INEOS STYROLUTION

Terblend N NM-21EF

Acrylonitrile Butadiene Styrene / Polyamide (ABS/PA)

TECHNICAL DATASHEET

DESCRIPTION

Terblend® N NM-21EF is a UV-stabilized ABS/PA blend with high impact toughness, excellent flowability and enhanced heat resistance. It is especially suitable for matte automotive interior applications.

FEATURES

- Excellent flow for high surface quality appearance
- Enhanced softening temperature
- High impact strength
- UV-stabilized

APPLICATIONS

- Unpainted automotive interior parts
- Center consoles
- Loudspeaker grills
- Gardening tools

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Volume Rate, 240 °C/10 kg	ISO 1133	cm³/10 min	60
Mechanical Properties			
Tensile Modulus	ISO 527	MPa	2100
Tensile Stress at Yield, 23 °C	ISO 527	MPa	45
Tensile Strain at Yield, 23 °C	ISO 527	%	3.1
Nominal Strain at Break, 23 °C	ISO 527	%	25
Flexural Modulus, 23 °C	ISO 178	MPa	2000
Flexural Strength, 23 °C	ISO 178	MPa	65
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m²	70
Charpy Notched Impact Strength, -30 °C	ISO 179/1eA	kJ/m²	12
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m²	65
Izod Notched Impact Strength, -30 °C	ISO 180/A	kJ/m²	11
Tensile Modulus after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	MPa	1400
Tensile Stress at Yield after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	MPa	36
Tensile Strain at Yield after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	%	5
Nominal Strain at Break after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	%	> 50
Thermal Properties			

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Property, Test Condition	Standard	Unit	Values
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	110
Vicat Softening Temperature, VST/A/50 (10N, 50 °C/h)	ISO 306	°C	200
Coefficient of Linear Thermal Expansion	ISO 11359	10^{-6}/°C	100
Heat Deflection Temperature A; (unannealed; 1.8 MPa)	ISO 75	°C	63
Heat Deflection Temperature B; (unannealed; 0.45 MPa)	ISO 75	°C	88
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	86
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	98
Electrical Properties			
Relative Permittivity (1 MHz)	IEC 60250	-	3.4
Dissipation Factor (1 MHz)	IEC 60250	10^{-4}	180
Volume Resistivity	IEC 60093	Ohm*m	$>10^{13}$
Surface Resistivity	IEC 60093	Ohm	10^{14}
Other Properties			
Density	ISO 1183	kg/m³	1070
Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 62	%	1.3
UL94 rating at 1.5 mm thickness	IEC 60695-11-10	-	HB
Processing			
Melt Temperature Range	ISO 294	°C	240 - 270
Mold Temperature Range	ISO 294	°C	40 - 80
Drying Temperature	-	°C	80 - 90
Drying Time	-	h	4 - 8
Molding shrinkage, free, longitudinal	-	%	0.7

Typical values for uncolored products

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SUPPLY FORM

Terblend® N is supplied as cylindrical or lenticular pellets. The bulk density is from about 0.55-0.65 g/cm3. Standard pack: 25 kg PE sack, palletized and film-secured. Subject to agreement, other means of packing are possible, e.g. 1000 kg bulk containers (octagonal IBCs, or intermediate bulk containers, made from corrugated board with sack insert) or shipping by road tanker can be arranged. Terblend® N pellets can be stored for prolonged periods in dry areas subject to normal temperature control without any changes in mechanical properties. However, with sensitive colors storage over some years can cause some color change. In poor storage conditions, Terblend® N absorbs moisture, which can be removed again by drying. Packs stored in cold areas should be brought to ambient temperature before opening to prevent condensation on the pellets.

PRODUCT SAFETY

Given appropriate processing of the products and suitable ventilation measures in production areas, no adverse effects on the health of process operator have been found. Workplace limits for styrene, acrylonitrile and 1,3-butadiene, as given in the applicable national listings, must be adhered to. The values currently applicable in Germany under TRGS 900 (issue of September, 1999) for maximum workplace concentrations are as follows. Styrene: 20 ml/m3 = 85 mg/m3; acrylonitrile: 3 ml/m3 = 7 mg/m3; 1,3-butadiene: 5 ml/m3 = 11 mg/m3. Appendix I of Directive 67/548/EWG (issue of 1999) classifies acrylonitrile and 1,3-butadiene in carcinogenic category II (substances which should be regarded as carcinogenic in humans). Experience has shown that during appropriate processing of Terblend® N with suitable ventilation the values obtained are well below the limits mentioned above. TRGS 402 (Germany) can be used for determining and assessing the concentrations of hazardous substances in the air within working areas. Inhalation of gaseous degradation products (e.g. caprolactam), such as those which may arise on severe overheating of the material or during pumped evacuation, must be avoided. Further information can be found in our Terblend® N safety data sheets.

DISCLAIMER

The aforementioned data shall constitute the agreed contractual quality of the product sold by INEOS Styrolution at the time of passing of risk. INEOS Styrolution does not make any further warranty, representation or guarantee of any kind, express or implied, regarding the suitability of the product for any particular purpose or application and INEOS Styrolution disclaims all liability in connection therewith. The customer himself is required to verify whether or not the product is suitable for the further processing or application intended and whether or not the product complies with the relevant statutory requirements. Unless explicitly and individually otherwise agreed in writing, INEOS Styrolution's sole and exclusive liability with respect to its products is set forth in INEOS Styrolution's General Terms and Conditions for Sale.

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