

INOFロン® GN7003

TECHNICAL DATA SHEET

TECHNICAL INFORMATION

INOFロン® GN7003 is polymerized in an aqueous dispersion medium to produce agglomerated fine powder dispersion resin. It is designed for low reduction ratio applications. INOFロン® GN7003 grade is suitable for electrical tapes, big diameter liners, yarns, dental floss, membranes, and fibers, expanded PTFE, etc.

PRODUCT FEATURES

- High chemical resistance
- High green strength
- Processable by standard paste extrusion process
- High molecular weight
- High stretch ratio
- PFOA Free

TYPICAL PROPERTIES

Properties	Test Method	Unit	Nominal Value
Powder Properties			
Bulk density	ASTM D 4895	g/l	500
Average particle size (d ₅₀)	ASTM D 4895	μm	525
Processing			
Extrusion pressure (Reduction ratio 400:1)	ASTM D 4895	MPa (psi)	42 (6092)
Mechanical properties			
Std. specific gravity (SSG)	ASTM D 4895	-	2.155
Tensile strength	ASTM D 4895	MPa (psi)	33 (4786)
Elongation at break	ASTM D 4895	%	330

Note: These are typical properties and not to be used for specification purposes.

FDA COMPLIANCE

When products made from INOFロン® GN7003 are correctly processed, that is sintered at high temperature practiced by industries, they may comply with FDA Regulation 21 CFR 177.1550 for use in contact with food.

PACKAGING

INOFロン® GN7003 is packed in 25 kg plastic drums.

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HANDLING AND STORAGE

INOFロン® GN7003 is susceptible to shear damage, particularly above its transition point 19°C (66.2°F). Handling and transportation of the containers could easily subject the powder to sufficient shear to spoil it if the resin temperature is above the transition point. To ensure that the resin does not fibrillate, it should be cooled below its transition temperature prior to handling and transportation. A typical commercial container (20–30 kg) should be cooled 24–48 hours to <15°C (59°F) to assure temperature uniformity throughout the container. Specially designed shallow cylindrical drums are used to minimize lump formation, compaction, and shearing of the resin. To prevent moisture contamination, the drum must not be opened where the ambient dew point is above the temperature of resin to avoid immediate condensation on the resin. Storage and handling facilities should be clean so as to avoid any external contaminant. Keep resin drum closed and clean. Good housekeeping and careful handling are essential.

PROCESSING

INOFロン® GN7003 is fabricated by paste extrusion, where PTFE powder is first blended at temperatures below 19°C (66.2°F) with a hydrocarbon lubricant which acts as an extrusion aid. After aging at about 30°C (86°F) it is then formed into a cylindrical preform at fairly low pressure and placed inside the barrel of a paste extruder where it is forced through a die with a constant extrusion rate at 30–50°C (86–122°F). The extrudate is passed through multiple ovens and a cooling device where it is first dried, then sintered and finally cooled. Drying and sintering can be performed continuously “in line” with the extrusion or in separate drying and sintering ovens.

SAFETY PRECAUTIONS

Handling and processing of PTFE must be done in a ventilated area to prevent personnel exposure to the fumes liberated during sintering and heating of the resin. Fumes must not be inhaled and eye and skin contact should be avoided. In case of eye contact flush with water immediately and seek medical help. Smoking tobacco or cigarettes contaminated with PTFE may result in a flu-like condition including chills, fever and sore throat that may not start until a few hours after exposure has taken place. These symptoms usually pass within about 24 hours. Vapors and gases generated by PTFE during sintering must be completely removed from the factory areas.

Mixtures of some metal powders such as magnesium or aluminum are flammable and explosive under some conditions. Please read the Material Safety Data Sheet and the detailed information in the “Guide for the Safe Handling of Fluoropolymer Resins” published by the Fluoropolymer Division of the Society of the Plastics Industry available at www.plasticseurope.org.

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WARNING: Do not use any of INOFロン® PTFE resins in medical devices that are designed for permanent implantation in the human body. For other medical uses, prior permission of GFL may be sought.

SALES AND TECHNICAL SUPPORT

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