



# LINEPLUS PF 3004-H

P.T.F.E. FLUORO ADDITIVE  
NON CONTENENTE PFOA



## DESCRIPTION

**Lineplus PF 3004-H** is a micronized PTFE additive, which is PFOA free, designed to enhance the wear resistance and lubricity of a variety of materials.

**Lineplus PF 3004-H** can be used over a wide temperature range from  $-260^{\circ}\text{C}$  to  $+260^{\circ}\text{C}$ .

## TYPICAL PROPERTIES

PROPERTIES	UNIT	TEST METHOD	VALUE
APPEARANCE	-	VISUAL	White powder
(1) BULK DENSITY	g/L	ASTM D4895	510
(1) MOISTURE CONTENT	% b.w.	ASTM D4895	< 0,04
(2) AVERAGE PARTICLE SIZE	$\mu\text{m}$	ISO 13320	25,0
SPECIFIC SURFACE AREA	$\text{m}^2/\text{g}$	ASTM D4567	2,5
(1) MELTING POINT	$^{\circ}\text{C}$	ASTM D4591	-
MELT FLOW INDEX (372 $^{\circ}\text{C}$ / 21,6 Kg)	g/10'	ASTM D1238	< 0,1
HF CONTENT	ppm	INTERNAL	< 0,05
(3) PFOA CONTENT	ppb	INTERNAL*	< 25,0

\* Based on ISO 25101:2009 and IEC 62321-2:2013

(1) Part of certificate of analysis

(2) Part of certificate of analysis with D10, D50 and D90 values

(3) Certified report available under request and after commercial agreement

## OVERALL BENEFITS

- Improve wear characteristics
- Improve non-stick and antifriction properties
- Reduce friction coefficient
- Increase scratch resistance
- Improve corrosion resistance
- Improve thermal stability
- Improve UV resistance
- Inert to practically all chemicals and solvents
- Do not absorb moisture

## APPROVALS

The product is approved in the production of articles intended to come in contact with foodstuffs, according to the following normative requirements:

- **EU Regulation 10/2011/EC**, "Plastic materials and articles intended to come into contact with food" and following amendments;
- **FDA 21 CFR 175.300**, "Resinous and polymeric coatings"  
(Manufacturer or seller must verify the final application approvals with regard to limitations and migration values)

## FEATURES

PTFE polymer has a wide working temperature range, it is inert to almost all chemicals and solvents, it is hydrophobic, it is a good electrical insulator and it has excellent weathering and ageing characteristics. PTFE lubricant powders are ideal as additives because they can influence the behavior of many hosting materials without reacting with them, but with the benefit to reduce the coefficient of friction, increase wear resistance, improve non-stick properties and enhance anti-dripping properties.

### ■ Thermoplastics, thermosetting resins and elastomers

Maflon PTFE lubricant powders can be incorporated into a wide variety of hosting materials like thermoplastics / thermosettings (e.g. polyacetals, polyamides, polycarbonates, polyesters, polyimides, polysulfides, polysulfones / epoxy, phenol-formaldehyde, melamine resin) at concentrations typically from 5-20 % b.w. to enhance the tribological properties. While in case of elastomers (e.g. fluoroelastomers, neoprenes, nitriles and silicones) are added at level of 10-25% b.w. to improve tear strength and abrasion resistance.

### ■ Printing inks

Maflon PTFE lubricant powders are suggested in printing inks formulations (e.g. lithographic, flexographic, gravure) as additives, in reason of 1-5% b.w. for scuff-resistant, for better image protection and for higher productivity or in combination with polyethylene waxes to reach the required level of characteristics (5-15% b.w.).

### ■ Paints and coatings

Maflon PTFE lubricant powders are developed for a large range of industrial coating formulations (Powder coating, can and coil coating, wood coating) to enhance surface properties (e.g. scratch resistance, matting effects, slipping) when added in reason of 5-15% b.w.

### ■ Oil and greases

Maflon PTFE lubricant powders are designed for dispersing in oils and greases formulation to adjust the viscosity (up to 15% b.w.) in the applications that require both high and low temperature lubricity.

## STORAGE

**Lineplus PF 3004-H** if properly hold in the sealed original package in a clean and dry place at temperature below 30°C they can be stored for a relatively long period of time (up to 24 months).

The mechanical stresses (vibrations) due to the transport, above all if combined with too high temperatures or long storage periods at high temperatures, can lead the Lineplus micro-powder grades (dispersion grades are the most sensitive) to agglomerate inside the packages with a subsequent increase of the bulk density.

Therefore, in such cases, it is good practice, and we highly recommend it, to store the packages below 17°C and at least for 48 hours before processing, to recover the original fluffiness of the powder.

## SAFETY & HANDLING

**Lineplus PF 3004-H** is a PTFE resin, which require well-ventilated areas when the containers are opened to process the powder. While in case PTFE resin is heated to temperatures above 400°C there are potential hazards, including the evolution of toxic vapors and fumes.

Before processing this product and for further information refer to the Lineplus PTFE material safety data sheet.

## SUPPLY FORM

**Lineplus PF 3004-H** is packaged in moisture and dust proof double PE liners inside a 25 Kg cardboard box.

The data provided in this data sheet are typical values obtained under standard test conditions and should not be regarded as binding product specifications. We recommend that you contact the technical or sales department for official product specifications. Maflon S.p.A. is not responsible for the misuse of the data presented in this data sheet as official specifications and accepts no liability.

### MAFLON S.p.A.

*(Società Socio Unico soggetta all'attività di direzione e coordinamento ex art. 2497 bis C.C. da parte di Mazza Holding srl)*

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