Novodur® HD M203FC

Acrylonitrile Butadiene Styrene INEOS Styrolution

Technical Data

Product Description

Novodur® HD M203FC is an injection molding grade especially suitable for medical applications providing high flowability.

FEATURES

- HD service package
- High flowability
- Sterlizable

APPLICATIONS

- · Medical appliances
- · Inhaler housings
- Insuline pens

General

General			
Material Status	Commercial: Active		
Literature ¹	 Technical Datasheet (Englished) 	lish)	
Search for UL Yellow Card	 INEOS Styrolution Novodur® 		
Availability	 Africa & Middle East Asia Pacific	EuropeLatin America	North America
Features	 Good Sterilizability 	High Flow	
Uses	Housings	 Medical/Healthcare Applications 	
Forms	Pellets		
Processing Method	 Injection Molding 		

Tensile Modulus 2400 MPa ISO 527-2 Tensile Stress (Yield, 23°C) 46.0 MPa ISO 527-2 Tensile Strain ISO 527-2 Yield, 23°C 2.6 % Break, 23°C > 15 % Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 mpact Nominal Value Unit Test Method Charpy Notched Impact Strength ISO 179/1eA -30°C -30°C 7.0 kJ/m² -23°C 23°C 110 kJ/m² -100 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² -23°C 23°C 110 kJ/m² -23°C 23°C 110 kJ/m² -23°C 30°C 7.0 kJ/m² -23°C 23°C 16 kJ/m² -23°C	Physical	Nominal Value Unit	Test Method
Molding Shrinkage 0.40 to 0.70 % ISO 294-4 Water Absorption (Saturation, 23°C) 0.95 % ISO 62 Alechanical Nominal Value Unit Test Method Tensile Modulus 2400 MPa ISO 527-2 Tensile Stress (Yield, 23°C) 46.0 MPa ISO 527-2 Tensile Strain ISO 527-2 ISO 527-2 Flexural Modulus (23°C) 2.6 % ISO 527-2 Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 Charpy Notched Impact Strength ISO 179/1eA -30°C -30°C 90 kJ/m² ISO 179/1eU -30°C 90 kJ/m² ISO 180/A 23°C 110 kJ/m² ISO 180/A -30°C 7.0 kJ/m² ISO 180/A <tr< td=""><td>Density</td><td>1.05 g/cm³</td><td>ISO 1183</td></tr<>	Density	1.05 g/cm ³	ISO 1183
Water Absorption (Saturation, 23°C)0.95 %ISO 62AechanicalNominal Value UnitTest MethodTensile Modulus2400 MPaISO 527-2Tensile Stress (Yield, 23°C)46.0 MPaISO 527-2Tensile StrainISO 527-2ISO 527-2Yield, 23°C2.6 %ISO 527-2Break, 23°C> 15 %FFlexural Modulus (23°C)2400 MPaISO 178Flexural Stress (23°C)70.0 MPaISO 178Flexural Stress (23°C)70.0 MPaISO 178MappedNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C30°C90 kJ/m²23°C10 kJ/m²ISO 180/A-30°C7.0 kJ/m²ISO 180/A-30°C7.0 kJ/m²ISO 180/A-30°C7.0 kJ/m²ISO 180/A-30°C7.0 kJ/m²ISO 180/A-30°C16 kJ/m²<	Melt Volume-Flow Rate (MVR) (220°C/10.0 kg)	31 cm ³ /10min	ISO 1133
AcchanicalNominal Value UnitTest MethodTensile Modulus2400 MPaISO 527-2Tensile Stress (Yield, 23°C)46.0 MPaISO 527-2Tensile StrainISO 527-2Yield, 23°C2.6 %Break, 23°C> 15%Flexural Modulus (23°C)2400 MPaISO 178Flexural Modulus (23°C)70.0 MPaISO 178Flexural Stress (23°C)70.0 MPaISO 178MethodNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²ISO 179/1eU-30°C90 kJ/m²ISO 179/1eU-30°C110 kJ/m²ISO 180/A-30°C7.0 kJ/m²ISO 180/A-30°C16	Molding Shrinkage	0.40 to 0.70 %	ISO 294-4
Tensile Modulus 2400 MPa ISO 527-2 Tensile Stress (Yield, 23°C) 46.0 MPa ISO 527-2 Tensile Strain ISO 527-2 Yield, 23°C 2.6 % Break, 23°C > 15 % Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Modulus (23°C) 70.0 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 mpact Nominal Value Unit Test Method Charpy Notched Impact Strength ISO 179/1eA 1SO 179/1eA -30°C 7.0 kJ/m² 23°C 1SO 179/1eU -30°C 90 kJ/m² 1SO 179/1eU 1SO 180/A -30°C 7.0 kJ/m² 1SO 180/A 1SO 180/A -30°C 7.0 kJ/m² 1SO 180/A 1SO 180/A -30°C 7.0 kJ/m² 1SO 180/A 1SO 180/A -30°C 1	Water Absorption (Saturation, 23°C)	0.95 %	ISO 62
Tensile Mittal It of all all all all all all all all all al	Mechanical	Nominal Value Unit	Test Method
Tensile Strain ISO 527-2 Yield, 23°C 2.6 % Break, 23°C > 15 % Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 mpact Nominal Value Unit Test Method Charpy Notched Impact Strength ISO 179/1eA -30°C -30°C 7.0 kJ/m² -30°C 23°C 16 kJ/m² -30°C 23°C 10 kJ/m² -4000000000000000000000000000000000000	Tensile Modulus	2400 MPa	ISO 527-2
Yield, 23°C 2.6 % Break, 23°C > 15 % Flexural Modulus (23°C) 2400 MPa ISO 178 Flexural Stress (23°C) 70.0 MPa ISO 178 mpact Nominal Value Unit Test Method Charpy Notched Impact Strength ISO 179/1eA -30°C 7.0 kJ/m² 23°C 16 kJ/m² Charpy Unnotched Impact Strength ISO 179/1eU -30°C 90 kJ/m² 23°C 110 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 110 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 16 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 110 kJ/m²	Tensile Stress (Yield, 23°C)	46.0 MPa	ISO 527-2
Break, 23°C> 15 %Flexural Modulus (23°C)2400 MPaISO 178Flexural Stress (23°C)70.0 MPaISO 178mpactNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²	Tensile Strain		ISO 527-2
Flexural Modulus (23°C)2400 MPaISO 178Flexural Stress (23°C)70.0 MPaISO 178mpactNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²ArdnessNominal Value UnitTest Method	Yield, 23°C	2.6 %	
Flexural Stress (23°C)70.0 MPaISO 178mpactNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²HardnessNominal Value UnitTest Method	Break, 23°C	> 15 %	
mpactNominal Value UnitTest MethodCharpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²HardnessNominal Value UnitTest Method	Flexural Modulus (23°C)	2400 MPa	ISO 178
Charpy Notched Impact StrengthISO 179/1eA-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²-30°C16 kJ/m²-30°C7.0 kJ/m²-30°C7.0 kJ/m²-30°C7.0 kJ/m²-30°C7.0 kJ/m²-30°C7.0 kJ/m²-30°C16 kJ/m²-30°C16 kJ/m²	Flexural Stress (23°C)	70.0 MPa	ISO 178
-30°C7.0 kJ/m²23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²HardnessNominal Value UnitTest Method	Impact	Nominal Value Unit	Test Method
23°C16 kJ/m²Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²4ardnessNominal Value UnitTest Method	Charpy Notched Impact Strength		ISO 179/1eA
Charpy Unnotched Impact StrengthISO 179/1eU-30°C90 kJ/m²23°C110 kJ/m²Notched Izod Impact StrengthISO 180/A-30°C7.0 kJ/m²23°C16 kJ/m²HardnessNominal Value UnitTest Method	-30°C	7.0 kJ/m ²	
-30°C 90 kJ/m² 23°C 110 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 16 kJ/m² Hardness Nominal Value Unit Test Method	23°C	16 kJ/m²	
23°C 110 kJ/m² Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 16 kJ/m² Hardness Nominal Value Unit Test Method	Charpy Unnotched Impact Strength		ISO 179/1eU
Notched Izod Impact Strength ISO 180/A -30°C 7.0 kJ/m² 23°C 16 kJ/m² Hardness Nominal Value Unit Test Method	-30°C	90 kJ/m ²	
-30°C 7.0 kJ/m² 23°C 16 kJ/m² Hardness Nominal Value Unit Test Method	23°C	110 kJ/m ²	
23°C 16 kJ/m² Hardness Nominal Value Unit Test Method	Notched Izod Impact Strength		ISO 180/A
Hardness Nominal Value Unit Test Method	-30°C	7.0 kJ/m ²	
	23°C	16 kJ/m²	
Ball Indentation Hardness105 MPaISO 2039-1	Hardness	Nominal Value Unit	Test Method
	Ball Indentation Hardness	105 MPa	ISO 2039-1



UL and the UL logo are trademarks of UL LLC © 2020. All Rights Reserved. UL Prospector | 800-788-4668 or 307-742-9227 | www.ulprospector.com.

The information presented here was acquired by UL from the producer of the product or material or original information provider. However, UL assumes no responsibility or liability for the accuracy of the information contained on this website and strongly encourages that upon final product or material selection information is validated with the manufacturer. This website provides links to other websites owned by third parties. The content of such third party sites is not within our control, and we cannot and will not take responsibility for the information or content.



Novodur® HD M203FC

Acrylonitrile Butadiene Styrene INEOS Styrolution

PROSPECTOR® www.ulprospector.com

Thermal	Nominal Value Unit	Test Method
Heat Deflection Temperature ³		
0.45 MPa, Annealed	98.0 °C	ISO 75-2/B
1.8 MPa, Annealed	94.0 °C	ISO 75-2/A
Vicat Softening Temperature		
	101 °C	ISO 306/B120
	99.0 °C	ISO 306/B50
	102 °C	ISO 306/A50
CLTE - Flow	9.0E-5 cm/cm/°C	ISO 11359-2
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	> 1.0E+15 ohms∙cm	IEC 60093
Electric Strength (1.50 mm)	35 kV/mm	IEC 60243-1
Relative Permittivity		IEC 60250
100 Hz	3.00	
1 MHz	2.90	
Dissipation Factor		IEC 60250
100 Hz	5.0E-3	
1 MHz	9.0E-3	
Comparative Tracking Index	600 V	IEC 60112
Flammability	Nominal Value Unit	Test Method
Flame Rating (1.5 mm)	HB	IEC 60695-11-10
Injection	Nominal Value Unit	
Drving Temperature	80 °C	

njecton	Norminal value offic	
Drying Temperature	80 °C	
Drying Time	2.0 to 4.0 hr	
Processing (Melt) Temp	230 to 260 °C	
Mold Temperature	60 to 80 °C	
Injection Velocity	14 m/min	

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² Typical properties: these are not to be construed as specifications.

³ 4h/80°C



2 of 3

UL and the UL logo are trademarks of UL LLC © 2020. All Rights Reserved. UL Prospector | 800-788-4668 or 307-742-9227 | www.ulprospector.com.

The information presented here was acquired by UL from the producer of the product or material or original information provider. However, UL assumes no responsibility or liability for the accuracy of the information contained on this website and strongly encourages that upon final product or material selection information is validated with the manufacturer. This website provides links to other websites owned by third parties. The content of such third party sites is not within our control, and we cannot and will not take responsibility for the information or content.

Novodur® HD M203FC

Acrylonitrile Butadiene Styrene INEOS Styrolution

PROSPECTOR® www.ulprospector.com

Where to Buy

Supplier

INEOS Styrolution Frankfurt, Germany Telephone: +49 69 5095501200 Web: http://www.ineos-styrolution.com

Distributor

ALBIS Plastic ALBIS Plastic is a global distribution and compounding company. Contact ALBIS Plastic for availability of individual products per country. Telephone: +49-40-78105-0

Web: http://www.albis.com/

Availability: Algeria, Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hong Kong, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, United Kingdom

Amco Polymers

Telephone: 800-262-6685 Web: http://www.amcopolymers.com/ Availability: North America

M. Holland Canada Company Telephone: 905-665-1168 Web: http://www.mholland.com/

Availability: Canada

M. Holland Company Telephone: 855-497-1403 Web: http://www.mholland.com/ Availability: Mexico, United States

PolyOne Distribution

PolyOne Distribution is a global distribution company. Contact PolyOne Distribution for availability of individual products by country. Telephone: 440-930-3004 Web: http://polyonedistribution.com/ Availability: Global

Ultrapolymers

Ultrapolymers is a Pan European distribution company. Contact Ultrapolymers for availability of individual products by country. Telephone: +32-11-57-95-57 Web: http://www.ultrapolymers.com/ Availability: Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Ireland, Italy, Macedonia, Portugal, Romania, Serbia, Slovakia, Slovenia,

Spain, Turkey, United Kingdom



3 of 3

UL and the UL logo are trademarks of UL LLC © 2020. All Rights Reserved. UL Prospector | 800-788-4668 or 307-742-9227 | www.ulprospector.com.

The information presented here was acquired by UL from the producer of the product or material or original information provider. However, UL assumes no responsibility or liability for the accuracy of the information contained on this website and strongly encourages that upon final product or material selection information is validated with the manufacturer. This website provides links to other websites owned by third parties. The content of such third party sites is not within our control, and we cannot and will not take responsibility for the information or content.