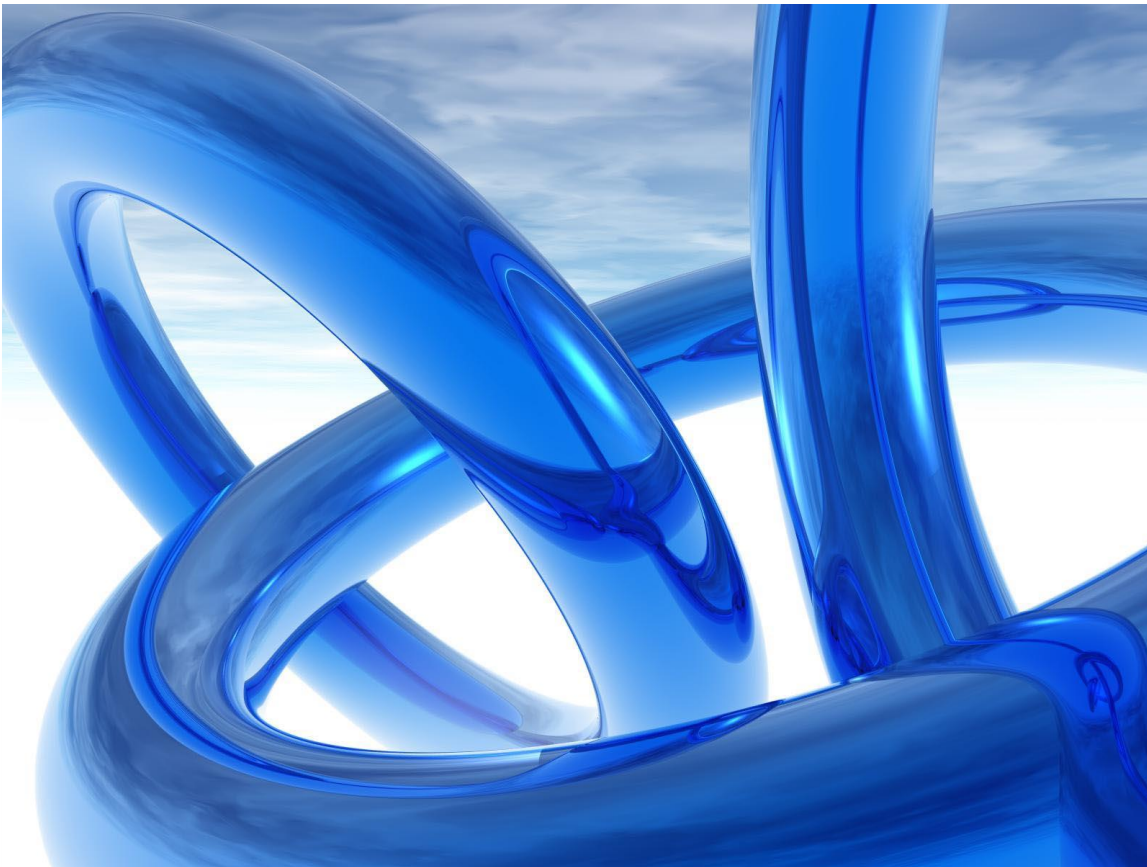


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## Antifogs

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**Antifog masterbatches from Ampacet prevent the formation of fog on or within a plastic part across a wide array of applications including food packaging and agricultural films.**

## Summary

Antifog masterbatches provide short and long-term antifog performance and are typically used in the skin layer of a polyolefin film. These migratory products are typically used in cold-fog applications such as fresh produce, meat, and general refrigerated food packages as well as in hot-fog applications where food may be cooked or kept hot in a package. Agricultural applications such as greenhouse films are also typical. Ampacet Antifog masterbatches allow a producer to include the chemistry into a film or molded part instead of a topical application.

## Product Overview

Antifog masterbatches prevent “fog” formation which is condensation of water vapour on the surface of a clear plastic film in the form of small, discrete droplets. This causes poor film transparency, low attractiveness, and spoilage of packaged foods. Antifog chemistries rely upon their migration through the polymer to the surface where it bonds with atmospheric moisture to form a microscopic continuous layer across the surface. The additive reduces the surface tension of water which lowers the contact angle of water with the polyolefin surface creating a more transparent view.

Antifog products are available in two general categories:  
**Cold-Fog** and **Hot-Fog** chemistries.

## Representative Product Applications

- Fresh produce packaging
- Refrigerated food packaging
- Meat packaging
- Agricultural applications such as greenhouse film



## Products/Codes

Production Code	Resin	Application	LDR
102163-U	LLDPE	Blown Film	7-10%
100651	LDPE LLDPE	Blown & Cast Film	7-10%
402655-U	PP	Cast & Oriented PP	8-10%
403895	PP	Cast & Oriented PP	8-10%

## Technical Specifications

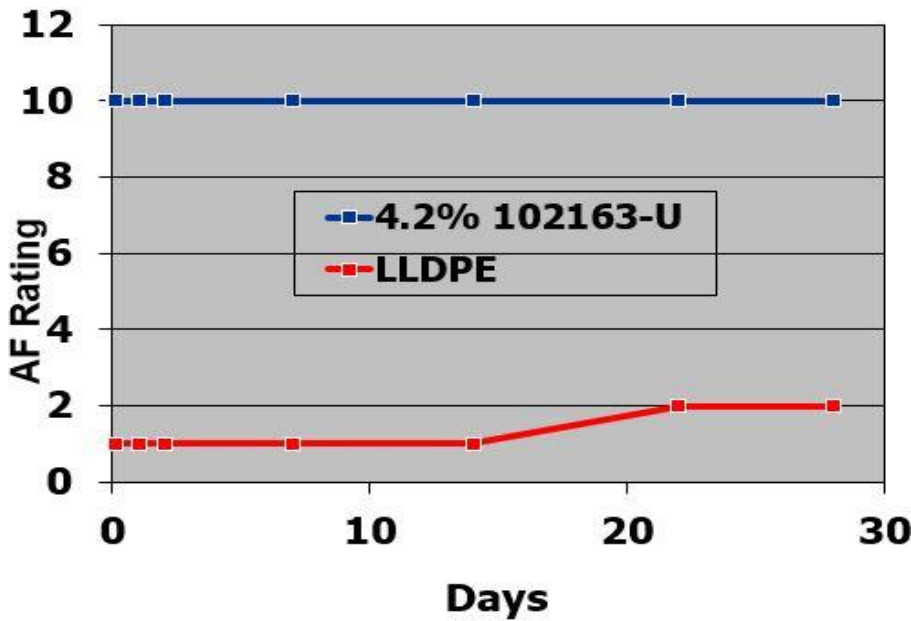
Product	Cold or Hot Fog	Max Temperature	FDA	Comments
102163-U	Both	Up to 450°F	Application dependent	Performs through freeze/thaw cycle
100651	Both	Up to 500°F	Application dependent	Higher thermal stability
402655-U	Cold	Up to 550°F	Application dependent	Instant effect after 15min storage in refrigerator
403895	Hot	Up to 550°F	Application dependent	Limited interaction with polar bodies



## Performance Data Details

- Antifog rating for Cold-Fog film application

- Monolayer LLDPE blown film 1 mil



Transparency

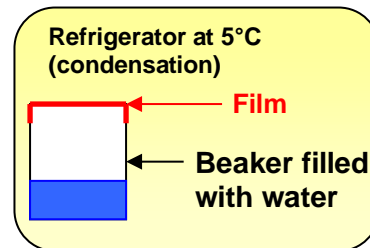


The Cold Fog Test consists in placing a beaker filled with water and covered with a film sample in a refrigerator at 4°C (cf. Figure 1). The film appearance is checked (see photos below) and evaluated according to the ratings described in Table 1.

**Table 1: rating for tested films**

10: Transparent film
8: Large & scattered transparent drops
6: Complete layer of large transparent drops
4: Opaque or transparent layer of large droplets
2: Opaque layer of small fog droplets

**Figure 1: Cold fog test**



For more information on **Antifogs**, its uses and complete Regulatory Status, contact your Ampacet Account Executive or visit [www.ampacet.com](http://www.ampacet.com).

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Ampacet Website: [www.ampacet.com](http://www.ampacet.com)

**Global Regional Headquarters:**

Ampacet North America: 660 White Plains Road, Tarrytown, NY 10591-5130

Ampacet South America, S.A.: Dardo Rocha 2454 – 2o Piso, (B1640FTH) San Isidro, Buenos, Aires, Argentina

Ampacet Europe, S.A.: Zoning Industriel Riedgen, L-3451 Dudelange, Luxembourg

Ampacet Asia: Eastern Seaboard Industrial Estate (Rayong), 64/19 Moo 4, Highway 331, Pluakdaeng, Rayong 21140

