CAMPUS® Datasheet

Hytrel® 5526 - TPC
DuPont Engineering Polymers

Product Texts

Common features of Hytrel® thermoplastic polyester elastomer include mechanical and physical properties such as exceptional toughness and resilience, high resistance to creep, impact and flex fatigue, flexibility at low temperatures and good retention of properties at elevated temperatures. In addition, it resists many industrial chemicals, oils and solvents. Special grades include heat stabilised, flame retardant, food contact compliant, blow molding and extrusion grades. Concentrates offered include black pigments, UV protection additives, heat stabilisers, and flame retardants.

Hytrel® thermoplastic polyester elastomer is plasticiser free.

The good melt stability of Hytrel® thermoplastic polyester elastomer normally enables the recycling of properly handled production waste. If recycling is not possible, DuPont recommends, as the preferred option, incineration with energy recovery (-24 kJ/g of base polymer) in appropriately equipped installations.

For disposal, local regulations have to be observed.

Hytrel® thermoplastic polyester elastomer typically is used in demanding applications in the automotive, fluid power, electrical/electronic, consumer goods, appliance and power tool, sporting goods, furniture, industrial and off-road transportation/equipment industry.

Hytrel® 5526 is a medium modulus Hytrel® grade with nominal durometer hardness of 55D. It contains non-discoloring stabilizer. It is specially recommended for injection molding applications requiring high flow properties.

Typical applications:

Seals, packing and gaskets; gears and bearings.

Rheological properties	Value	Unit	Test Standard
Melt volume-flow rate, MVR	**17.5**	cm³/10min	ISO 1133
Temperature	**220**	°C	ISO 1133
Load	**2.16**	kg	ISO 1133
Molding shrinkage, parallel	**1.4**	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.4**	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**190**	MPa	ISO 527-1/-2
Stress at 10% elongation	**11**	MPa	ISO 527-1/-2
Stress at break TPE	**40**	MPa	ISO 527-1/-2
Strain at break TPE	**>300**	%	ISO 527-1/-2
Tensile creep modulus, 1h	**170**	MPa	ISO 899-1
Tensile creep modulus, 1000h	**130**	MPa	ISO 899-1
Charpy impact strength, +23°C	**N**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**N**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**N**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**150**	kJ/m²	ISO 179/1eA
Tensile notched impact strength, +23°C	**270**	kJ/m²	ISO 8256/1
Tear strength	**133**	kN/m	ISO 34-1
Abrasion resistance	**120**	mm³	ISO 4649
Shore D hardness, 15s	**51**	-	ISO 7619-1

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**203**	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**-20**	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.80 MPa	**45**	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**65**	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	**75**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**200**	E-6/K	ISO 11359-1/-2

Coeff. of linear therm. expansion, normal	**200**	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	**HB**	class	IEC 60695-11-10
Thickness tested (1.5)	**1.5**	mm	IEC 60695-11-10
Yellow Card available	**Yes**	-	-
Burning Behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested (h)	**3.0**	mm	IEC 60695-11-10
Yellow Card available	**Yes**	-	-
Burning rate, Thickness 1 mm	**28**	mm/min	ISO 3795 (FMVSS 302)
FMVSS	**SE/B**	-	ISO 3795 (FMVSS 302)
Oxygen index	**21**	%	ISO 4589-1/-2

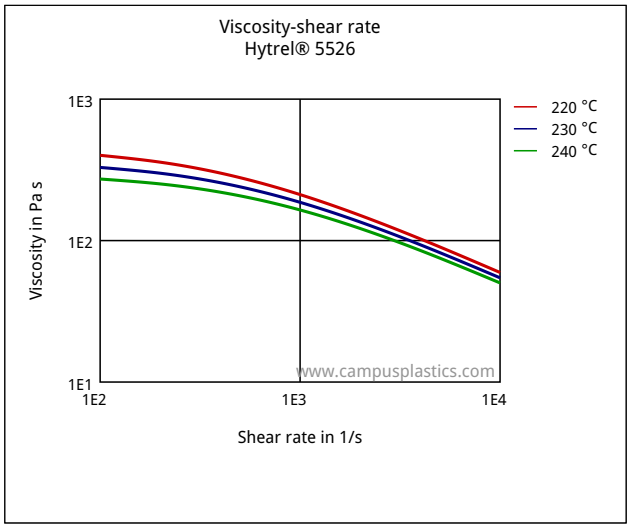
Electrical properties	**Value**	**Unit**	**Test Standard**
Relative permittivity, 100Hz	**4.9**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**4.6**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**90**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**375**	E-4	IEC 62631-2-1
Volume resistivity	**4E11**	Ohm*m	IEC 62631-3-1
Surface resistivity	**>1E15**	Ohm	IEC 62631-3-2
Electric strength	**20**	kV/mm	IEC 60243-1
Comparative tracking index	**600**	-	IEC 60112

Other properties	**Value**	**Unit**	**Test Standard**
Water absorption	**0.6**	%	Sim. to ISO 62
Humidity absorption	**0.2**	%	Sim. to ISO 62
Density	**1190**	kg/m³	ISO 1183

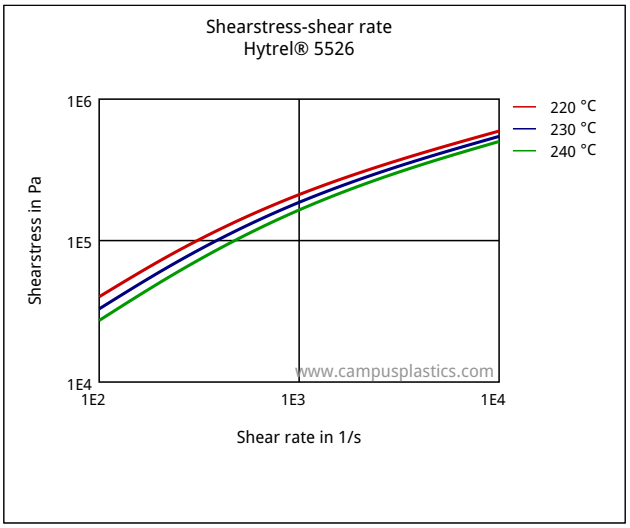
Rheological calculation properties	**Value**	**Unit**	**Test Standard**
Density of melt	**1040**	kg/m³	-
Thermal conductivity of melt	**0.19**	W/(m K)	-
Spec. heat capacity melt	**2110**	J/(kg K)	-
Eff. thermal diffusivity	**9E-8**	m²/s	-

Diagrams

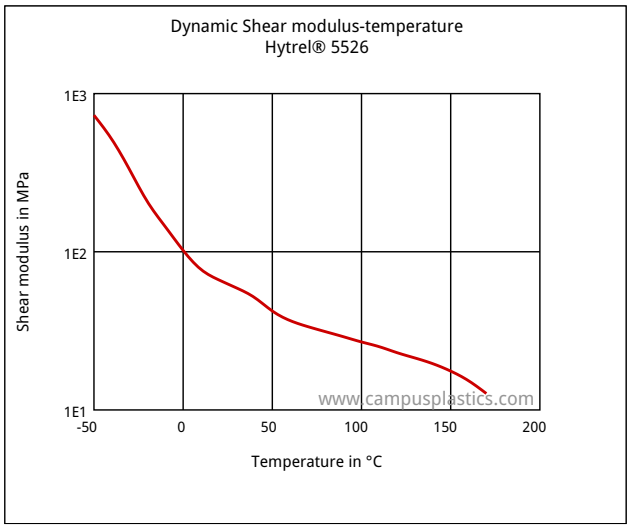
Viscosity-shear rate



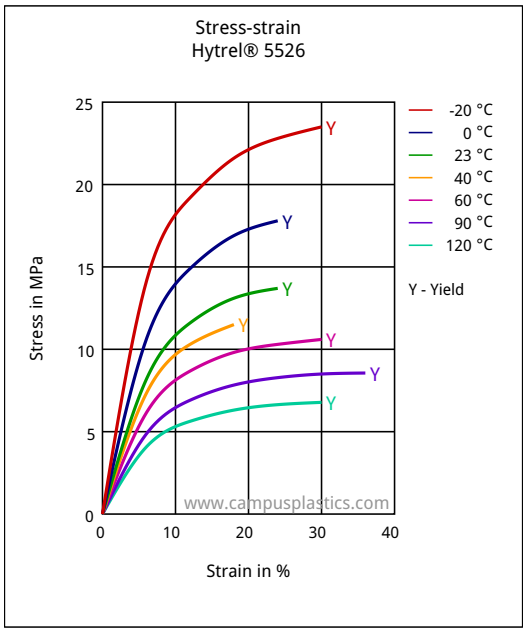
Shearstress-shear rate



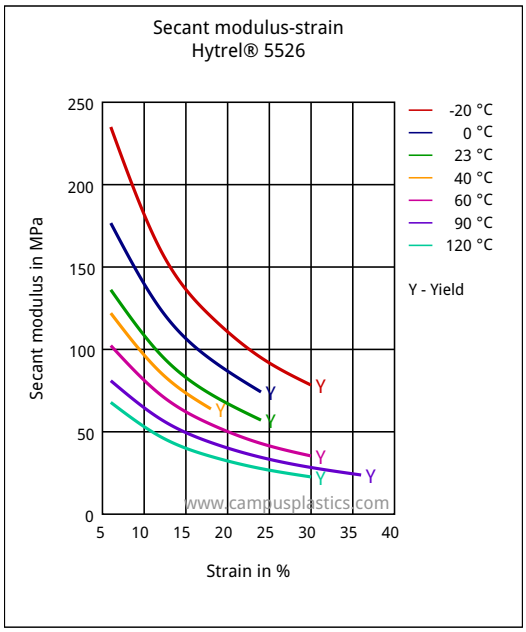
Dynamic Shear modulus-temperature



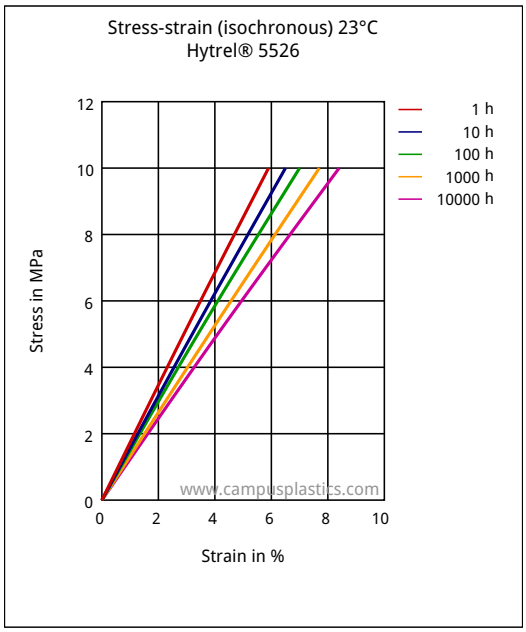
Stress-strain



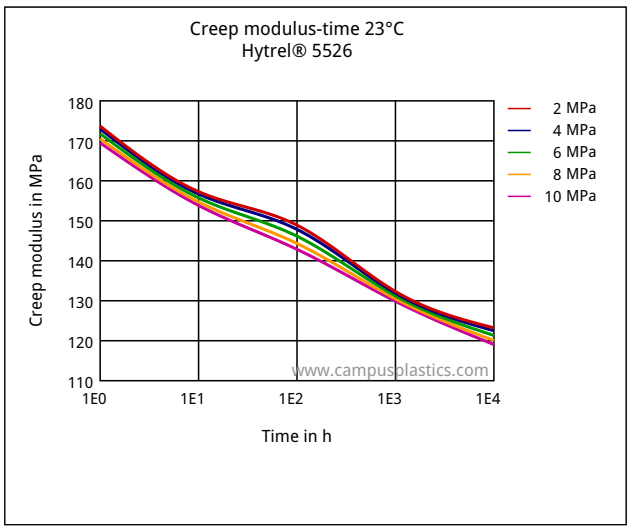
Secant modulus-strain



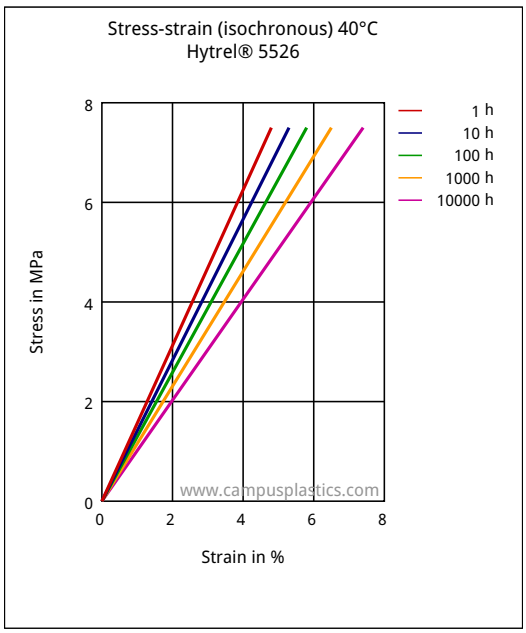
Stress-strain (isochronous) 23°C



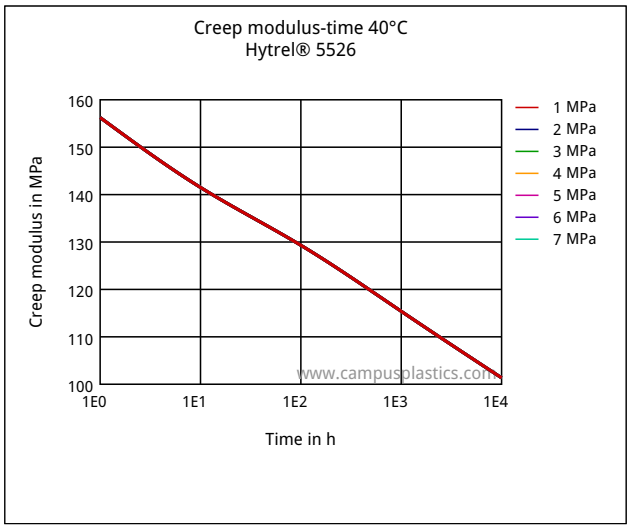
Creep modulus-time 23°C



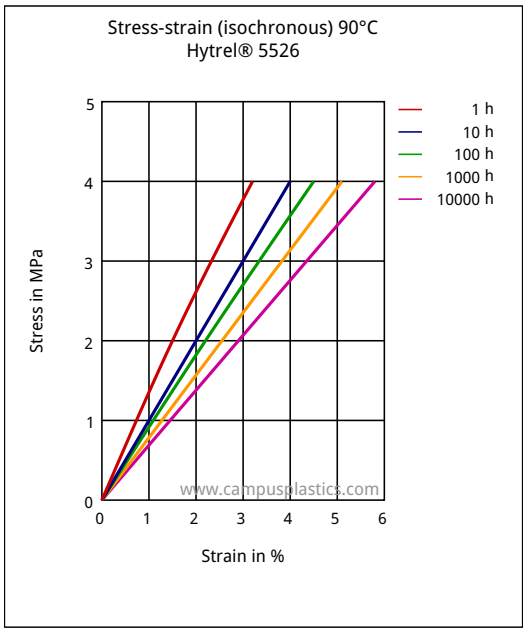
Stress-strain (isochronous) 40°C



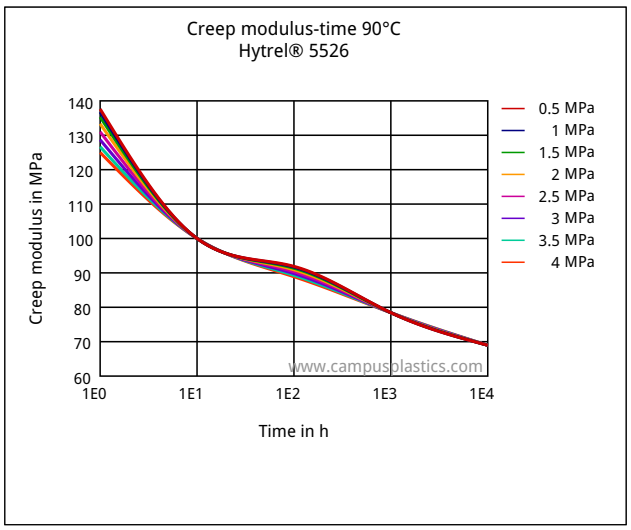
Creep modulus-time 40°C



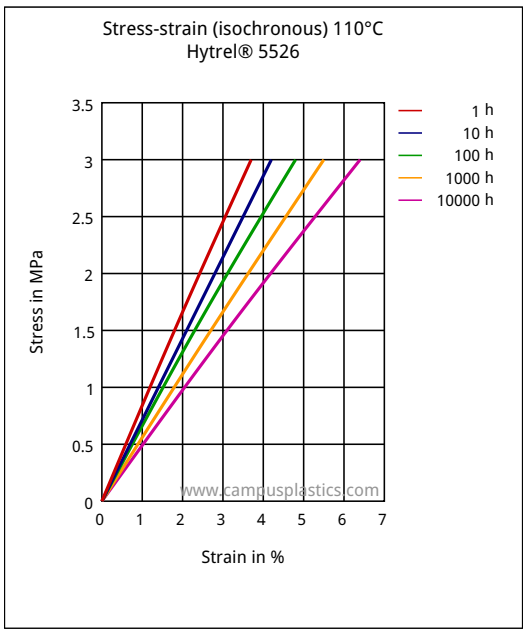
Stress-strain (isochronous) 90°C



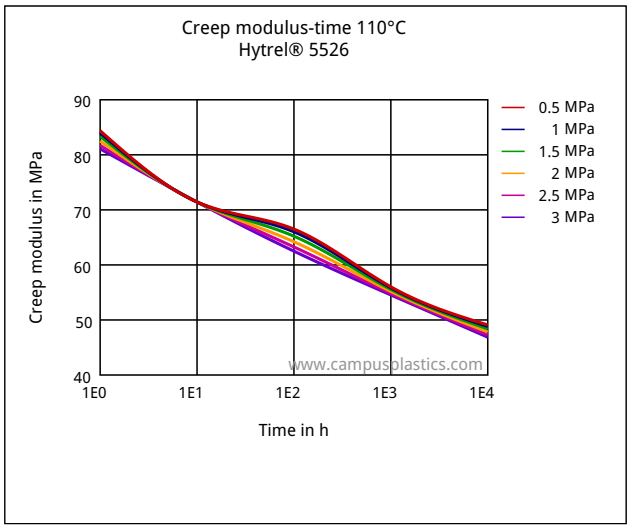
Creep modulus-time 90°C



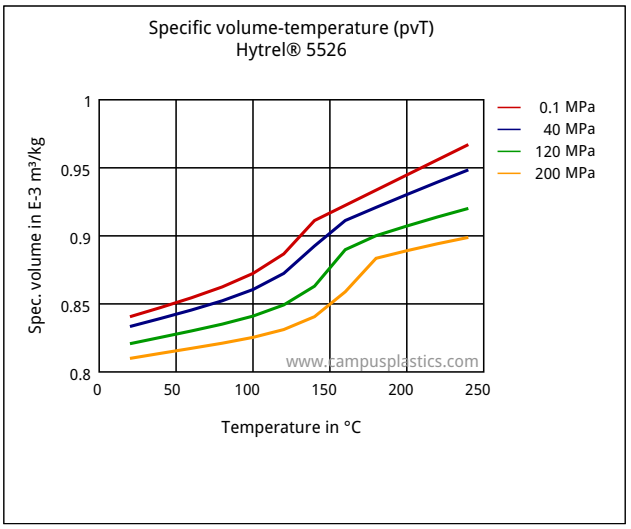
Stress-strain (isochronous) 110°C



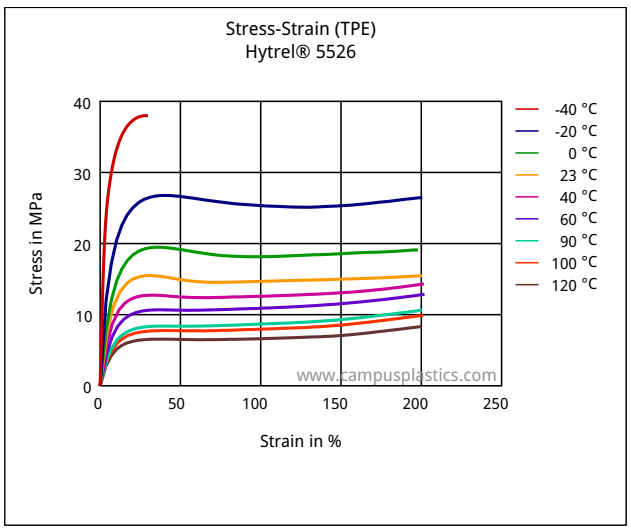
Creep modulus-time 110°C



Specific volume-temperature (pvT)



Stress-Strain (TPE)



Characteristics

Processing
Injection Molding, Thermoforming

Special Characteristics
Light stabilized or stable to light

Delivery form
Pellets

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa

Other text information

Injection molding

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)
- Motor oil OS206 304 Ref.Eng.Oil, ISP (135°C)
- Automatic hypoid-gear oil Shell Donax TX (135°C)
- Hydraulic oil Pentosin CHF 202 (125°C)

Standard Fuels

- ISO 1817 Liquid 1 (60°C)
- ISO 1817 Liquid 2 (60°C)
- ISO 1817 Liquid 3 (60°C)
- ISO 1817 Liquid 4 (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)

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)
- 50% Oleic acid + 50% Olive Oil (23°C)
- Water (23°C)
- Deionized water (90°C)
- Phenol solution (5% by mass) (23°C)

All data provided according to ISO 10350 for single points and ISO 11403 for multipoints.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
Test temperatures are 23°C unless otherwise stated.