

DuPont™ DELRIN® FG500MXD BLA090

New food contact compliant and detectable grade for contamination control

General Information:

DuPont™ Delrin® FG500MXD BLA090 is a unique medium viscosity Acetal Homopolymer grade Metal and X-Ray Detectable for more safety in the food processing industry. It combines the design freedom and light weight of thermoplastics with the safety and durability of metals.

Benefits: peace of mind

- Use one material for both detection methods: the new Delrin® grade is detectable with both methods
- Easy implementation of HACCP (Hazard analysis and critical control points) principle with metal or X-Ray detection systems
- Reduces the risk of complaints through particle contamination
- Supports consumer and Brand equity protection, helping to deliver preferred supplier status
- Ergonomics improvements: lighter items and quieter due to lower noise emissions compared to metal equivalents
- Improved durability and chemical resistance to cleaning agents
- Bisphenol A and phthalate free.

“See the invisible...”



Compliance with regulations

New food contact compliant detectable grades offer compliance with regulations including: FDA, European Regulation (EU) N° 10/2011 as amended (Food Contact for Plastics) and European Regulation (EU) N° 2023/ 2006 (GMP); Information on specific restriction will be supplied upon request in specific statement.

Potential savings

- Cost of maintenance savings based on cost effective moulded parts due to improved design and functional integration
- Reduced energy consumption due to lighter components with equivalent performance
- Longer replacement intervals thanks to excellent fatigue and wear/friction properties.

Properties Overview:

DuPont Delrin® FG500MXD BL090 provides the mechanical properties needed for end use in conveyor chains

Properties	Unit	Test method	Delrin® FG511DP NC010	Delrin® FG500MXD BLA090
Melt mass-flow rate (190°C, 2.16kg)	g/10min	ISO 1133	14	14
Density	g/cm ³	ISO 1183	1.42	1.61
Mold shrinkage (parallel / normal)	%	ISO 294-4	1.9 / 1.8	1.8 / 1.6
Notched Charpy at 23°C	kJ/m ²	ISO 179/1eA	7	4
Notched Charpy at -30°C	kJ/m ²	ISO 179/1eA	6	3.5
Tensile modulus	MPa	ISO 527-1/-2	3400	3600
Tensile strength at yield	MPa	ISO 527-1/-2	73	64
Yield strain	%	ISO 527-1/-2	12	11

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DuPont™ Delrin® FG500MXD set new standards in X-Ray and Metal detectability for thermoplastic engineering resins by combining both detection methods in one resin

In collaboration with Mettler Toledo, the detection limits of these materials have been determined in a variety of food types and packages. Depending on the food type, packaging and test conditions, particles as small as 1.2 mm³ are detected.

Detection limits for metal detection*

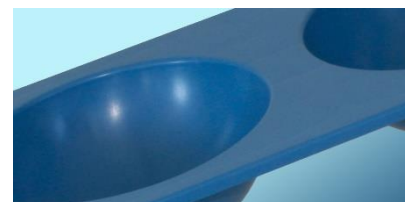
Food Sample	Aperture Size (mm ²)	Stainless Steel 304 sphere Ø	Iron sphere Ø	Delrin® FG511DP NC010	Delrin® FG500MXD BLA090
51 g chocolate bar	150 x 300	2.0 mm	1.5 mm	Not Detected	2.4 mm

* Detection limits depend on test conditions; 100% Probability of detection based on 10 cubic samples with SAFELINE Metal Detector R-PRO ADVANTAGE (line speed : 20m/min)

Detection limits for X-Ray detection**

Food Sample	Sample Size (mm ³)	Stainless Steel Sphere Ø	Mineral Glass Sphere Ø	Delrin® FG500MXD BLA090
Chocolate bar with nuts in metallic film	220x100x15	0.6 mm	2.0 mm	1.2 mm
Cereal bars 5 pk metallic film in box	140x210x26	0.8 mm	2.5 mm	1.8 mm
Cereal with apple and cinnamon 500g	245x180x50	0.8 mm	2.5 mm	2.2 mm (2.0 mm)
Ready meal in foil hexagon 220g	Ø 140x40	0.8 mm	2.5 mm	2.2 mm (2.0 mm)
Rice 1kg in plastic film	200x110x70	1.0 mm	3.0 mm	2.6 mm
Soft drinks stand up pouch 10pk x 200ml in box	290x150x85	1.2 mm	4.0 mm	2.8 mm

** Detection limits depend on test conditions: 100% Probability (>80% probability) of detection based on 10 cubic samples with SAFELINE X-ray detector X36-600 with 0.4mm detector (HiQ) with 420W (line speed : 30m/min)



First applications for the new X-ray and metal detectable Delrin® FG500MXD include food production and portioning trays

DuPont™ Delrin® design, technical, and processing support to ensure production of a high quality part that delivers on its promise.

Potential applications

- Material handling equipment such as conveyors and hoppers
- Food manipulation items such as cutters, shovels, scrapers
- Forms and moulds for chocolate or other food.