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TECHNICAL DATASHEET STATICONTROL MSG190G

Version : 3

Date : 01/09/2018

STATICONTROL MSG190G is an internal emulsifier – antistatic additive approved for treatment of *polyolephenic* packaging. *(all the ingredients are on a vegetable base – without GMO (genetically manipulated organisms) – Kosher and Halal)*
Usual dosage rates are: for PP INJECTION 0,3 to 1,5 % - plasticized PVC 0,6 % (if clear film).

With these advised dosage rates, RS # 10^{11} ohms to 10^{10} ohms can be performed.
The higher the dosage rate is, the more important the secondary effects are.

TECHNICAL DATA:

active ingredient	fatty esters/polyol
density at 20°C kg/cm^3	#950
apparent density kg/m^3	# 550
viscosity at 150° C mPas	# 8
moisture rate	< 0,1 %
appearance	granules
thermal stability	200 to 300 ° C for few minutes transit time
stock in its packing	no limitation
packing	25 kg bags on pallet of 1000 kg

Cautions : do not pre-heat over 45°C (risk of agglomerating).

Use : mix with dosage or/and mixing machine.

STATICONTROL MSG190G produces an immediate antistatic effect from a few minutes to a few hours (depending dosage rate) after extrusion or injection (Corona treatment speeds up migration), this for a lasting of a few months, according dosage rate and without rubbing. Normal rate used: from 0.3 to 1.5 % maximum for PP injection (high MFI). Some mineral components can absorb the antistatic product and decrease its migration, so its efficiency.

The migration of MSG190G gives a slight decrease of surface tension, it is safer to increase slightly the power of the Corona generator (if flaming and correctly adjusted, the influence of MSG190G is not noticeable). Check the seal ability too.

STATICONTROL MSG190G has a lubricating effect on the extrusion screw, check the process and limit the dosage rate if necessary (mainly at start up). A slight purging effect can be getting during the first minutes of extrusion. STATICONTROL MSG190G is giving slip, anti-block, brightness, anti-fog effects (more or less important depending on dosage rates). MSG190G is a very good de-moulding agent (dosage 0,8%).

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Dosage rates must be tested before use in production to check their optimum value regarding efficiency parameters (fastness, migrating lasting) economic and technical ones, as surface tension, etc…

We can operate measurements of dyne level, electrostatic performances on your samples and advise you

ANTISTATIC TREATMENTS

INTRODUCTION:

Electrostatic charges are mostly generated by friction (tribo electric effect) or from induction. They are producing negative effects as: dust, bad handling, electric discharges, sparks.
Their elimination can be done either with electrostatic bars (without any lasting effect), either chemically (with lasting effect) by using migrating agents in the resin and on the surface (these additives are using surrounding humidity to decrease the surface resistivity of the treated material from 10^{16} to $10^{10/12}$ ohms, this is avoiding any charge accumulation (charge is disappearing at once before growing), either by adding in the resin conductive materials as carbon or metal (these treatments which are difficult to process, give the possibility to reach very low resistivity as $10^{5/6}$ ohms independently of surrounding humidity).

BOUSSEY – CONTROL designed several additives (migrating):
INTERNAL ANTISTATIC PRODUCT, as:
- **AS–15 N** antistatic treatment for **LDPE**
- **AS–11 N** antistatic treatment for **PP, plasticized PVC**

and SURFACE ANTISTATIC, as **AS–9O–EIO**.

IMPORTANT :
Like all migrating agents, these additives are producing secondary effects:
- sometimes positive : slip effect, anti-fog, de-moulding effect.
- sometimes negative : decrease of the surface tension: printing or gluing more difficult to achieve (dyne level must be checked, Corona or Flame treatment can be needed), lubricating effect in the process, seal ability can also be modified.

We have produced optimum quality and rules of use for our additives in the limit of knowledge today's technology. We keep in mind, in our advices, your work conditions as compatibility, printing, seal

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ability, organoleptic, etc.
We are organized to measure your samples for surface tension (dynes/cm) and electrostatic performances (measurement of half decay and Rs under controlled atmosphere).

Comparatives electrostatic measurements must be done at constant temperature and humidity, performances measurements must be done at 20°C and 50 % humidity. The weight of water in the air must be known (it will strongly influence the performance of your additive). Performance at lower humidity, must also be checked.

A/ surface resistivity: with 2 electrodes, can be operated with smooth and flat materials.

B/ half decay time: electrostatic charge produced with a generator or by friction (tribo electric effect) is induced in the material and immediately after (with an appropriate field meter) we measure the time spend by the material to lose half of its electrostatic charge (for flat and thin materials, you can use a laboratory charge analyser). All measurements are done at 50 % humidity and 20°C.

Surface resistivity RS	1/2 decay time	Antistatic treatment quality (dissipative) (example: anti–dust treatment)
10^{10} ohms	< 1 second	very good
10^{11}	1 second	good
10^{11} to 10^{12}	5 seconds	good (acceptable)
10^{12}	10 seconds	acceptable (to be checked)
10^{12} to 10^{13}	10 to 100 seconds	bad