

3M Advanced Materials Division

# 3M™ Dynamar™ Polymer Processing Additive FX 5929

## 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
- Robust performance in the presence of anti-block agents, pigments and other inorganic additives
- Improves extrusion processing of polyolefin resins
- Reduces die build-up
- Lowers apparent melt viscosity

## Product Description

3M™ Dynamar™ Polymer Processing Additive FX 5929 is a free-flowing fluoropolymer processing aid designed for use at very low levels to improve processing of thermoplastics. At the very low use levels (typically 100 – 700 ppm) necessary to improve processing, it does not alter the physical properties associated with high strength plastics.

Dynamar FX 5929 can offer performance advantages. It exhibits exceptional commercial utility

## Typical Physical Properties (Not for specification purposes.)

Property	3M™ Dynamar™ Polymer Processing Additive FX 5929
Form	Granular
Color	White to Off-White
Active ingredients	95%
Inorganic additives	5%
Particle size	Less than 10 Mesh
Bulk density	53 lb/ft <sup>3</sup> (0.85 g/cm <sup>3</sup> )
Typical use levels	100 – 700 ppm

in low melt index film grade linear low-density polyethylene (LLPDE) including metallocene linear low-density polyethylene (mLLDPE) 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 in a broad range of polyolefins.

Dynamar FX 5929 lowers apparent melt viscosity and permits fabricators to use high strength resins which otherwise could not be easily processed on available equipment.

As a processing additive, Dynamar FX 5929 can eliminate melt fracture and can reduce extrusion pressure. Through optimization of the extrusion

process, the use of Dynamar FX 5929 may also allow an increase in output and produce films with enhanced and balanced bi-directional physical properties and improved clarity and gloss.

## Incorporation Procedure

To be effective, Dynamar FX 5929 can 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™ PPA Direct Addition During Resin Manufacture Guidelines)
  - Use a concentrate containing FX 5929 and let down at appropriate level

## Incorporation Procedure (continued)

- Concentrate Producer
  - See 3M™ Dynamar™ PPA Concentrate Preparation Guidelines
  - See 3M™ Dynamar™ PPA Masterbatch Compounding Guidelines: FX 5929
- End User
  - Source resin containing FX 5929 from a resin producer
  - Source a concentrate (masterbatch) containing 2-3% FX 5929 and let down at appropriate level

## Food Contact/FDA Regulatory Status

This 3M product may be used at levels up to 2000 parts per million (ppm) as a polymer processing additive for all polymers intended

for use in contact with all food types described in Table 1 of 21 C.F.R. 176.170(c) under Conditions of Use A through H described in Table 2 of 21 C.F.R. 176.170(c).

3M makes no recommendation about the suitability of this product in the user's intended application. It is user's responsibility to determine whether its use of 3M products in a particular application is suitable and will comply with applicable laws and regulations.

## Storage and Handling

3M™ Dynamar FX 5929, when stored in a clean dry environment at temperatures below 27°C (80°F), has an extended shelf life of two years. Please refer to the Safety Data Sheet for additional information about handling.

## Safety/Toxicology

To avoid potential hazards (including the evolution of toxic vapors)

associated with processing this material, before using this product, please read and follow the precautions, directions for use and other information provided in the product label and these documents available to you through your 3M sales representative:

- Product Label
- Safety Data Sheet
- 3M™ Dynamar™ PPA Masterbatch Compounding Guidelines: FX 5929
- 3M™ Dynamar™ PPA Direct Addition During Resin Manufacture
- 3M™ Dynamar™ PPA Evaluation Guidelines

You should also read and follow all directions from suppliers of other ingredients that you intend to use in conjunction with 3M Dynamar PPA material.

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