Novodur E211

Acrylonitrile Butadiene Styrene (ABS)

STYROLUTION
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Technical Datasheet

DESCRIPTION

Novodur® E211 is a high heat extrusion grade and suitable for blow molding

FEATURES

- High heat resistance
- High melt strength

APPLICATIONS

- Extruded sheets
- Blow moulded parts

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Volume Rate 220 °C/10 kg	ISO 1133	cm³/10 min	6
Mechanical Properties			
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m²	20
Izod Notched Impact Strength, -30 °C	ISO 180/A	kJ/m²	9
Charpy Notched Impact Strength, 23° C	ISO 179	kJ/m²	20
Charpy Notched Impact Strength, -30° C	ISO 179	kJ/m²	10
Charpy Unnotched, 23° C	ISO 179	kJ/m²	150
Charpy Unnotched, -30° C	ISO 179	kJ/m²	80
Tensile Stress at Yield, 23° C	ISO 527	MPa	45
Tensile Strain at Yield, 23° C	ISO 527	%	2.7
Tensile Modulus	ISO 527	MPa	2500
Nominal Strain at Break, 23 °C	ISO 527	%	> 15
Flexural Strength	ISO 178	MPa	73
Flexural Modulus	ISO 178	MPa	2400
Hardness, Ball Indentation	ISO 2039-1	MPa	105
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50°C/h, 50N)	ISO 306	°C	108
Heat Deflection Temperature A; (annealed, 1.8 MPa)	ISO 75	°C	101
Heat Deflection Temperature B; (annealed, 0.45 MPa)	ISO 75	°C	107

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Property, Test Condition	Standard	Unit	Values
Coefficient of Linear Thermal Expansion	ISO 11359	10^(-6)/°C	80
Electrical Properties			
Dissipation Factor (100 Hz)	IEC 60250	10^(-4)	50
Dissipation Factor (1 MHz)	IEC 60250	10^(-4)	90
Dielectric Strength, Short Time, 1.5 mm	IEC 60243-1	kV/mm	35
Relative Permittivity (100 Hz)	IEC 60250	-	3.1
Relative Permittivity (1 MHz)	IEC 60250	-	2.9
Comparative Tracking Index	IEC 60112	V	600
Other Properties			
Density	ISO 1183	kg/m³	1040
Processing			
Linear Mold Shrinkage	ISO 294-4	%	0.5 - 0.8
Melt Temperature Range	ISO 294	°C	210 - 240
Injection Velocity	ISO 294	mm/s	240
Drying Temperature		°C	80
Drying Time		h	2 - 4

Typical values for uncolored products

SUPPLY FORM

Novodur® is delivered in the form of cylindrical or spherical pellets. The bulk density of the pellets is from 0.55 to 0.65 g/cm³. Values may differ for special grades. Standard Packaging unit: 25 kg PE-bag on palette, shrunk or wrapped with PE film. In addition, delivery in larger units of up to 1000 kg (IBC = Intermediate Bulk Container) or silo trucks can be arranged. In dry areas with normal temperature control, Novodur pellets can be stored for relatively long periods of time without any change in mechanical properties. With unstable colors, however, storage over a number of years can give rise to some change in color. Under poor storage conditions, Novodur absorbs moisture, but this can be removed by drying.

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PRODUCT SAFETY

No adverse effects on the health of processing personnel have been observed where the products are correctly processed and the production areas are suitably ventilated. For styrene, alpha-methylstyrene, acrylonitrile, and butyl acrylate the maximum allowable workplace concentrations must be observed according to the pertaining national regulations. In Germany, the following limit values are valid TRGS 900 (Aug. 2004): styrene, MAK-value: 20 ml/m³; alpha-methylstyrene, MAK-value: 100 ml/m³; acrylonitrile, TRK-value: 3 ml/m³, and butyl acrylate, MAK-value: 2 ml/m³ (1.7.2004). According to EU directive 67/548/EEC, Annex I (2001), acrylonitrile is classified as carcinogenic, category 2 (´substances which should be regarded as if they are carcinogenic to man´). Experience has shown that when Novodur® is processed correctly with appropriate ventilation, the levels are far below the limits mentioned above. Inhalation of the vapors of degradation products which can arise on severe overheating of the materials or during purging out should be avoided. Further information can be found in the Novodur safety data sheets.

DISCLAIMER

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