INEOS STYROLUTION

TERBLEND N NM-11

Acrylonitrile Butadiene Styrene / Polyamide (ABS/PA)

TECHNICAL DATASHEET

DESCRIPTION

Terblend® N NM-11 is an ABS/PA blend with excellent impact tougness and good flowability.

FEATURES

- High impact strength
- Easy processing

APPLICATIONS

- Automotive parts
- Ski toplayers
- Helmets
- Housings

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Volume Rate, 240 °C/10 kg	ISO 1133	cm³/10 min	30
Mechanical Properties			
Tensile Modulus	ISO 527	MPa	2000
Tensile Stress at Yield, 23 °C	ISO 527	MPa	43
Tensile Strain at Yield, 23 °C	ISO 527	%	3.5
Nominal Strain at Break, 23 °C	ISO 527	%	> 50
Flexural Modulus, 23 °C	ISO 178	MPa	1800
Flexural Strength, 23 °C	ISO 178	MPa	62
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m²	65
Charpy Notched Impact Strength, -30 °C	ISO 179/1eA	kJ/m²	15
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m²	65
Izod Notched Impact Strength, -30 °C	ISO 180/A	kJ/m²	15
Hardness, Ball Indentation	ISO 2039-1	MPa	86
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	34
Tensile Strain at Yield after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	%	5.5
Nominal Strain at Break after Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 527	%	> 50

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Property, Test Condition	Standard	Unit	Values
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	102
Vicat Softening Temperature, VST/A/50 (10N, 50 °C/h)	ISO 306	°C	160
Coefficient of Linear Thermal Expansion	ISO 11359	10^{-6}/°C	100
Heat Deflection Temperature A; (unannealed; 1.8 MPa)	ISO 75	°C	65
Heat Deflection Temperature B; (unannealed; 0.45 MPa)	ISO 75	°C	85
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	85
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	97
Electrical Properties			
Relative Permittivity (1 MHz)	IEC 62631-2-1	-	2.9
Dissipation Factor (1 MHz)	IEC 62631-2-1	10^{-4}	150
Volume Resistivity	IEC 62631-3-1	Ohm*m	$>10^{13}$
Surface Resistivity	IEC 62631-3-1	Ohm	10^{14}
Other Properties			
Density	ISO 1183	kg/m³	1070
Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 62	%	1.2
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	60 - 80
Drying Temperature	-	°C	80 - 90
Drying Time	-	h	4 - 8
Molding shrinkage, free, longitudinal	-	%	0.7

Typical values for uncolored products
Please note that all processing data stated are only indicative and may vary depending on the individual processing complexities.
Please consult our local sales or technical representatives for details.

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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 above mentioned data are accurate to the best of our knowledge. They are based upon reputable labs and industry standard testing methods. These are only typical values and actual product specification may deviate at industrial range. Therefore, no data in this technical data sheet shall constitute a warranty or representation regarding product features, fitness of the product for a specific purpose or application or its processability. 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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