



NYACOL HDS 2

NYACOL Highly Dispersible Silica for Polyolefins

OVERVIEW

NYACOL Highly Dispersible Silica (HDS 2) is a unique patented silica powder for polymer applications. The powder breaks down to 50 nm individual particles of silica in polyethylene or polypropylene using a simple extrusion compounding process. The product is available as a powder or as a predispersed masterbatch of 10% concentration. NYACOL HDS 2 provides unique antiblocking performance in films, allowing high gloss and effective, highly transparent antiblocking at low addition levels. In polyolefin foams, HDS 2 acts as a unique foam nucleator.

Because NYACOL HDS 2 contains a small amount of free water as well as chemically bound water and a surface coating, processing characteristics must be taken into account when formulating with NYACOL HDS 2. Specifically, the composition of NYACOL HDS 2 requires the use of vented extruder barrels and careful temperature control. The powder grades are also dusty as is typical of silica powders, and control of nuisance dust must be provided.

The guidelines below are recommended when processing NYACOL HDS 2 into polyolefins.

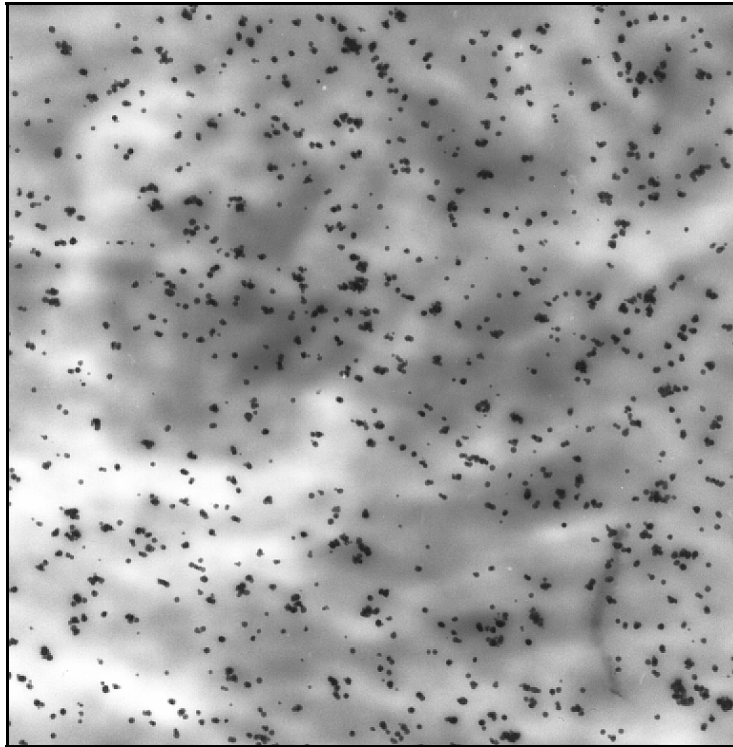
MATERIAL HANDLING

- ♦ Keep NYACOL HDS 2 sealed when not being handled to minimize moisture pickup.

EXTRUSION CONDITIONS

- ♦ Use a twin-screw extruder for best dispersion of NYACOL HDS 2.
We recommend counter-rotation mode.
- ♦ Feed the NYACOL HDS 2 at the feed throat end of the extruder.
- ♦ If a concentrate is being used, we recommend a let down ratio of 50:1 maximum.
- ♦ We have not evaluated all possible extrusion conditions.
Conditions which resulted in an excellent dispersion in 4 mfi PP are as follows:
Zones 1-3: 170° C; Zones 4-8: 180° C; Melt temp: 230° C; Screw RPM: 275; Mode: Counter-rotation.
- ♦ Use a vented extruder with vacuum devolatilization if possible.
We recommend 20" Hg at the vacuum port.

TYPICAL DISPERSION IN POLYPROPYLENE



NYACOL HDS 2 at 5% in PP at 30,000X

TYPICAL PROPERTIES

Appearance: Fine White Powder
Particle Size: 10 - 20 Microns as Spray Dried
Dispersed Size: 50 Nanometers
Surface: Hydrophobic
Bulk Density: 0.7 g/ml

FOR ADDITIONAL INFORMATION OR TO PLACE AN ORDER

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