

BOUSSEY CONTROL EUROPE

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TECHNICAL DATASHEET STATICONTROL AS11VG

Version : 1

Date : 01/01/2019

STATICONTROL AS-11 VG is an internal emulsifier – antistatic additive approved for food packaging (all components from vegetable source – OGM free – Kosher and Halal).

Usual dosering rates are: for PP INJECTION 0,5 to 2 % - plasticized PVC 0,8 % (if clear film).

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

TECHNICAL DATA:

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

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

Use : to mix with dosering or/and mixing machine.

STATICONTROL AS-11 VG produces an immediate antistatic effect from a few minutes to a few hours (depending dosering rate) after extrusion or injection (Corona treatment speeds up migration), this for a lasting of a few months to several years, according dosering rate and without rubbing. Normal rate used is from 0,5 to 2 % maximum for PP injection (high MFI). Some mineral components can absorb the antistatic product and decrease its migration so its efficiency.

The migration of AS-11 VG 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 AS-11 VG is not noticeable). Check the sealability too.

STATICONTROL AS-11 VG has a lubricating effect on the extrusion screw, check the process and limit the dosering rate if necessary (mainly at start-up). A slight purging effect can be get during the first minutes of extrusion. STATICONTROL AS-11 VG is giving slip, antiblock, brightness, antifog effects (more or less important depending dosering rates) AS-11 VG is a very good demolding agent (dosering 0,8 %).



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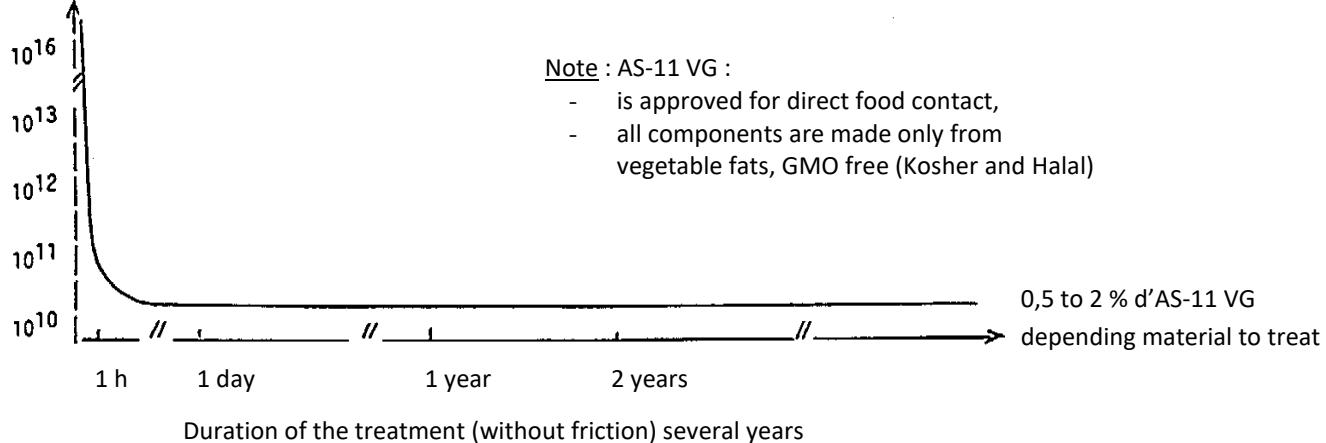
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ohms RS/Ω à 50 % humidité - 20°C ambiant



Dosering rates must be tested before use in production to check their optimum value regarding efficiency parameters (fastness, migration lasting) economic and technical ones, as surface tension, etc. We can operate measurements of dyne level, electrostatic performances on your samples and advise you.

Curves hereover are only given for indication, they vary according to the material used process and end used conditions.

ANTISTATIC TREATMENTS

INTRODUCTION:

Electrostatic charges are mostly generated by friction (triboelectric 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):

STATICONTROL AS 11 VG



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INTERNAL ANTISTATIC PRODUCT, as:

- **AS-15 N** antistatic treatment for **LDPE**
- **AS-50** antistatic treatment for **LDPE, LLDPE, HDPE and PP**
- **AS-11 N** antistatic treatment for **PP, plasticized PVC**

and SURFACE ANTISTATIC, as **AS-90-EIO**.

These additives are approved for food packaging and give efficient antistatic treatment with fast action (a few minutes to a few hours after processing) lasting several years (without rubbing) depending dosering (even at low humidity rate as 20 % at 20°C).

IMPORTANT :

Like all migrating agents, these additives are producing secondary effects:

- sometimes positive : slip effect, antifog, demolding 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, sealability can also be modified.

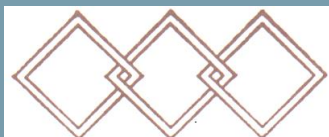
We have produced optimum quality and rules of use for our additives in the limit of knowledge today's technology. We keep in mind, in our advices, your work conditions as compatibility, printing, seability, organoleptic, etc.

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 (triboelectric 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.



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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