

Product Information

March 2003

Ultraform[®] N2320 003 (POM)

Product description

Rapidly solidifying standard grade for injection molding. Contains a mold release agent.

Abbreviated designation according to ISO 1043-1: POM
Designation according to ISO 9988-1: POM-K, M-GNR, 03-002

Physical form and storage

Ultraform is supplied in the form of granules having a bulk density of approx. 850 g/l. Standards packs are the 25 kg PE bag and the 1000 kg Oktabin (octagonal container). Ultraform is not subject to change when it is stored in dry, ventilated rooms. After relatively long storage (>1 year) or when handling material from previously opened containers, preliminary drying is recommended in order to remove any moisture which has been absorbed.

Product safety

Ultraform is not a hazardous material as defined in the German Ordinance on Hazardous Materials.

If Ultraform is processed properly little or no formaldehyde occurs in the region of the processing machine. Measures should be taken to ensure ventilation and venting of the work area, preferably by means of an extraction hood over the barrel unit.

Ultraform decomposes when subjected to excessive heat. The decomposition products formed in this case consist almost exclusively of formaldehyde, a gas which has a pungent smell even at very low concentrations and irritates the mucous membranes. Decomposition can rapidly result in the build-up of a high gas pressure in the barrel of the processing unit. If the die is sealed there may be a sudden release of pressure via the filling hopper.

Contamination of Ultraform by thermoplastics that cause decomposition of polyacetals, e.g. PVC or plastics containing halogenated fire protection agents, must be avoided under all circumstances. Even small quantities can cause uncontrolled and rapid decomposition of Ultraform during processing.

Pellets and finished parts must not be allowed to come into contact with strong acids (especially concentrated hydrochloric acid) since they cause Ultraform to decompose.

Detailed safety and environmental information is contained in the Ultraform brochure and the material safety data sheet. Both are available from the Ultra-Infopoint under phone +49-621-60-78780 or fax +49-621-60-78730.

Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed. In order to check the availability of products please contact us or our sales agency.

Ultraform[®] N2320 003

Typical values at 23°C for uncoloured products	Test method	Unit	Values
Properties			
Abbreviated term	ISO 1043	-	POM
Density	ISO 1183	g/cm ³	1.40
Water absorption, equilibrium in water at 23°C	ISO 62	%	0.80
Moisture absorption, equilibrium 23°C/50% r.h.	ISO 62	%	0.20
Processing			
Method: Injection moulding (M), Extrusion (E), Blow moulding (B)	-		M
Melting temperature, DSC	ISO 3146	°C	167
Melt volume rate MVR 190/2.16	ISO 1133	cm ³ /10 min	7.50
Melt temperature, Injection moulding	-	°C	190 - 230
Mould temperature	-	°C	60 - 100
Moulding shrinkage, free, longitudinal / transverse	-	%	2.00 / 1.90
Flammability			
UL94 rating at 1.6 mm thickness	UL 94	class	94HB
Automotive materials (thickness d ≥ 1mm)	FMVSS 302	-	+
Mechanical properties			
Tensile modulus	ISO 527-2	MPa	2700
Yield stress (v = 50 mm/min), Stress at break (v = 5 mm/min)*	ISO 527-2	MPa	65
Yield strain (v = 50 mm/min)	ISO 527-2	%	9.4
Nominal strain at break, Strain at break*	ISO 527-2	%	27.0
Tensile creep modulus, 1000 h, strain ≤ 0.5%, +23°C	ISO 899-1	MPa	1400
Charpy unnotched impact strength ²⁾ +23°C	ISO 179/1eU	kJ/m ²	210c
Charpy unnotched impact strength -30°C	ISO 179/1eU	kJ/m ²	190c
Charpy notched impact strength ²⁾ +23°C	ISO 179/1eA	kJ/m ²	6
Charpy notched impact strength -30°C	ISO 179/1eA	kJ/m ²	5.5
Ball indentation hardness H 358/30	ISO 2039-1	MPa	145
Thermal properties			
Deflection temperature 1.8 MPa (HDT A)	ISO 75-2	°C	100
Max. service temperature (short cycle operation) ³⁾	-	°C	100
Thermal coefficient of linear expansion, longitudinal (23–80) °C	DIN 53752	10 ⁻⁴ /K	1.1
Electrical properties			
Dielectric constant at 1 MHz	IEC 60250	-	3.8
Dissipation factor at 1 MHz	IEC 60250	10 ⁻⁴	50
Volume resistivity	IEC 60093	Ω · m	10 ¹³
Surface resistivity	IEC 60093	Ω	10 ¹³
Dielectric strength K20/K20 (in transformer oil)	IEC 60243-1	kV/mm	40
CTI, solution A	IEC 60112	-	600

Footnotes:

2) N = no break.

3) Empirical values determined on articles repeatedly subjected to the temperature concerned for several hours at a time over a period of several years.

The proviso is that the articles were properly designed and processed according to our recommendations.