

SHAMROCK

EU Regulatory Compliant (RC) PTFE for Thermoplastics, Elastomers, and Thermosets

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Shamrock offers a range of EU Regulatory Compliant (RC) PTFE micropowders made from Natural prime and Recycled raw materials.

Our RC PTFE products are produced to be in compliance with Commission Delegated Regulation (EU) 2020/784 amending Annex I to POPs Regulation (EU) 2019/1021 (per Shamrock QSOP-202E).

Shamrock RC PTFE products are used to reduce friction and wear between contacting surfaces and are available in a range of particle sizes, molecular weights, and thermal stability which can be used in engineering plastics, elastomers, and thermosets.



PTFE

Irradiation

Milling

QC

Product

Benefits of PTFE Additives in Engineering Plastics

- Elimination of the need for external lubrication
- Lower and more consistent frictional responses
- Reduced wear rates & Increases product lifespan
- Elimination of 'stick-slip' across a large temperature range
- Elimination of chatter and other motion-induced noise
- Enables light-weighting

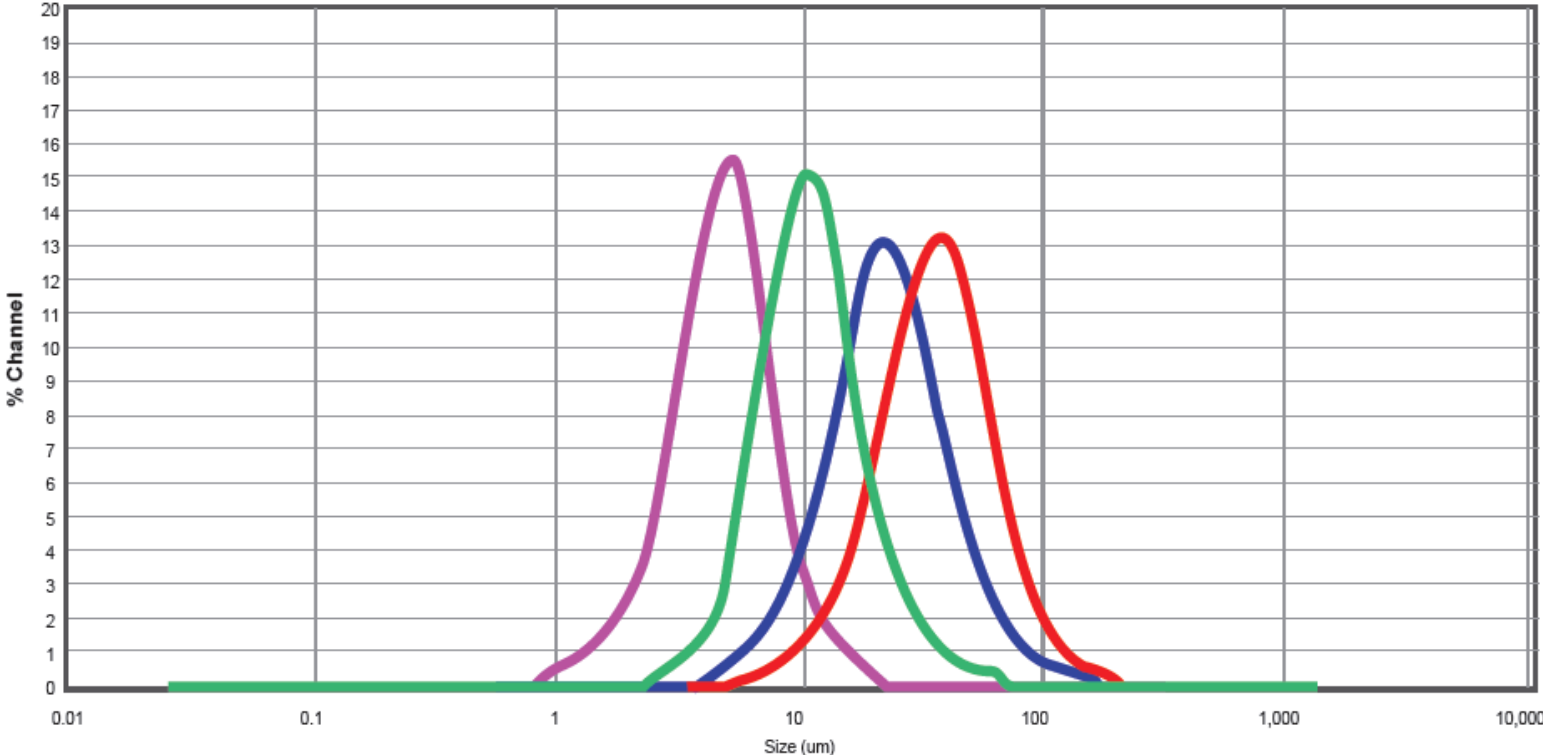
Typical Properties of Shamrock RC PTFE Micropowders

Specific Gravity	2.20-2.30
Surface Energy (dyne/cm)	19-20
Coefficient of Friction	0.05-0.10
Concentration of PFOA	< 25 ppb

Particle size distribution

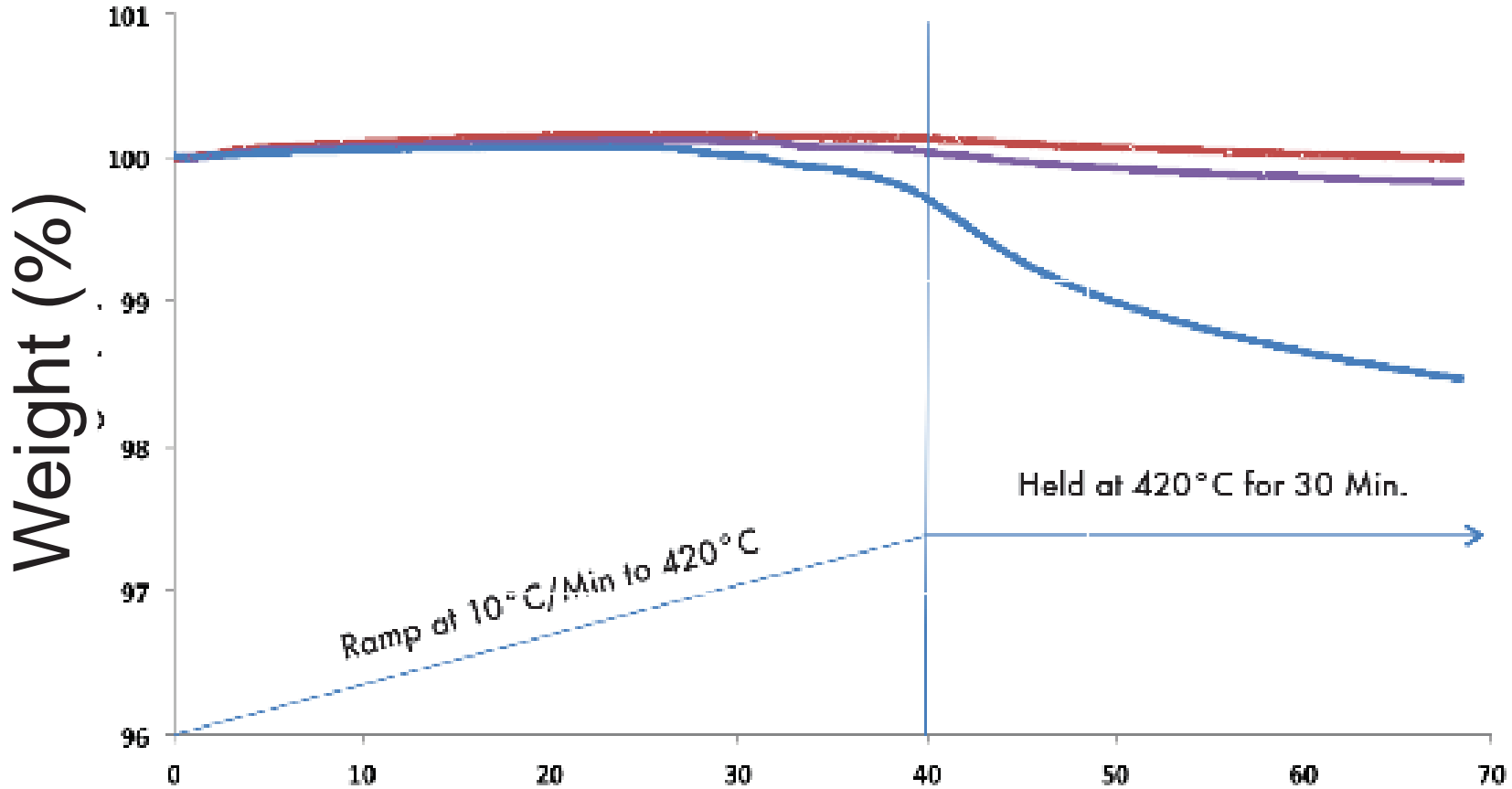
Particle Size Distribution

- Comparison Plot -



MicroFLON® S-205-RC MicroFLON® S-211-RC MicroFLON® T-801-RC MicroFLON® T-803HT-RC

Thermal Stability of MicroFLON® PTFE (TGA)



- MicroFLON® S-203-RC
- MicroFLON® T-801-RC/T-803HT-RC
- MicroFLON® T-803-RC

Tribology - Block on Ring test

- Testing parameters

- Normal load: 30N
- Velocity: 1.0 m/s & 0.2 m/s
- Testing time: 20 hours
- Ring: CS Ra = 13 μ surface roughness

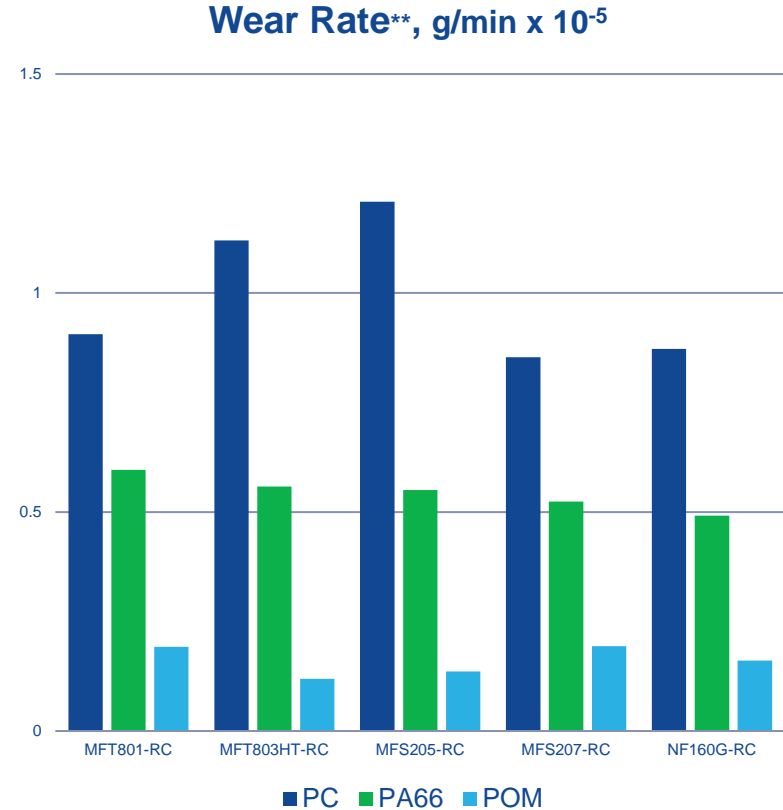
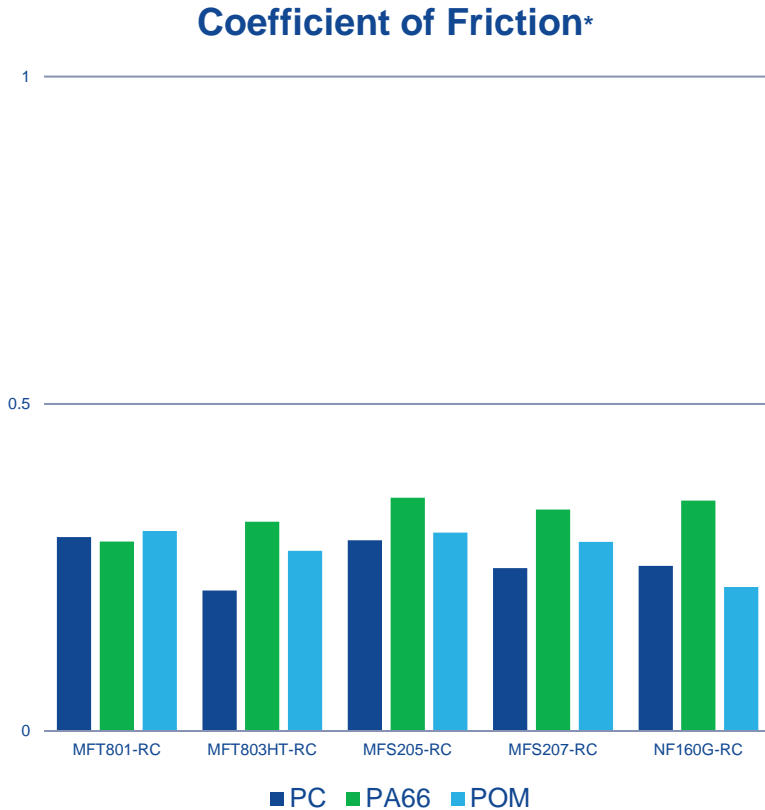
- Measurement results

- Wear rate: g/min
- Coefficient of Friction



Block on Ring Tribology Test

COF & Wear rate results



*10% PTFE Loading, Normal load = 30 N, Speed = 0.2 m/s, CS Ring Ra~13 μ m

**10% PTFE Loading, Normal load = 30 N, Speed = 1 m/s, CS Ring Ra~13 μ m



Our Products



MicroFLON® T

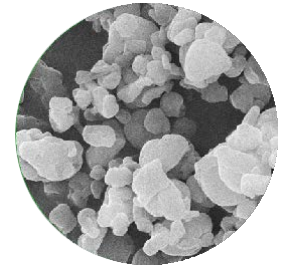
Sintered Recycled Powder

These powders are designed to be used in thermoplastic compounds of PA, POM, PC, PP, ABS, blends, as well as a variety of elastomers and thermosets.

Product	Mean Value (µm)	< 90% (µm)	Melting Point (°C)
MicroFLON® T-801-RC	35-55	70	> 327
MicroFLON® T-803HT-RC	20-25	50	> 327
MicroFLON® T-807-RC	10-14	25	> 325
MicroFLON® T-815-RC	4-6	10	> 315

Carbon Footprint for PTFE polymerization is about 9.6 kg CO_{2eq} /kg PTFE

1 kg of Recycled PTFE will reduce about 10 kg of CO₂ emission !

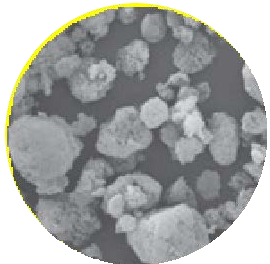


MicroFLON® S

Suspension Grade Prime PTFE Powders

These powders are designed for high purity applications. It can be easily compounded for use in PA, PC, POM, ABS, PBT, blends, and suitable for high temperature engineering plastics such as PPS, PEEK, and PEI.

Product	Mean Value (µm)	< 90% (µm)	Melting Point (°C)
MicroFLON® S-203-RC	15-25	40	> 328
MicroFLON® S-205-RC	12-22	35	> 328
MicroFLON® S-207-RC	10-13	25	> 328
MicroFLON® S-211-RC	4-6	10	> 328



NanoFLON®

Sub-micron Natural Prime PTFE Powders

These powders are offered as agglomerated particles with free flow and ease of incorporation, and the primary particle size as low as 200 nanometers. It can be compounded into a variety of elastomers, fluorinated polymers, PP, and PS for specialty films to improve the surface lubricity and wear resistance.

Product	Particle Size Mean Value (µm)	< 90% (µm)	Melting Point (°C)
NanoFLON® 102-RC	< 20	35	> 330
NanoFLON® 114T-RC	< 10	30	> 327
NanoFLON® 119N-RC	< 10	20	> 320
NanoFLON® 160G-RC	< 10	30	> 327



PTFE for Food Contact application

PTFE for the requirements of 21 CFR 177.1550.

These powders are natural prime grade micronized PTFE designed for food contact applications. These PTFE additives are recommended for thermoplastics and elastomers to reduce friction and enhance anti-wear properties.

Product	Particle Size Mean Value (μm)	Melting Point ($^{\circ}\text{C}$)	Bulk Density (g/l)
MicroFLON [®] 1433 FG-RC	4-6	> 328	300-500
MicroFLON [®] 1437 FG-RC	10-12	> 328	300-550
MicroFLON [®] S-205 FG-RC	12-22	> 328	300-550
NanoFLON [®] 101T-RC	6-9	> 327	200-500





Contact us for more information!
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