

HAIFLON® PTFE Micropowder HF-203 — Lubricant & Grease Grade

CAS No.: 9002-84-0

Haiflon® PTFE micropowder HF-203 is a dispersion-based, low-molecular-weight PTFE powder (D50 1.5 – 5.0 μm , specific surface area 7 – 12 m^2/g) consisting of agglomerates of fine primary particles that deagglomerate easily on incorporation. Its high specific surface area gives efficient thickening and gel-formation in oils, and it is designed for lubricants, waxes, oils and greases as an anti-wear, friction-reducing and thickening additive.

Product Features

- ✧ Dispersion-based agglomerates with high specific surface area (7 – 12 m^2/g)
- ✧ Easily deagglomerated on incorporation into oils, waxes and greases
- ✧ Efficient thickening and anti-wear performance in lubricant systems
- ✧ Acts as a dry lubricant even after loss of base oil
- ✧ Excellent chemical resistance and wide operating temperature range

Typical Physical Properties

Item	Specification — HF-203
Appearance	White micropowder (agglomerates, easily deagglomerated)
Average particle size D50, μm	1.5 – 5.0
Max. particle size D99, μm	15.0
Bulk (apparent) density, g/L	200 – 350
Melting point, $^{\circ}\text{C}$	320 – 330
Specific surface area (BET), m^2/g	7 – 12

Applications

- ✧ Thickening and anti-wear additive for lubricating greases
- ✧ Additives for lubricating oils and waxes
- ✧ High-performance PFPE and silicone greases
- ✧ Dry-film lubricants and release agents

Suggested Dosage & Processing Recommendations

- ✧ Typical addition levels: 0.5 – 1 % in coatings, 8 – 15 % in engineering plastics, 8 – 10 % in greases and lubricants (from below 1 % up to 20 % depending on system and required effect).
- ✧ Deagglomerate for proper distribution; dry-blend with the base resin, add directly into polymer melts, or disperse in liquid systems (surfactants or viscosity adjustment may be required).
- ✧ Conventional mixers are generally sufficient; for hard-to-disperse systems use high-shear equipment (three-roll mills, high-speed dispersers or sand mills); evaluate in the laboratory before commercial use.

Comparable Grades

Solvay Algoflon L 101-1 ($\approx 3.5 \mu\text{m}$)

Safety Precautions for Using PTFE Micropowder

- ✧ PTFE micropowder is not classified as a dangerous good for transport. Please refer to the Safety Data Sheet (SDS) before use.
- ✧ When heated above 300 $^{\circ}\text{C}$, PTFE begins to decompose and may release hydrogen fluoride and other harmful fluorinated vapours. Do not exceed the recommended processing temperature of the host system.
- ✧ Avoid breathing dust; use local exhaust ventilation and wear a dust mask, gloves and goggles during handling.
- ✧ Mixtures with finely divided metals (e.g. magnesium, aluminium) may be flammable or explosive — avoid such combinations.
- ✧ Never burn off residues with an open flame or in furnaces; dispose of processing waste through specialized personnel according to local regulations.

Storage & Handling

- ✧ Store in a clean, cool, shady and dry warehouse, away from heat sources and direct sunlight, and avoid mixing with dust and moisture.
- ✧ Keep the package sealed to prevent moisture uptake, contamination and agglomeration.
- ✧ Shelf life: long-term stability if stored below 30 $^{\circ}\text{C}$ in clean and dry conditions.
- ✧ Avoid severe vibration, shock and heating during transportation and storage — micropowders tend to agglomerate.

Packing

- ✧ Inner package: sealed polyethylene (PE) bag; outer package: moisture-proof paper drum.
- ✧ Net weight 25 $\pm$ 0.1 kg per drum.
- ✧ Other packings are available on request.