



INFILM™ SPECIALIST ANTI-BLOCKING AGENTS

Plastic films exhibit self-adhesion properties. This phenomenon is known as blocking.

Many particulate additives are used to overcome these difficulties; these products being known in general as anti-blocking agents. The materials are believed to work by physically preventing surface to surface adhesion with individual filler particles forming protrusions on the film surface. The friction and slip characteristics of the film are likewise affected. The overall particle size distribution (p.s.d.) of the anti-blocking agents affect the micro surface smoothness of the film. Optical properties of the film should be unaffected.

Normally the anti-blocking agent is introduced as a dry additive during compounding or processing of the polymer; or for specialised applications, as an organic-solvent based dispersion prior to polymerisation.

Imerys offers a number of additives for specialised films; these are engineered by controlling particle shape, p.s.d. and chemistry very closely. The specifications for some of these are given below.

The recommended uses for our anti-blocking agents for specialist films are:

- **InFilm™ 813** Extruded polyester film
- **InFilm™ 3117** Extruded polyester film

In addition to the **InFilm™** additives for specialist films, Imerys produces a range of products suitable for polyethylene and PVC

films and sheets.

- **InFilm™ 200** Low & linear/low density polyethylene film
- **PoleStar™ 200R**
- **InFilm™ HC** High clarity PE applications
- **InFilm™ HCF**
- **Supreme™** Unplasticised PVC sheeting
- **Speswhite™** Unplasticised PVC sheeting

InFilm™ 200 and **PoleStar™ 200R** are medium particle size calcined kaolins. Their chemical purity, inertness, particle shape and size distribution ensure that in a polyolefin film they give low haze, good anti-blocking, low colour generation and low additive adsorption. Consequently they are widely used as anti-blocking agents.

InFilm™ HC and **InFilm™ HCF** are amorphous silicates from a sustainable feedstock, with a matched refractive index to film grade polyethylenes. These grades offer an excellent balance of optical properties and antiblock performance for high clarity film applications. As with **InFilm™ 200** and **PoleStar™ 200R** these materials can be added either during post polymerisation pelletising, or via a masterbatch.

In addition to the anti-blocking agents described here, Imerys' technical and commercial resources are available to customers in the development of new and improved products for anti-blocking applications.

SPECIFICATION - INFILM™ RANGE

| | InFilm® 813 (Kaolin) | InFilm® 3117* (Calcined Kaolin) | InFilm™ 200 (Calcined Kaolin) | InFilm™ HC (Amorphous Silicate) | InFilm™ HCF (Amorphous Silicate) |
|----------------------|--------------------------------|---|---|---|--|
| + 53 micron (% max.) | 0.01 | 0.01 | 0.05 | 0.03 | 0.03 |
| + 10 micron (% max.) | 0.10 | 0.20 | 3 | - | - |
| - 5 micron (%) | - | - | - | 35 | 55 |
| - 3 micron (%) | 98 ± 1 | - | - | - | - |
| - 2 micron (%) | - | 98 | 44 (min) | - | - |
| - 1 micron (%) | 67 ± 5 | 97 | - | - | - |
| Moisture (% max.) | 1.0 | - | 0.5 | 0.3 | 0.3 |
| pH | 7-8 | - | 6.5 | - | - |

SPECIFICATION - OTHER PRODUCTS

| | Supreme™ (Kaolin) | Speswhite™ (Kaolin) | PoleStar™ 200R (Calcined Kaolin) |
|----------------------|----------------------|------------------------|-------------------------------------|
| Brightness (ISO) | 87.5 ± 1.0 | 85.5 ± 0.7 | 88.5 ± 2.0 |
| + 300 mesh (% max.) | 0.02 | 0.02 | 0.05 |
| + 10 micron (% max.) | 0.2 | 0.5 | 10 |
| - 2 micron (%) | - | 76 - 83 | 44 (min.) |
| - 1 micron (%) | 77 | - | - |
| Moisture (% max.) | 1.5 | 1.5 | 0.5 |
| pH | 5.0 ± 0.5 | 5.5 | 6.5 ± 0.5 |

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