MECOSTAT®-3

Antistatic Coating Agent for Plastics

Food Packaging and Technical Applications

MECOSTAT®-3/145

General

MECOSTAT-3/145 Surface Antistatic Agent is a highly effective liquid coating material for the antistatic finishing of plastic surfaces as well as for improving slip properties.

The coating´s resistance to temperature ensures that subsequent thermoforming can be performed without suffering any damage. Furthermore, the antistatic finishing of the material remains virtually unaffected by the stretching of the material during the thermo-forming process.

Areas of Application

Antistatic finishing of

- films, sheets, profiles and thermoformed parts of all types (films up to 800 µm)
- packing for food
- technical sheets
- moulded, injection moulded and hollow bodied parts
- mono- and multifilaments, threads and fabrics of all kinds

Typical Properties of the Coating with MECOSTAT-3/145

- long term antistatic finishing for several years with reduction of the surface resistance as far as 10^8 Ω at standard climatic conditions
- antistatic effect also at low humidity (< 25%)
- strong adhesion of the antistatic agent to the plastic surface resulting in high stability against physical effects such as friction etc.
- temperature resistant coating results in unproblematic thermoforming without impairing the antistatic finshing
- excellent wetting properties on plastic surfaces resulting in good antistatic finishing even under difficult thermoforming conditions
- the slip properties of the plastic surfaces are considerably improved by the coating, and therefore improves the stackability of the thermoformed parts
- **MECOSTAT-3/145** replaces the additives used until now
- no migration into the liquid filled, no accumulation during recycling
- striation-free highly transparent coating
- **MECOSTAT-3/145** is highly productive and therefore keeps down costs of antistatic finishing
- usable in the packing industry for foodstuffs according to EC-Directives
- 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). If **MECOSTAT-3/145** is applied on warm plastic surfaces, the surface temperature should not exceed 80 °C
- coating quantity: according to the purpose of application between 1 and 4 g per sqm (wet coating amount)
- the coated surface must be completely dry before further processing or winding the film (if required, drying with warm air)
- **MECOSTAT-3/145** is supplied as a ready for use solution
- machine parts which come into contact with **MECOSTAT-3/145** should be made of corrosion proof materials but not from copper, aluminium and their alloys
- a combination of **MECOSTAT-3/145** 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-3/145 as well as the raw materials contained in it comply with the appropriate EC-Directives on the antistatic finishing of plastics in food packaging.
MECOSTAT-3/145 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

consumption rate of MECOSTAT-3 per kg plastic

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

coated sheet per kg MECOSTAT-3

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

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/cm³
PVC	:	1.42 g/cm³
PP	:	0.93 g/cm³
PETG	:	1.17 g/cm³
LDPE	:	0.95 g/cm³
HDPE	:	0.92 g/cm³
PS	:	1.10 g/cm³
ABS	:	1.12 g/cm³
PC	:	1.20 g/cm³
PTFE	:	2.16 g/cm³
PMMA	:	1.18 g/cm³
PUR	:	1.25 g/cm³