

3M Advanced Materials Division

3M™ Dynamar™ Polymer Processing Additive FX 5922M

Features and Benefits

- A high performance polymer processing additive (PPA) for use at very low levels
- Fast rate of melt fracture elimination at appropriate use level
- Reduces die build-up
- Improves extrusion processing of a wide range of polyolefin resins
- Robust performance in the presence of antiblock agents, pigments and other inorganic additives
- Lowers apparent melt viscosity

Product Description

Dynamar PPA FX 5922M is a free-flowing fluoropolymer-based processing additive that is designed for use at very low levels to improve the processing of polyolefins. At the very low use levels (typically 100 – 800 ppm) necessary to improve processing, it does not alter or detract from the good physical properties associated with high strength plastics.

Typical Physical Properties (Not for specification purposes.)

Property	3M™ Dynamar™ Polymer Processing Additive FX 5922M
Form	Granular
Color	White to Off-White
Active ingredients	97%
Inorganic additives	3%
Particle size	Approximately less than 10 Mesh
Bulk density	43 lb/ft ³ (0.7 g/cm ³)
Typical use levels	100 – 800 ppm

Dynamar PPA FX 5922M lowers apparent melt viscosity and permits fabricators to use high strength resins which otherwise could not be processed on available equipment. As a processing additive Dynamar PPA FX 5922M can reduce or eliminate melt fracture and can reduce extruder torque. Through optimization of the extrusion process, the use of FX 5922M may also allow an increase in output and yield films with enhanced and balanced bi-directional physical properties and improved clarity and gloss.

Dynamar PPA FX 5922M can offer performance and cost advantages. It exhibits exceptional commercial utility in low melt index film grade linear low density polyethylene (LLDPE) and high density polyethylene (HDPE). It is especially effective in polyolefin resins containing talc and silica-based anti-blocking agents, titanium dioxide-based pigments, and other inorganic additives. It can also be used at low levels to reduce extruder die build-up when processing LDPE, EVA and other polyolefin resins.

Incorporation Procedure

To be effective, FX 5922M must be melt blended into the host resin at any of the following stages prior to conversion into extruded products.

- Resin Producer
 - Direct addition (See 3M™ Dynamar™ PPAs “Direct Addition During Resin Manufacture Guidelines”)
 - Use a concentrate containing FX 5922M and let down at appropriate level
- Concentrate Producer
 - See 3M™ Dynamar™ PPAs “Concentrate Preparation Guidelines”
- End User
 - Source resin containing FX 5922M from a resin producer
 - Source a concentrate containing 2-3 % FX 5922M and let down at appropriate level

When processing resins containing Dynamar PPA FX 5922M, the benefits may not be noticed

immediately. Once enough resin has been processed to coat the surface of the extruder die, effects such as gradual elimination of melt fracture and stable die pressure will become increasingly apparent. This lag time can be reduced significantly by thoroughly cleaning then either preconditioning the extrusion equipment with a concentrate of Dynamar PPA FX 5922M or starting out with a higher concentration of FX 5922M. See the “3M™ Dynamar™ PPA Evaluation Guidelines” for more details on running Dynamar Polymer Processing Additives.

Storage and Handling

Dynamar PPA FX 5922M should be stored in a clean dry environment at temperatures below 27°C (80°F) to prevent agglomeration and ensure long-term storage. Please refer to the Material Safety Data Sheet for additional information about handling.

Safety/Toxicology

Follow the normal precautions observed with all fluoropolymer materials. Please consult the Material

Safety Data Sheet and Product Label for information regarding the safe handling of the material. By following all precautions and safety measures, processing these products poses no known health risks. General handling/processing precautions include:

1. Process only in well-ventilated areas.
2. Do not smoke in areas contaminated with powder/residue from these products.
3. Avoid eye contact.
4. If any skin comes into contact with these products during handling, wash with soap and water afterwards.
5. Avoid contact with hot fluoropolymer.

Potential hazards, including release of toxic vapours, can arise if processing occurs under excessively high temperature conditions. Vapour extractor units should be installed above processing equipment. When cleaning processing equipment, do not burn off any of this product with a naked flame or in a furnace.

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