



TECHNICAL DATASHEET

PRODUCT NAME – Anti Fog – Hot & Cold

PRODUCT CODE – HITECH-AF-9431

PRODUCT DESCRIPTION

Antifog masterbatch is formulated to reduce or prevent formation of water droplets on the surface of the product by merging them and form the continuous transparent layer in order to maintain the clarity of film.

Food packaging and horticulture firms are designed in such a way that prevent water droplet cloudiness, low volatility and also prevent yellowish effect along with negative effect over transparency and odor of the film.

The following factors are taken into consideration while the process take place: Thickness of the film and condition of the manufacturing process, Methods of production.

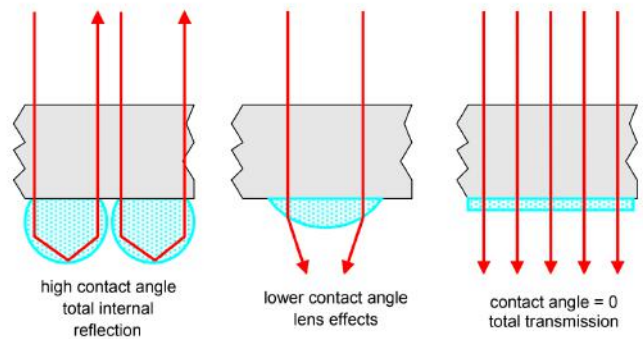
HiTech anti-fogging treatments used on glass or plastic surfaces in optical applications such as lenses and goggles. Anti-fogging treatments, either those that are put onto the surface of optically clear plastic products or those that are put into a masterbatch format to become an inherent part of the plastic, work by minimizing surface tension — which results in a non-scattering film of water instead of single droplets. This works by altering the degree of wetting.

In the context of plastics, fogging is the condensation of visible water droplets on a plastic film surface

- It will occur if the atmosphere in an enclosed space is cooled below its dew point
- Or more commonly it will occur if there is a temperature differential between the inside and the outside of the enclosure causing localised cooling at the interface (the plastic film).

Problems associated with fogging in food packaging:

- Loss of transparency, cannot see the contents of the package clearly
- Customer perceives the package and contents to be of lower quality
- Bacterial growth in packaging



FEATURES

- Reduced moisture formation in packaging
- Can be incorporated into the polymer during processing
- Migrate to the surface raising the surface energy of the polymer and lowering the surface energy of any water droplets
- Condensed water droplets spread into a continuous and uniform transparent layer on the film surface
- Improved transparency of the packaging
- Improved durability of the contents
- Improved presentation of the food
- Packs look more appealing to customers

USA - 14310 Gannet St , La Mirada, California
 India – 18 Sec 6 Manesar, Gurgaon, India
 Germany - Schlosserstrasse 13, Lindlar, Germany 51789
 Italy - Via dell' Artigianato, 15, Provincia di Modena





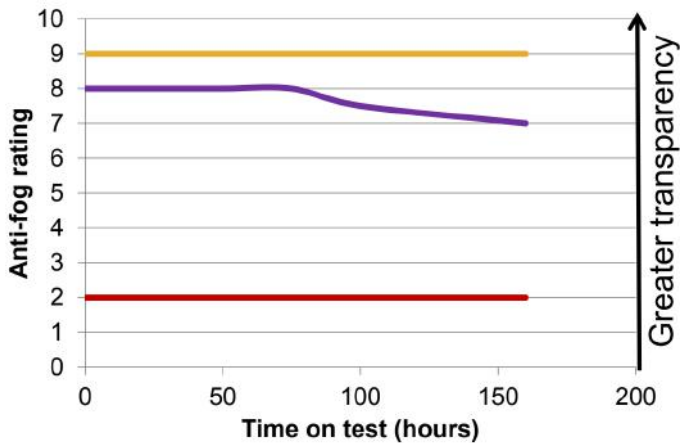
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Red – Control , Blue – Standard GMO, Yellow – HITECH AF

Test Results



1-2% dosage – Cold Fog – 50 microns films

Red – Control , Blue – Standard GMO, Yellow – HITECH AF

TECHNICAL SPECIFICATION

Properties	Value
Composition	EVA or LDPE
	75-80%
	20%
	<5%
Physical State	Pellets
Colour	White to off white
Active Content	20-25%
Melting Temperature	~ 80 C EVA ~ 120 C EVA
Decomposition Temperature:	~ 290C
Application	LPPE / LLDPE – 1-2% PPCP – 2-3% PP – 2% GPPS – 2%
Grades Available	9431 – E (Eva Based) 9431– L (LDPE Based) 9431 – P (PP Based)

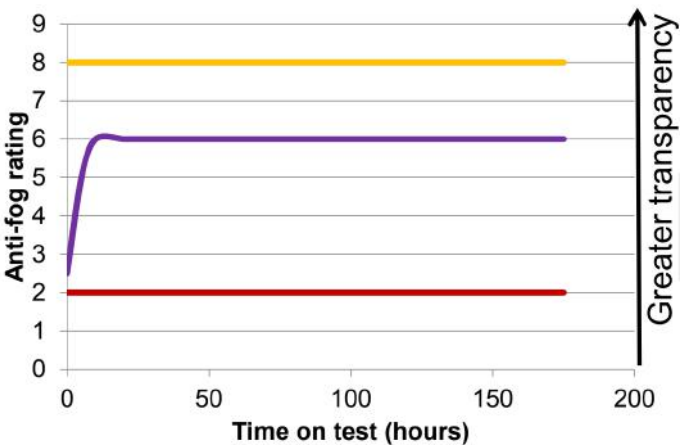
USAGE

It is a ready to use and since every application is unique it is recommended for the users to determine the applicable usage rate based on their requirements.

DISPOSAL

Recommendation: Do not allow product to reach sewage system.

Disposal of product or waste must comply with official local regulations.



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Packaging that cannot be recycled must be disposed in the same manner as the product.

SAFETY INFORMATION

- Keep Out Of Reach Of Children
- Keep Container Tightly Closed
- Not For Internal Consumption
- Consult Material Safety Data Sheet For More Information

DECLARATION

This Data sheet and information it contains is considered to be accurate at the date of printing. No representation or warranty, expressed or implied is made as to the accuracy or completeness of the data and information contained in this publication. It is the User’s obligation to evaluate and use products safely and within the scope advised in the data sheet and to comply with all applicable laws and regulations.

LIMITED WARRANTY

All statements, technical information and recommendations contained herein are based on validations and tests conducted by HI TECH INTERNATIONAL or its partners and are believed to be reliable, but the accuracy or completeness thereof is not guaranteed. We warrant our products will be free from defects when shipped to customer. Our obligation under this warranty shall be limited to replacement of product that proves to be defective. To obtain replacement product under this warranty, the customer must notify Hi Tech International or its partners or agent of the claimed defect within 1 month after shipment of product to customer. Customer shall pay all freight charges for replacement

products. We shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the products. And any financial claims shall be limited to the value of the film sold.

Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. No representation or recommendation not contained herein shall have any force or effect unless in a written document signed by an officer of the company. The foregoing warranty is exclusive and in lieu of all other warranties, express, implied or statutory, including without limitation any implied warranty of merchantability or of fitness for a particular purpose. In no case shall HI TECH INTERNATIONAL be liable for incidental or consequential damages.

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