

## FACT SHEET

### INEOS STYROLUTION'S NOVODUR<sup>®</sup> HD M203FC G3 IN HEALTHCARE

Novodur<sup>®</sup> HD M203FC G3 has been specifically developed for the healthcare industry. It is the first glass fiber filled ABS polymer grade which is certified against the relevant parts of the biocompatibility standard ISO 10993. The grade delivers a significantly increased stiffness combined with a high melt flowability making it the material of choice for demanding applications like medical spikes, surgical applications and other applications requiring structural stability.

The regulatory compliancy reduces the risk for device manufacturers to pass the demanding and time consuming regulatory approvals in the healthcare industry. Novodur HD M203FC G3 is offered with INEOS Styrolution's "Full Service HD package" which includes the regulatory documents noted above along with an up to 36 months notification of change (NOC) with a signed long-term supply contract.

In addition to its regulatory compliance for selected applications, the product's characteristics such as good stiffness, surface quality and processability mean that it can even be used to produce complex geometrics of the final molded article. Due to its unique properties and regulatory compliance, Novodur HD M203FC G3 has the potential to become a global standard material for healthcare applications.

The development of this glass fiber filled Novodur HD grade was performed in close cooperation with Fleima Plastic (Masterflex Group) – a leading manufacturer of spikes and caps made of ABS. Fleima launched their first regulatory compliant application in parallel to INEOS Styrolution's product launch – indicating fast regulatory approval cycles.

It has always been INEOS Styrolution's ambition to provide device manufacturers with material they can have confidence in. Therefore, testing raw materials against common biocompatibility standards (i.e. ISO 10993 and USP class VI) elevates INEOS Styrolution above industry requirement. Medical device manufacturers can significantly reduce the risk of failure when introducing new applications in the medical market since their key raw materials are already compliant. Working with a pre-certified raw material would certainly lead to a reduction in time and cost for the application provider – as shown in this example with Fleima.

## Fleima spike:



## Novodur M203FC G3 technical data:

Property, Test Condition	Standard	Unit	Values
<b>Rheological Properties</b>			
Melt Volume Rate 220 °C/10 kg	ISO 1133	cm <sup>3</sup> /10 min	18
<b>Mechanical Properties</b>			
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m <sup>2</sup>	6
Izod Unnotched Impact Strength	ISO 180	kJ/m <sup>2</sup>	18
Charpy Notched Impact Strength, 23° C	ISO 179	kJ/m <sup>2</sup>	5
Charpy Unnotched, 23 °C	ISO 179	kJ/m <sup>2</sup>	20
Tensile Stress at Yield, 23 °C	ISO 527	MPa	70
Tensile Strain at Yield, 23 °C	ISO 527	%	1.7
Tensile Modulus	ISO 527	MPa	5600
Flexural Strength, 23 °C	ISO 178	MPa	100
Flexural Modulus, 23 °C	ISO 178	MPa	5100
Hardness, Ball Indentation	ISO 2039-1	MPa	145
<b>Thermal Properties</b>			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	105
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	104
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	107
Vicat Softening Temperature, VST/B/120	ISO 306	°C	106
<b>Other Properties</b>			
Density	ISO 1183	kg/m <sup>3</sup>	1190
<b>Processing</b>			
Linear Mold Shrinkage	ISO 294-4	%	0.2 - 0.4
Melt Temperature Range	ISO 294	°C	230 - 260
Mold Temperature Range	ISO 294	°C	60 - 80
Injection Velocity	ISO 294	mm/s	240
Drying Temperature		°C	80
Drying Time		h	2 - 4



## CONTACT

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