

MECOSTAT[®]-3

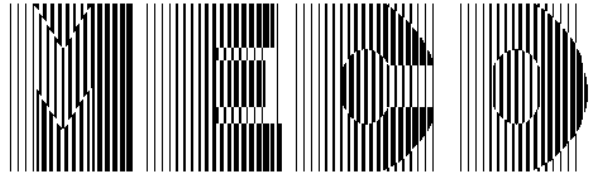
Surface Antistatic Agents for Plastics

Special "low ion" type for packaging
of electronic items and devices

MECOSTAT[®]-3/247

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General

MECOSTAT-3 surface antistatic agents are highly effective liquid coating materials for the antistatic treatment of plastic surfaces as well as for improving slip properties.

The coating's resistance to temperature guarantees that subsequent thermoforming can be performed without suffering any damage. Furthermore, the antistatic treatment of the material remains virtually unaffected by the stretching of the material during the thermoforming process.

MECOSTAT-3/247 is based on an isopropanol solvent and is very suitable for the application on flexographic and gravure printing systems.

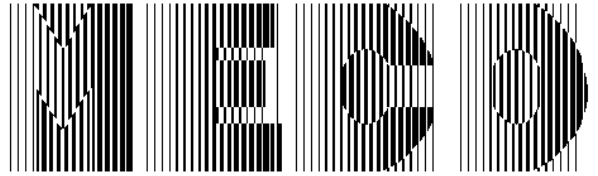
Areas of Application

Antistatic treatment of

- special packaging for electronic items and devices
- thermoforming sheet
- other foils and sheets
- moulded, injection moulded and hollow bodied parts
- profiles

Typical Coating Properties

- long-term antistatic treatment for several years with reduction of the surface resistance as far as $1 \times 10^8 \Omega$ even at low rel. humidity
- antistatic effect at very low humidity of the air
- extremely low ion content (chlorides, sulfates, nitrates, phosphates), meets all the Class 1 cleanliness specifications for electronic packaging
- strong adhesion of the antistatic 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 antistatic treatment
- a high degree of cross-linkage on plastic surfaces resulting in good antistatic treatment even under major thermoforming conditions
- the slip properties of the plastic surfaces are improved considerably by the coating, therefore improves the stackability of thermoformed parts
- no migration into the packed material, no accumulation during recycling
- highly transparent coating without striation
- **MECOSTAT-3/247** is high yielding and therefore keeps down the costs of antistatic treatment
- unproblematic recycling of coated plastics



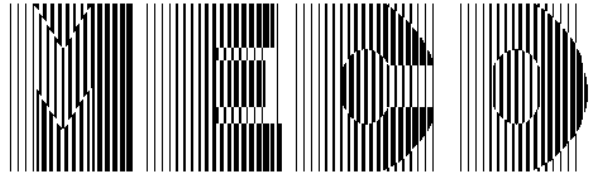
Processing Directions

- the following processes are suitable for coating: immersion, felting, roller application, application by flexographic or gravure printing (the appropriate processes are dependent on the particular purpose of application)
- coating quantity: depending on the application purpose 1.0 to 3.0 g/m² wet coating
- the coated surface must be completely dry before further processing or rolling up the foil (possibly air-dried) If **MECOSTAT-3** is applied on warm plastic surfaces, the surface temperature must not be more than 80 °C
- **MECOSTAT-3/247** is delivered as a ready-to-use solution
- **MECOSTAT-3/247** contains isopropyl alcohol, use explosion-proof installations
- machine parts which come into contact with **MECOSTAT-3** must be made of corrosion-proof materials (not of copper, aluminium or alloys of them)
- a combination of **MECOSTAT-3** with antistatic additives is not recommended because of possible reactions
- depending on the particular application Corona pretreatment is recommended (e.g., on polyolefines and partially on polystyrene)
- for detailed processing and safety information, please refer to the appropriate safety data sheets
- 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

Service

We offer comprehensive technical support with regard to not only the choice of the right type of material for application but also 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 consumption rate

consumption rate of MECOSTAT-3 per kg plastic

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

coated foil per kg MECOSTAT-3

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

Approx. value of spec. weights of different plastics

The exact spec. weight depends on the used plastic formula and on the used additives. The given values are therefore only approximated values.

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