

# **MECOSTAT<sup>®</sup>-3**

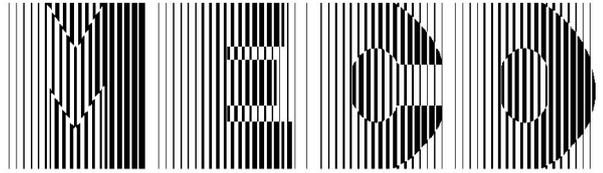
**Antifog, Antiblocking and Antistatic Coating Agent  
for Plastics**

**Food Packaging and Technical Applications**

**MECOSTAT<sup>®</sup>-3/722**

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## **General**

**MECOSTAT-3/722** is a highly effective liquid coating material for the antifog, antistatic and antiblocking finishing of plastic surfaces as well as for improving slip properties.

Antifog agents prevent condensation on the surface of the plastics and bring clear visibility.

The resistance of the coating to temperature ensures that subsequent thermoforming can be performed without losing the antifog, antistatic or antiblocking properties.

## **Areas of Application**

Antifogging, antistatic and antiblocking finishing of

- transparent thermoforming sheets
- transparent films for food packaging
- transparent films for packaging of farm products

## **Mode of Antifog Operation**

The anti-fogging properties of a surface depend primarily on how hydrophilic the surface is and what surface energy it has.

Water normally condenses on plastic surfaces in the form of tiny droplets, which refract the light in such a way that the surface appears opaque.

If this surface is coated with MECOSTAT-3/722, the picture is completely different:

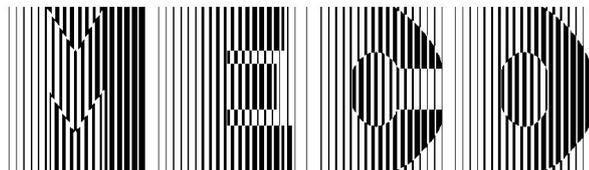
The molecules of the antifog agent are partly hydrophilic, so that they dissolve in the water droplets or distribute them finely.

This reduces the surface tension of the droplets, which causes the droplets to flow apart and form a uniform film on the surface.

This fluid film refracts the light in a similar way to a dry surface, with the result that it is highly transparent.

## **Typical Properties of the Coating with MECOSTAT-3/722**

- long term antifog, antiblock and antistatic finishing for several years
- surface resistance as far as  $10^9 \Omega$  at standard climatic conditions
- strong adhesion of the coating agent to the plastic surface resulting in high stability against physical effects such as friction etc.
- the coating is temperature resistant resulting in unproblematic thermoforming without impairing the antifog, antiblock or antistatic finish
- the slip properties of the plastic surfaces are improved by the coating
- striation-free highly transparent coating
- usable in the packing industry for foodstuffs according to EC-Directives
- **MECOSTAT-3/722** is high yielding and therefore keeps down costs of antifog, antiblock and antistatic finish
- problem-free recycling of coated plastics



## **Processing Directions**

- the following processes are suitable for coating: immersion bath, felting, roller application, application by flexographic or gravure printing, spray coating, rotor spraying coating (the appropriate processes are dependent on the application purpose)
- coating quantity: 2 to 5 g per sqm (wet coating amount)
- the coated surface must be completely dry before further processing or rolling up the sheet (if required, drying with warm air)
- If **MECOSTAT-3/722** is applied on warm plastic surfaces, the surface temperature should not exceed 80 °C
- **MECOSTAT-3/722** is supplied as a ready for use solution
- machine parts which come into contact with **MECOSTAT-3/722** should be made of corrosion proof materials
- a combination of **MECOSTAT-3/722** with antistatic additives is not recommended because of possible reactions
- depending on the particular application corona pretreatment is recommended (on 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**

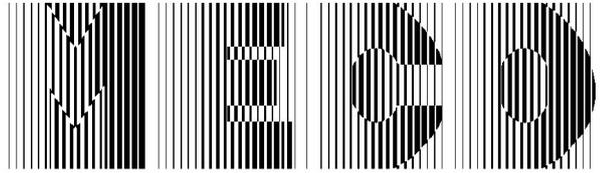
**MECOSTAT-3/722** as well as the raw materials contained in it comply and with the appropriate EC-Directives on the antistatic finishing of plastics in food packaging.

**MECOSTAT-3/722** is environment-friendly and easily biodegradable.

## **Service**

We offer comprehensive technical support with regard to not only the choice of the suitable type of material for your application but also to the coating systems.

Our Application Technology Department is at your disposal for the design of optimal application processes as well as for preparing suggestions for adapting installations already in use.



## Calculation of the consumption rate

### consumption rate of MECOSTAT-3 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

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

## 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>