avanzare

inventing the future

PERMANENT COLOURLESS ANTISTATIC ESD ADDITIVES

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Antistatic/ESD additives Electrostatic dissipation & discharge protection

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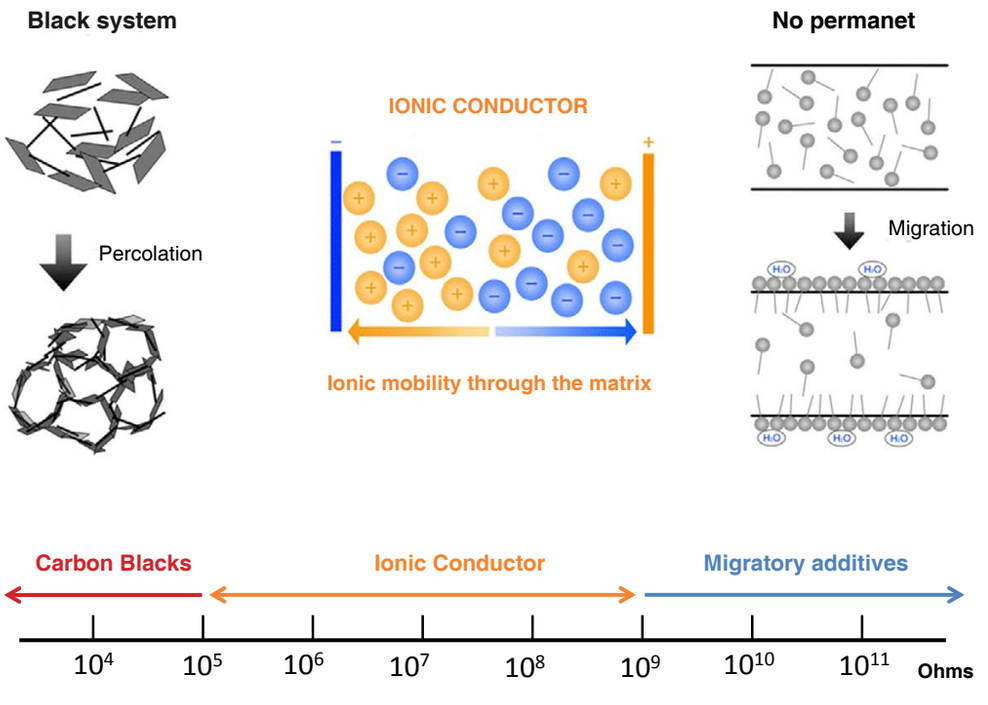
Electrostatic dissipation

Resins and plastic materials are intrinsically insulating materials; nevertheless, materials with conductive and/or antistatic performance features are increasingly demanded both for production and protection purposes. Some of their common applications are; safety footwear, flooring, rolls, caster wheels, conveyor belts, handrails, gloves, etc.

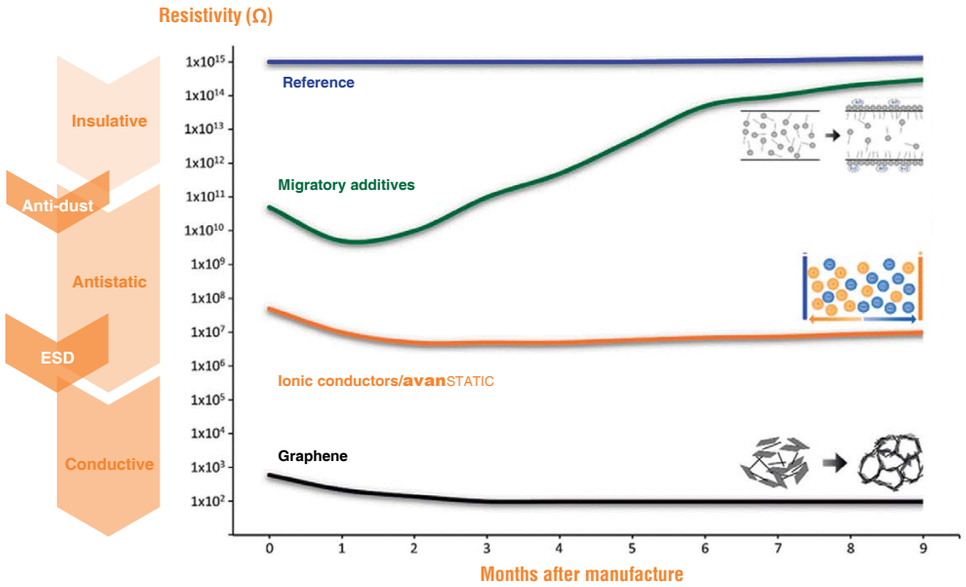
Our antistatic/ESD additives impart certain conductivity in host materials so that they can release static electricity effectively in a controlled way and thus prevent problems caused by static electricity and uncontrolled electrostatic discharges, such as electric shocks, destruction of electronic circuits, sparks, appliance malfunctions, dust adhesion, etc.

Mechanism to generate antistatic

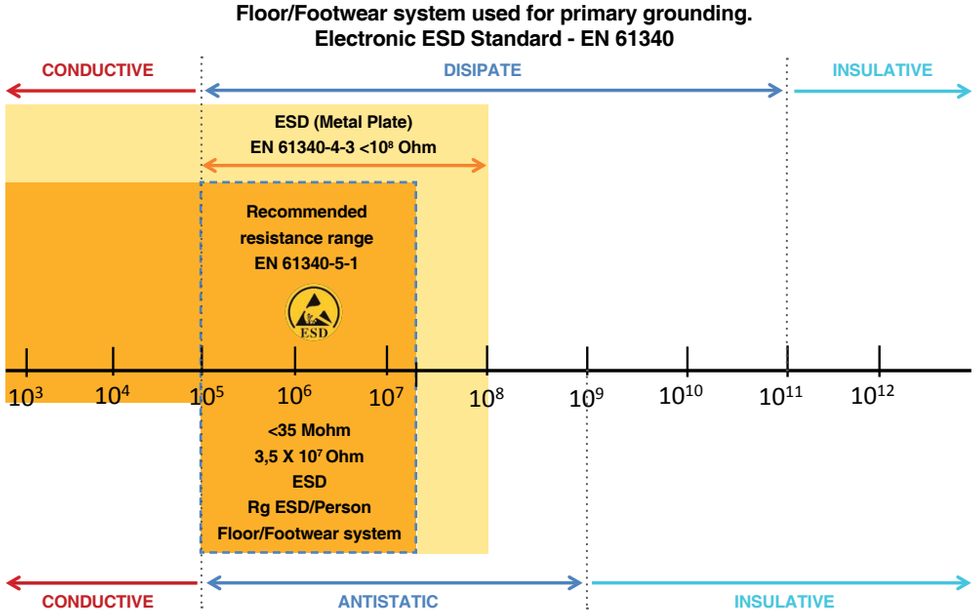


	Avanzare Graphene percolation	Avanzare Ionic Conductor	Migratory Additives
Colourable	NO/PARCIALLY	YES	YES
Permanent	YES	YES	NO
Humidity Dependent	NO	NO	YES
Resistance level Range	$<10^6$ ohms	10^5 to 10^{10} Ohms	10^9-10^{12} Ohms

Evolution of conductivity with the time



Ranges of conductivity



Occupational and safety shoes standard - EN ISO 20344 to 20347

Main characteristics of avanzare´s antistatic additives.

- Static dissipative and ESD levels **permanent performance**
- **Colorless** and colourable
- Low dosage required
- Cost-effective
- Minimal effect to host material properties
- **Non-migratory**
- Solid, liquid, pellet MB forms available depending on the product.
- Food grade in some applications

Product and agents specifically developed to ensure compatibility with the host matrix and according to the requested performance.

For more information and TDS,please contact:
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Antistatic/ESD additives for rubber

Rubber is a very diverse material, with many different applications and formulas, so the additive and the amount needed vary greatly depending on the type of rubber, formula, Polarity of the mixture, etc...

Different grades of antistatic additives for rubber.

	Type of rubber	Format	Dosage phr	Characteristic	Impact price
avanSTATIC Rubber	NBR	Solid	2-6	Only UE	$
avanSTATIC Plast	NBR, SBR, CR, BR, CSM	Liquid	5-15	Plasticizer	$ $ $
avanSTATIC Plast Rub	NBR	Liquid	4-8	Plasticizer	$ $
avanSTATIC NBR 535	NBR	Liquid	4-8	Plasticizer	$
avanSTATIC SBR/EPDM	SBR, EPDM	Solid	7-14		$
avanSTATIC Rubber MB	NBR, SBR, NR,EPDM, etc…	MB in NBR	10-25		$ $

Antistatic/ESD additives for EVA

avanNATUR EVA applications:

The production of EVA plates as well as the micro-expanded granulated EVA are two of the most used EVA applications today. Thus, its use in orthopaedic plants, templates, construction plates, as well as in any injected piece are gaining ground against other competing products due to their low weight, ease of work and properties.

EVA, by itself, has an extremely low electrical conductivity, together with its use in the form of foam, which increases the problem even more. In order to have EVA in the form of foam and at the same time high electrical conductivity, **avanzare**'s experts have developed **avan**NATUR.

avanNATUR, a series of additives developed and commercialized by **avanzare**, offer the best solution to this problem, allowing its use in a wide range of applications that until now were not feasible.

	EVA production	Format	Dosage range phr	Impact price
avanNATUR EVASTAT (S)	Sheet (banbury)	Solid	10-30	$
avanNATUR EVASTAT 850	Bouth	Liquid	10-15	$
avanSTATIC 747	Injection	MB	30-35	$ $

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Antistatic/ESD additive for TPU

During the last years the boom in the use of TPU is causing a multitude of thermoplastics with completely different characteristics to be found under this denomination.

Given this versatility and variety of TPUs in the market, **avanzare** has developed a wide variety of additives in various formats to respond to each of the requests shown by the market.

	TPU	Format	Dosage	Use	Impact price
avanSTATIC TPU (L)	-	Liquid	0.5-4%	Transparent TPU,	$
avanSTATIC TPU MB	Polyester	MB	4-10%	Extrusion, injection	$
avanSTATIC TPU.2 MB	NBR/TPU Polyester	MB	4-10 %	Extrusion, injection	$
avanSTATIC TPU 77LMB	Polyester	MB	5-15 %	Film, extrusion, injection	$ $ $
avanSTATIC TPU-B255	-	Solid	7-14	Extrusion, injection	$
avanNATUR TPU STAT (FC)	TPU (polyester) …	MB	10-25	EU-USA Food grade	$ $ $

Antistatic/ESD additives for PU

Polyurethane is a material widely used in industry in both rigid and foamed applications. The final density obtained as well as the type of polyol play a crucial factor in the antistatic characteristics of the system.

avanzare has developed a variety of products that, depending on the type of application and foam structure, can be used as the main and unique antistatic agent or as synergistic with other products on the market.

For polyester applications, **avanzare** has evaluated its products against the hydrolysis of polyester polyurethane itself, not observing any changes with respect to the untreated product.

	PU	Format	Dosage Range (1)	OH-Value (mg KOH/g)	Max dosage without adjust (1)	Impact price
avanION- 35	Ester/ether	Liquid	0.5-4	1050	2.5	$
avanION- 39	Ester/ether	Liquid	0.5-5	790	3.75	$
avanION-5	Ester/ether	Liquid	1-7	-	5	$
avanION-13	Ester/ether	Liquid	1-7	-	5	$ $
avanION-510	Ester/ether	Liquid	1-7	-	5	$ $ $

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Antistatic/ESD additives for PVC

The variety of existing thermoplastics and the inclusion of each of new grades and materials means that every day it is necessary to develop new additives tailored to the needs of our customers.

We produce these additives in accordance with the criteria set by our clients, increasing their catalogue and performance in all areas.

Other products formulated for specific industrial applications are reflected here.

	Material	Format	Dosage range (1)	Impact price
avanNATUR Nylonstat	PA6	Liquid	3-7	$
avanNATUR Nylonstat -5 MB	PA6	MB	6-15	$ $ $
avanSTATIC PVC A-033	PVC	Solid	3-6	$ $
avanSTATIC PVC A-03	PVC	Solid	3-6	$
avanION 11	Plastisol	Liquid	1-4	$
avanSTATIC PVC B-255	PVC	Solid	3-8	$ $
avanSTATIC 1050	PVC or PVC/NBR	Liquid	1-5	$

Antistatic additives for polyolefins

avanDISS is a line of polymeric masterbatches based on polyester resins, capable of producing permanent and colourable antistatic systems.

The generation of permanent antistatic systems is produced due the generation of percolation networks of third polymers inside the polymer to be treated. **avanzare** has designed its product line **avan**DISS, MB polymer products specially designed to generate three-dimensional structures in base polymers.

	Additive for	Format	Dosage range (%)	Impact price
avanDISS-232	HIPS, PS	MB	10-22	$
avanDISS-378	General use, PP, PE, ABS, POM, PET, etc.	MB	10-20	$ $ $
avanDISS-450	PE-PP (food contact)	MB	10-22	$ $

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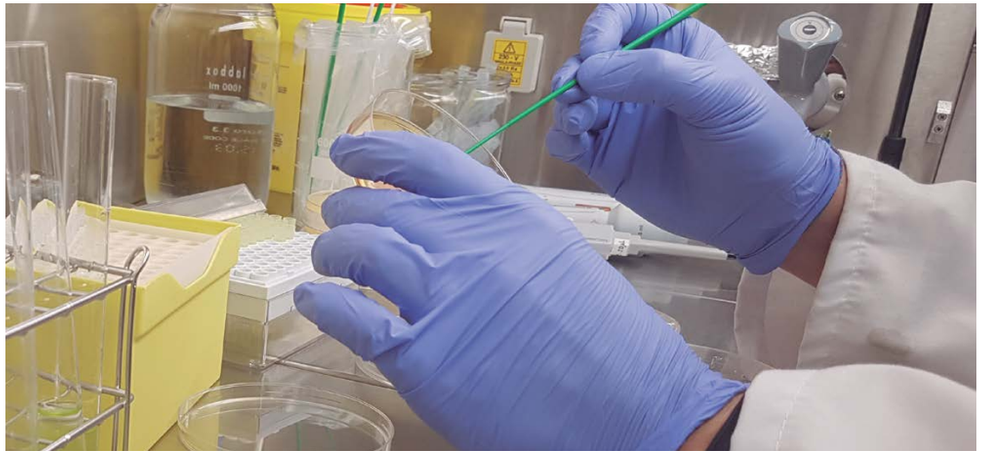
avanSTATIC aditives for Latex

The use of latex gloves is no longer an exclusive matter of hospitals and health centres: Thus, the emergence of electronics and its use in clean rooms has modified the final characteristics required by these customers, increasingly promoting the use of anti-static gloves for Do not damage these electronic circuits.

avanzare has developed a series of additives that, depending on the use and the final need, can provide antistatic behaviour in the glove. The products developed will be differentiated according to their final application single-use or multi-use glove, Type of rubber, NBR, SBR, etc.



	Type of rubber	Format	Dosage phr	Characte-ristic	Uses	Impact price
avanSTATIC 75 B	SBR, NR	Solid	2-6	Full glove	Multipur-pose	$
avanSTATIC NBR 535	NBR,	Liquid	2-6	Full glove	Multipur-pose	$
avanSTATIC Glove 62	NBR	Liquid	1-4	Superficial	Disposable	$ $
avanSTATIC Glove 300	NBR	Liquid	1-4	Superficial	Disposable	$ $

Antistatic additives for coating and paints

	Colourable	Format	Use	Dosage	Area	Type of resin	Impact price
avanSTATIC Coat 323	YES	Solid	Water-base	2-5	Antidust Antistatic	General	$
avanION 100	YES	Liquid	Water-base	1-5	Antidust Antistatic	General use	$
avanNATUR 133	YES	Liquid	Solvent/ water base	0.5-4	Antidust Antistatic	General use	$ $ $
avanNATUR Antidust	YES	Solid	Solvent/ water base	2-5	Antidust	Polyester or acrylic	$
avanCON-DUCTIVE 212	No (black)	Solid	Water-base	2-6	ATEX	General	$
avanCON-DUCTIVE 334	No (black)	Solid	Solvent base	2-6	ATEX	General	$

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avanzare
graphene

Graphene materials
Conductive and heat dissipative systems

avanzare is a well-known graphene materials and graphene/ graphite nanoplatelets producer.

These laminar materials exhibit an incomparably lower percolation threshold to other materials, and therefore lower dosages are required to achieve conductivity in the host polymer matrix.

Thanks to their low-dosage requirements they have a minimal effect on the host resin properties.

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ATEX tank produced with unsaturated Polyester resin and graphene.

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