INOFLON®

Fine Powder PTFE Resins

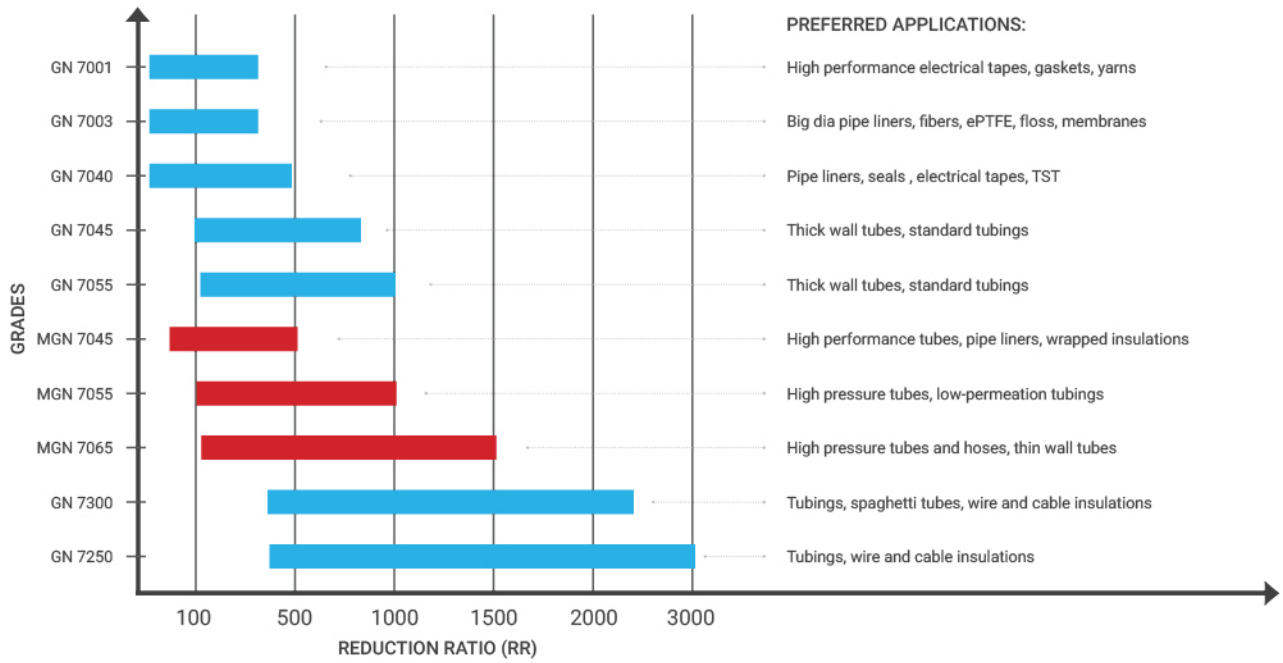
GUJARAT
FLUOROCHEMICALS
LIMITED

Introduction

INOFLON® Fine Powder PTFE Resins are polymerized in an aqueous dispersion medium made from environmental friendly emulsifier. INOFLON® Fine Powder PTFE Resins are milky white polymers obtained from coagulating dispersions. Hydrocarbon oils are used for processing Fine Powder PTFE Resins. INOFLON® Fine Powders offer an impressive array of properties that make them the material of choice for various demanding applications.

INOFLON® Fine Powder PTFE Resins are PFOA / PFOS free

INOFLON® Fine Powder Product Portfolio



Important Properties (GN/MGN Grades)

- High dielectric strength
- Good dimensional stability
- Good fibrillation
- Good mechanical properties and ease of processability
- Chemically inert to most industrial chemicals and solvents
- Low friction and non stick surface
- High stress cracking resistance
- Good transparency
- High burst strength
- Good surface finish
- Good weldability
- Low gas permeability
- High flex life

Typical Properties - GN Grades

Properties	Test Method	Unit	Nominal Value						
			GN7001	GN7003	GN7040	GN7045	GN7055	GN7250	GN7300
Bulk density	ASTM D 4895	g/L	475	500	500	475	475	450	450
Avg. particle size (d_{50})	ASTM D 4895	µm	500	525	525	475	475	475	450
Extrusion pressure [Reduction Ratio]	ASTM D 4895	MPa (psi)	42 (6092) [RR 400:1]	42 (6092) [RR 400:1]	35 (5076) [RR 400:1]	22 (3191) [RR 400:1]	20 (2901) [RR 400:1]	35 (5076) [RR 1600:1]	42 (6092) [RR1600:1]
Std. Specific Gravity (SSG)	ASTM D 4895	-	2.150	2.155	2.175	2.18	2.175	2.18	2.175
Tensile strength	ASTM D 4895	MPa (psi)	32 (4641)	33 (4786)	33 (4786)	33 (4786)	33 (4786)	33 (4786)	33 (4786)
Elongation	ASTM D 4895	%	330	330	330	330	330	330	350

Note - These are typical properties and not to be used for specification purpose

Typical Properties - MGN Grades

Properties	Test Method	Unit	Nominal Value		
			MGN7045	MGN7055	MGN7065
Bulk density	ASTM D 4895	g/L	500	500	500
Avg. particle size (d_{50})	ASTM D 4895	µm	500	475	475
Extrusion pressure [Reduction Ratio]	ASTM D 4895	MPa (psi)	29 (4206) [RR 400:1]	22 (3191) [RR 400:1]	48 (6962) [RR 1600:1]
Std. Specific Gravity (SSG)	ASTM D 4895	-	2.149	2.151	2.154
Tensile Strength	ASTM D 4895	MPa (psi)	33 (4786)	33 (4786)	33 (4786)
Elongation	ASTM D 4895	%	330	330	330

Note - These are typical properties and not to be used for specification purpose

Applications

INOFLON® Fine Powder PTFE is processed using paste extrusion technique by mixing resin with suitable extrusion aid (lubricant). Parts made from 'GN' grades include liners, thread seal tapes, electrical tapes, joint sealants, pressure hoses, wires & cables, small diameter thin wall tubings, filter membranes, yarns, fibers, dental floss, etc. Parts made from 'MGN' grades include high performance hoses, wires & cables, small diameter thin wall tubings, flat gaskets, etc.

Regulatory Compliances

- REACH–Substances of Very High Concern (EC) No. 1907/2006
- Food & Drugs Administration (FDA) directive 21 CFR 177.1550
- RoHS Directive 2011/65/EU
- United States Pharmacopoeia (USP) Class VI

Handling and storage of material

PTFE Fine Powder Resins are 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 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 packing unit of 25 kg should be cooled for 24–48 hours at less than 15°C (59°F) to assure temperature uniformity throughout the drum. Specially designed shallow cylindrical drums are used to minimize lump formation, compaction, and shearing of the resin. To prevent moisture and 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. Very small foreign particle are highly visible in the white resin, keep resin drum closed and clean. Good housekeeping and careful handling are essential.

Safety precautions

Handling and processing of PTFE must be done in ventilated areas to prevent personnel exposure to the fumes liberated during sintering and heating of the resin. Fumes should not be inhaled and eye and skin contact must be avoided. In case of skin contact wash with soap and water immediately. 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 occur until a few hours after exposure has taken place. 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 to 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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