

Zonyl™ MPD 1700

PTFE Additive Dispersion

Product Information

Description

Zonyl™ MPD 1700 is a milky-white, aqueous, PTFE dispersion stabilized with a non-ionic surfactant. Unlike most other grades of PTFE dispersions, Zonyl™ MPD 1700 is based on low molecular weight PTFE. It is designed to be used as an additive in host systems, in order to impart some of the unique properties of PTFE. The low molecular weight may make it unsuitable in some applications that require the physical properties of the high molecular weight grades. When properly processed, the PTFE resin in Zonyl™ MPD 1700 exhibits the superior properties typical of the fluoroplastic resins: retention of properties after service at 260 °C (500 °F) and useful properties at -240 °C (-400 °F).

Zonyl™ MPD 1700 aqueous dispersion provides:

- Inertness to nearly all industrial chemicals and solvents
- Stability at high temperatures
- Excellent dielectric properties
- Lowest coefficient of friction of any solid material
- Excellent weatherability
- Non-stick characteristics

Typical Applications

- Additive for paints and coatings
- Provides anti-stick surfaces
- Reduces surface abrasion
- Reduces internal friction, such that application is easier
- Provides moisture protection
- De-molding
- Lubrication

Processing

The 0.2 µm (0.008 mil) average size particles are easy to disperse in waterborne systems. Zonyl™ MPD 1700 can easily be mixed with other aqueous host carriers or applied to surfaces and systems using conventional techniques, such as spray, roll, dip, or spin coating. Typical processing temperatures are as follows: application at room temperature, drying at 110 to 120 °C (230 to 248 °F), surfactant removal at 250 to 270 °C (482 to 518 °F) and eventually sintering (melting) at 360 to 380 °C (680 to 716 °F). The exact settings will depend on the particular process conditions, such as speed and loadings, on the product architecture and the equipment used.

Food Contact Compliance

Properly processed products (sintered at high temperatures common to the industry) made from Zonyl™ MPD 1700 resin can qualify for use in contact with food in compliance with FDA 21 CFR 177.1550 and European Regulation (EU) No. 10/2011. For details and information, please contact your Chemours representative.

Safety Precautions

WARNING! VAPORS CAN BE LIBERATED THAT MAY BE HAZARDOUS IF INHALED.

Before using Zonyl™ fluoroadditives, refer to the Safety Data Sheet and the latest edition of "The Guide to the Safe Handling of Fluoropolymer Resins," published by Plastics Industry Association (www.fluoropolymers.org) or PlasticsEurope (www.plasticseurope.org).

Open and use containers only in well-ventilated areas using local exhaust ventilation (LEV). Vapors and fumes liberated during hot processing of Zonyl™ fluoroadditives should be exhausted completely from the work area. Contamination of tobacco with these polymers must be avoided. Vapors and fumes liberated during hot processing that are not properly exhausted, or from smoking tobacco or cigarettes contaminated with Zonyl™ fluoroadditives, may cause flu-like symptoms, such as chills, fever, and sore throat. This

may not occur until several hours after exposure and will typically pass within about 24 hours.

Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

Storage and Handling

Zonyl™ MPD 1700 must be properly stored to maximize the stability of the dispersion. The PTFE particles will settle on prolonged standing and/or on prolonged heating—temperatures above 40 °C (104 °F) should be avoided. The dispersion must be protected from freezing, which will cause irreversible settling. The optimum storage temperature range is 7–24 °C (45–75 °F). If dispersions are to be stored for extended periods, lower-temperature storage is desirable. For optimal performance, Zonyl™ MPD 1700 should be gently mixed or rolled monthly and prior to use. Ammonium hydroxide is used by Chemours to set the pH to 9.5–11.0 at the time of shipment. High ambient temperatures can deplete the ammonium hydroxide level and reduce the pH. Declining pH eventually favors

bacterial growth, which causes odor and scum. The pH of opened containers should be measured and maintained between 9.5 and 11.0.

High-speed stirring, pumping, or any other violent agitation must be avoided to minimize sheared particles or coagulation and to minimize foaming. Ideally, the dispersion should be conveyed by gravity from storage to processing stations. Storage and handling areas should be clean. Keep dispersion drums closed and clean to avoid both contamination and coagulation by drying at the liquid surface. High processing temperatures will cause even very small foreign particles to become visible or to make defects in finished products. Good housekeeping and careful handling are essential.

Packaging

Zonyl™ MPD 1700 fluoroadditive is packaged in 30-L (8-gal) nonreturnable drums and 1000-L (263-gal) recyclable containers. Contact the local Chemours sales office for package sizes available in your specific geographic area.

Table 1. Typical Property Data for Zonyl™ MPD 1700 Fluoroadditive

Property	Test Method		Unit	Value
Solids Content (% PTFE by weight)	ASTM D4441-04	ISO12086	%	60
Density of Dispersion (at 60% solids)	ASTM D4441-04	ISO12086	g/cm ³	1.50
Surfactant Based on PTFE Solids	ASTM D4441-04	ISO12086	%	6
Dispersion Particle Size (average diameter)		Chemours	µm	0.210
pH of Dispersion	ASTM E70	ISO1148		10.5

Typical properties are not suitable for specification purposes.

CAUTION: Do not use or resell Chemours materials in medical applications involving implantation in the human body or contact with internal bodily fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative. For medical emergencies, spills, or other critical situations, call (866) 595-1473 within the United States. For those outside of the United States, call (302) 773-2000.

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For more information, visit teflon.com/zonyl

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