

# LINEPLUS PF 631-F

## P.T.F.E. FLUORO ADDITIVE

Lineplus PF 631-F is a micronized PTFE additive designed to enhance the wear resistance and lubricity of a variety of materials. Lineplus PF 631-F can be used over a wide temperature range from  $-260^{\circ}\text{C}$  to  $+260^{\circ}\text{C}$ .

### 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.

### TYPICAL PROPERTIES

PROPERTIES	Unit	TEST METHOD	VALUE
APPEARANCE	-	VISUAL	White powder
BULK DENSITY	g/l	ASTM D4894	720
MOISTURE CONTENT	% b.w.	INTERNAL	< 0,04
AVERAGE PARTICLE SIZE	$\mu\text{m}$	INTERNAL	670,0
SPECIFIC SURFACE AREA	$\text{m}^2/\text{g}$	ASTM D 4567	3,0
MELTING POINT	$^{\circ}\text{C}$	ASTM D4591	345,0
MELT FLOW INDEX (372 $^{\circ}\text{C}$ / 2,16 Kg)	g/10'	ASTM D 1238	-
HF CONTENT	ppm	INTERNAL	-

The product meets the requirements of FDA CFR 177.1550 and European Directive 2011/10/EC.

### SAFETY & HALDLING

Lineplus PF 631-F 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  $400^{\circ}\text{C}$  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 631-F is packaged in moisture and dust proof double PE liners inside a 25 Kg plastic drum ( 500 Kg) or 25 kg cardboard box (450 kg) for easy shipping, handling and storage.

### STORAGE

Lineplus PF 631-F if properly hold in the sealed original package in a clean and dry place at temperature below  $30^{\circ}\text{C}$  they can be stored for a relatively long period of time (Generally 12-24 months).



**MAFLON SPA**  
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## FEATURES

Maflon PTFE (polytetrafluoroethylene) lubricant range of products are finely divided powders with different low molecular weight, particle size distribution, shapes and morphology. PTFE lubricant powders are designed to be mixed with other solid or liquid material to achieve some of the unique properties of PTFE polymer.

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.

When PTFE lubricant powders are used alone as powder or in paste can be regarded as solid lubricants for high performance sealants and for wear surfaces in hostile environment, while added in spray formulation they act as mold release agent. Further they can be dispersed in water or in organic solvent for direct usage or as an intermediate additive for later formulation .

## 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 which require both high and low temperature lubricity.

## RECOMMENDE PROCESSING CONDITIONS

The homogeneous incorporation of PTFE lubricant powders is the main and more important factor to impart at the hosting material the enhancements due to the PTFE polymer properties.

For thermoplastics blends, PTFE lubricant powders can be directly introduced into the melt. In case of others materials and depending on the application a variety of mixing equipment can be used, like high speed mixers and tumble mixers for dry blends, while propeller mixers are preferred for wet formulations. In presence of relatively high viscosity formulations it is recommended to use glass bead mill while for very high viscosities substances like oils and greases it is suggested the roll mill (triple roll mill).

Specifically for elastomer the PTFE lubricant powders are mixed by banbury or a two-rolls mixer.

For additional information or other specific request please contact our customer service office at:

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