquid 2 - M15E4, 60°C
- ✗ ISO 1817 Liquid 3 - M3E7, 60°C
- ✗ ISO 1817 Liquid 4 - M15, 60°C
- ✗ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✗ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✗ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

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Salt solutions

- ✓ Sodium Chloride solution (10% by mass), 23°C
- ✓ Sodium Hypochlorite solution (10% by mass), 23°C
- ✓ Sodium Carbonate solution (20% by mass), 23°C
- ✓ Sodium Carbonate solution (2% by mass), 23°C
- ✓ Zinc Chloride solution (50% by mass), 23°C

Other

- ✓ Ethyl Acetate, 23°C
- ✗ Hydrogen peroxide, 23°C
- ✗ DOT No. 4 Brake fluid, 130°C
- ✗ Ethylene Glycol (50% by mass) in water, 108°C
- ✓ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✓ 50% Oleic acid + 50% Olive Oil, 23°C
- ✓ Water, 23°C
- ✗ Water, 90°C
- ✓ Phenol solution (5% by mass), 23°C

Symbols used:

- ✓ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).
- ✗ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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