PTFE
FLUOROPLAST-4
grade DM

HaloPolymer
www.halopolymer.com

Manufacturer:
“HaloPolymer Kirovo-Chepetsk”, LLC

QMS for production is certified:
ISO 9001:2015, EN 9100:2016, IATF 16949:2016

Chemical name: Poly(tetrafluoroethylene) (IUPAC)
Structural formula: $(C_2F_4)_n$
CAS No. 9002-84-0
HS code 39 0461 0000

Fluoroplast-4 grade DM is a chemically modified polytetrafluoroethylene (PTFE) fine powder resin. It is polymerized in an aqueous dispersion medium to produce agglomerated fine dispersion resin.

PROPERTIES	UNITS	TYPICAL VALUE	TEST METHOD
Appearance	White, easily lumping powder, without visible inclusions		Visual (internal method[1])
Particle size, average diameter (d50)	µm	350-650	Laser-diffraction analyses (internal method[1])
Water content, max	% wt	0,02	internal method[1]
Bulk density	g/l	450-550	internal method[1]
Density (SSG)	g/sm³	2,21	internal method[1]
Tensile strength at break, min	MPa	21	internal method[1]
Elongation at break, min	%	330	internal method[1]
Extrusion pressure at RR 400 : 1	MPa	10-45	internal method[1]
Melting point	˚C	327±5	ASTM D4894

Note:
1) The parameters are indicated according to the Technical Specifications (TU), because the manufactured products are analyzed in accordance with the TU (internal company standard). The procedure of sample preparation differs from that in ASTM, ISO, DIN.

Main application:
For fabrication of tubings, pressure hoses, flexible tubings, reinforced hoses, etc;

Package:
9 kg (net) card boxes on wooden pallet boards. 70 boxes on one pallet. Gross weight per pallet is 720 kg. Plastics drums with 1×25 kg polyethylene inserts on wooden pallet boards

Guarantee storage life:

24 months from the date of manufacture.

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Processing:

Fluoroplast-4 grade DM is fabricated by paste extrusion, where PTFE powder is first blended at temperatures below 19°C with a hydrocarbon lubricant which acts as an extrusion aid. After ageing at about 30°C it is then formed into a cylindrical preform at a 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.

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.

Storage and handling:

Storage and handling preforming is the easiest when the resin is uniformly between 21–27°C (70–80°F). As the temperature declines below this range, the resin will be increasingly difficult to mold without cracks and problems with condensed moisture. Higher temperatures inhibit flow and promote lumping. Storage conditions should be set accordingly.

Cleanliness is a critical requirement for successful use of PTFE. The white resin and high sintering temperatures cause even very small foreign particles to become visible in finished moldings. Keep resin boxes closed and clean. Good housekeeping and careful handling are essential.

Quality data:

HaloPolymer does not use PFOA/APFO or its salts/LCPFAC in the process of polymerization of TFE.

HaloPolymer PTFE is compliant with RoHS Directive 2011/65/EU
FDA 21 CFR 177.1380 & FDA 21 CFR 177.1550
Class VI acc. USP 35 ‹88›
3-A Sanitary Standard for Multiple-Use Plastic Materials 20-27

Safety Precautions:

WARNING! VAPORS CAN BE LIBERATED THAT MAYBE HAZARDOUS IF INHALED.
Before using Halopolymer Fluoroplast-4 (PTFE) read the Material Safety Data Sheet.
Open and use containers only in well-ventilated areas using local exhaust ventilation. Vapors and fumes liberated during hot processing or from smoking tobacco or cigarettes contaminated with Halopolymer Fluoroplast may cause flu-like symptoms (chills, fever, sore throat) that may not occur until several hours after exposure and that typically pass within 24 hours. Vapors and fumes liberated during hot processing should be exhausted completely from the work area; contamination of tobacco with polymers should be avoided. Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

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