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# **MECOSTAT<sup>®</sup>-3**

**Antifog Coating Agent  
for Plastics**

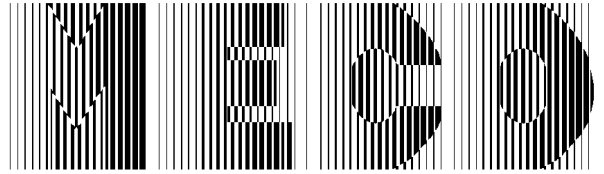
**for Food Packing and Technical Applications**

**For stretching applications and oriented Films  
and cast films (e.g. CPP)**

**MECOSTAT<sup>®</sup>-3/749**

**MECO  
ENERGIE-KOLLEKTOREN GmbH  
Von-Steinbeis-Str. 7  
D-78476 Allensbach / Germany**

**phone:    ++49 (0) 75 33 / 94 98 3 - 0  
fax:       ++49 (0) 75 33 / 94 98 3 - 33  
e-mail:    service@mecostat.de  
Internet:  <http://www.mecostat.com>**



## **General**

**MECOSTAT-3/749** Surface Antifog agent is a concentrated, highly effective liquid coating material for the antifog finishing of plastic surfaces.

Antifogging agents prevent condensation on the surface of the plastics and bring clear visibility. The resistance of the coating to temperature ensures that subsequent thermoforming or stretching can be performed without losing the antifog finishing. The antifog finish of the film remains virtually unaffected by the stretching of the material after coating.

## **Areas of Application**

Antifog finishing of

- oriented films (BOPP, BOPET etc.)
- cast film (CPP)
- transparent films for food packaging
- transparent films for packaging of farm products

## **Mode of Antifog Operation**

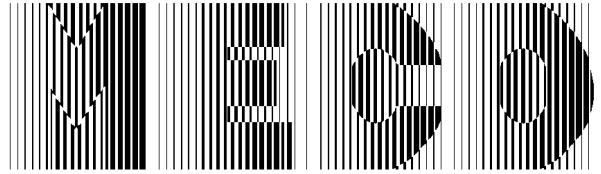
Antifogging performance hinges on two chemical capabilities: sheeting and hydrophilicity, (the compatibility of the molecules with water).

Water ordinarily condenses on a surface as tiny droplets, which refract light in such a way that you cannot easily see through the surface. If the surface is treated with an antifog agent, you get a vastly different picture.

The antifog agent molecules are hydrophiles, so they dissolve in the water droplets. And as they do, they lower the surface tension of the droplets. Droplets spread on the surface and form a continuous film. This film refracts light the same way as a dry surface with the result of a clear visibility.

## **Typical Properties of the Coating with MECOSTAT-3/749**

- long term antifog finish for several years
- strong adhesion of the product to the plastic surface resulting in high stability against physical effects such as friction etc.
- the coating is temperature resistant resulting in unproblematic stretching without impairing the antifog properties
- excellent wetting properties on plastic surfaces resulting in good antifog finish even under difficult conditions



## **Typical Properties of the Coating with MECOSTAT-3/749**

- the slip properties of the plastic surfaces are improved by the coating
- highly transparent coating
- usable in the packing industry for packaging of foodstuff according to EC and FDA-Directives
- **MECOSTAT-3/749** is highly productive and therefore keeps down costs of antifog finishing
- problem-free recycling of coated plastics

## **Processing Directions**

- the following processes are suitable for coating: immersion, felt application, roll coating and application by flexographic or gravure printing, spray coating, rotor spraying coating (the appropriate procedures depend on the purpose of application).
- coating quantity: according to the purpose of application between 2 and 8 g per sqm (wet coating amount), depending on required effect and stretching ratio
- before further processing or winding the film the coated surface must be completely dry (if required, drying with warm air)
- **MECOSTAT-3/749** is supplied as a ready for use solution for stretching applications, for other applications (cast film) or slight stretching it can be diluted with Isopropanol
- machine parts which come into contact with liquid **MECOSTAT-3/749** must be made of corrosion proof materials.
- a combination of **MECOSTAT-3/749** with antistatic additives is not recommended because of possible reactions
- depending on the application, a corona pretreatment is recommended (e.g. polyolefines and polystyrene)
- for detailed processing and safety information, please refer to the appropriate safety data sheet
- due to the large number of applications and processing procedures we would like to point out that corresponding tests have to be performed by the customer to make sure that there will be no incompatibility with the raw materials, additives and the processing procedures

## **Safety**

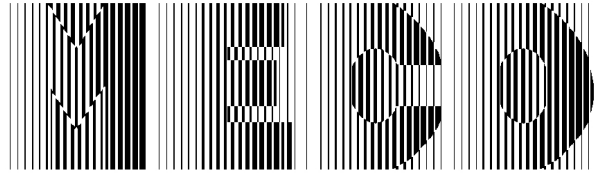
**MECOSTAT-3/749** as well as the raw materials contained in it comply with the appropriate EC-Directives on the finishing of plastics in food packaging and with the US FDA food additive regulations.

**MECOSTAT-3/749** is environment-friendly and easily biodegradable.

## **Service**

We offer comprehensive technical advice with regard to both, to the right choice of the right type of material for application and to the coating systems.

Our application technology department is at your disposal for the conception of optimal application systems, as well as for preparing upgrade suggestions for installations already in use.



## Calculation of the consumption rate (unstretched film)

### consumption rate of MECOSTAT-3 (or diluted solution) per kg plastic

$$\text{consumption MECOSTAT per kg plastic [g]} = \frac{\text{coating rate/m}^2 \text{ [g]} \times 1000}{\text{sheet thickness}[\mu\text{m}] \times \text{spec. weight of plastic [g/cm}^3\text{]}}$$

### coated sheet per kg MECOSTAT-3 (or diluted solution) (before stretching)

$$\text{coated sheet per kg MECOSTAT [kg]} = \frac{\text{foil thickness}[\mu\text{m}] \times \text{spec. weight of plastic [g/cm}^3\text{]}}{\text{coating rate/m}^2 \text{ [g]}}$$

### Typical value of spec. weights of different plastics

The exact specific weight depends on both, the plastic formula used and on the additives used. Therefore, the given values are only approximated values.

APET	:	1.35 g/cm <sup>3</sup>
PVC	:	1.42 g/cm <sup>3</sup>
PP	:	0.93 g/cm <sup>3</sup>
PETG	:	1.17 g/cm <sup>3</sup>
LDPE	:	0.95 g/cm <sup>3</sup>
HDPE	:	0.92 g/cm <sup>3</sup>
PS	:	1.10 g/cm <sup>3</sup>
ABS	:	1.12 g/cm <sup>3</sup>
PC	:	1.20 g/cm <sup>3</sup>
PTFE	:	2.16 g/cm <sup>3</sup>
PMMA	:	1.18 g/cm <sup>3</sup>
PUR	:	1.25 g/cm <sup>3</sup>