


Our products and solutions for UPR & EVER Resins Applications (SMC/BMC, Filament Winding, Quartz Stone, Gel coat, etc.)

Avanzare Innovación Tecnológica

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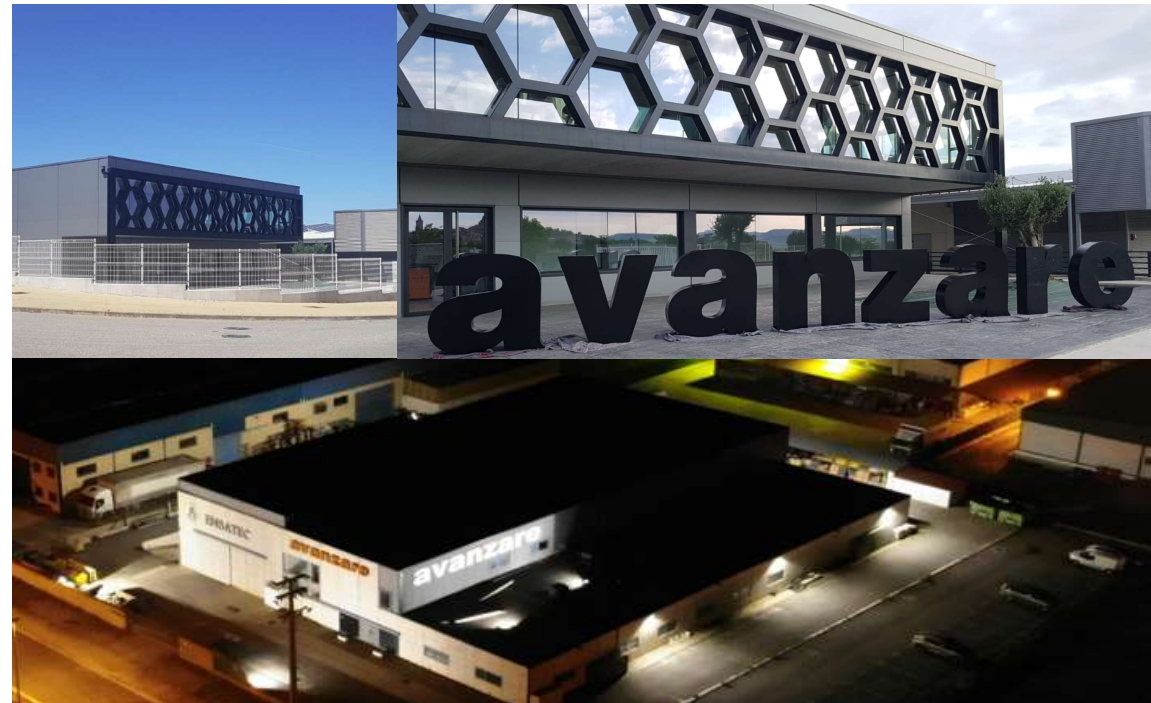
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 www.avanzarematerials.com

About us **avanzare**

- We develop and produce differential additives for plastic, rubber, resins, etc:
 - ✓ 10.000 m² production plant.
 - ✓ 3.500 m² R&D (fully equipped).
 - ✓ 12 Chemistry PhD. (37 R&D – graduates in biology, biochemistry, chemistry, etc.)
 - ✓ Mainly focused on differential additives
 - ✓ Chemical and additives specialist
 - ✓ Taylor made solution
 - ✓ 100 % European products.



avanzare Presence in the world





Additives for resins and plastic

- ✓ Antistatic (Permanent and colorless)
- ✓ Conductive systems based on Graphene
- ✓ Thermal conductor
- ✓ Metallic tracer (colorless)
- ✓ Density amplifier
- ✓ Chemical tracer (anti-counterfeiting)
- ✓ Biocide (antibacterial/fungi algae)
- ✓ and more

Our Products

Avanzare Innovación Tecnológica



Our products are specifically made for resins, like epoxy vinyl ester resins and un-saturated polyester resins used in:

Engineered Stone, SMC/BMC, Cast, Gel Coat, Filament Winding



**Graphene/
Conductive solution**



**Color less Antistatic/ESD
additives**



Anti-bacterial additives



**Other: Flame retardant/
metallic tracer, etc.**

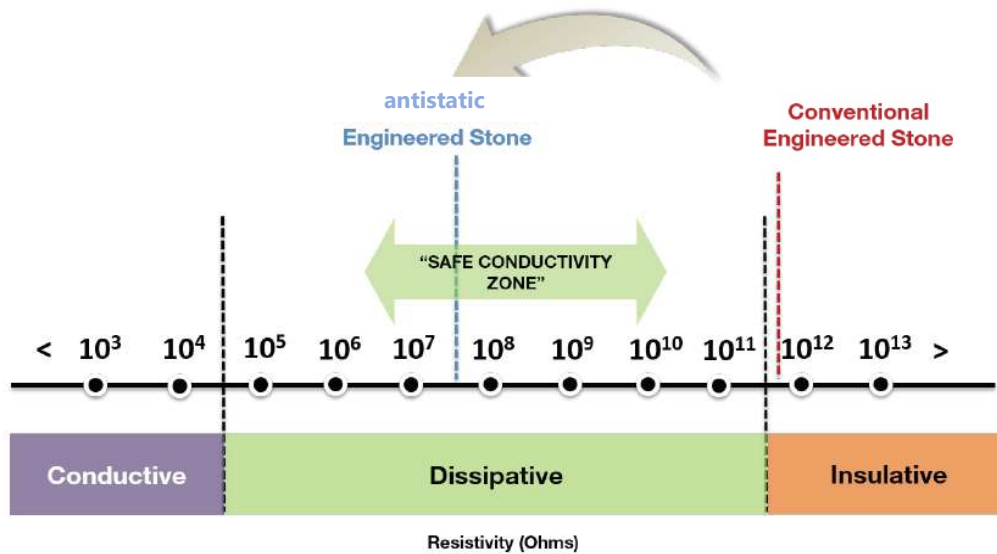


**Mechanical properties,
impact, flexural strength**

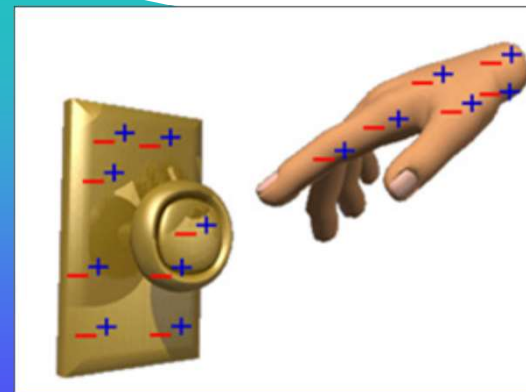
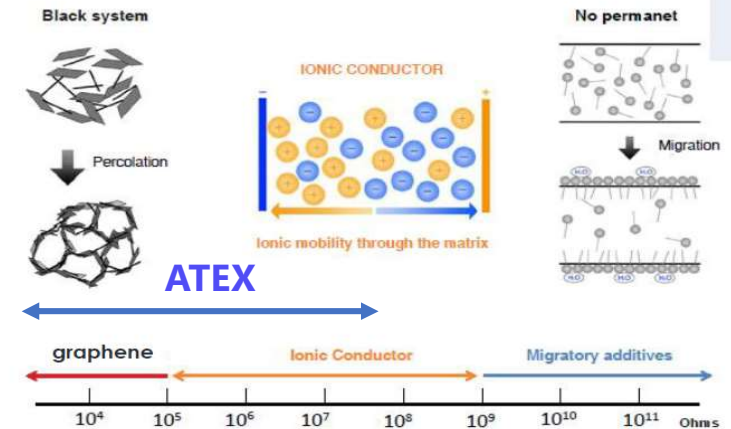
Antistatic, ATEX and Conductive



avanzare
inventing the future



Mechanism to generate antistatic



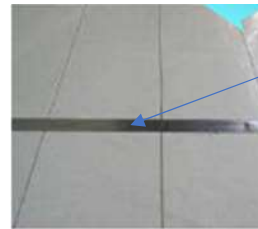


Antistatic agents

AvanSTATIC QS-305: antistatic additive for synthetic quartz and marble flooring which allows to eliminate the electrostatic discharge

Characteristic and uses

- Permanent and colorless
- Valid for any type of design
- No metallic joints required
- No discharge and sparks
- Valid for technical flooring





Antistatic agents

avanSTATIC UPR: antistatic additive for general use in EVER and UPR.

Characteristic and uses

- Permanent and colorless
- Valid for any type of design
- No discharge and sparks
- **Electrostatic coating or painting possibility** electrostatic powder coating



Other applications

- SMC/ BMC samples
- Gel Coat application.
- Antistatic pipes colorless





Mechanical properties

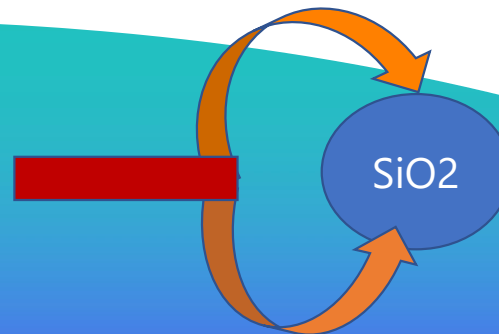
avanSILANE, is the new grade of multidentate silanes.

- Improves by 50% the flexural strength in materials with standard MEMO silane.
- Valid for UPR and EVER mixtures with SiO₂, glass fiber
- Increase the impact resistance by 30 %

Uses

- ✓ **Quartz Marble**
- ✓ **Filament Winding pipes**
- ✓ **Wind turbines (blades)**
- ✓ **Cast**
- ✓ **SMC/BMC**

multiple links to the SiO₂.



Case Example: Quartz Surface

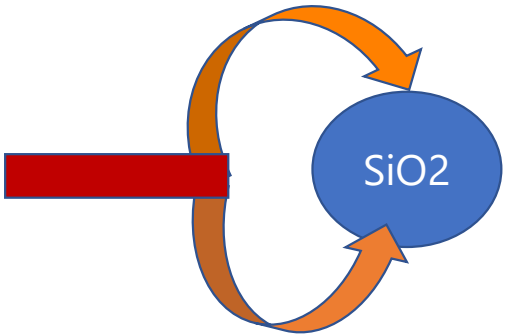
Goal: Development of antistatic Quartz Surface used in flooring

Solutions: avanSILANE 12 + avanSTATIC QS-305

Advantages:

- Addition of 10% of avanSTATIC QS-305 provides dissipative properties.
- Addition of 14% of avanSTATIC QS-305 provides antistatic properties.
- Addition of 2% of avanSILANE 12 increases mechanical properties by 150% compared to regular quartz surface,

multiple links to the SiO₂.



	Vol. Resistivity ohms/ sq.	Bending Strength (Mpa)	avanSILANE 12 (%)	avanSTATIC QS-305 (%)
Reference	>1 ¹²	35	0	0
1	>1 ¹²	75,01	2	0
2	2 ⁹	39,71	2	10
3	4 ⁸	42,94	2	14
4	4 ⁸	31,29	2	14
5	>1 ¹²	80,63	4	0
6	2 ⁹	68,68	4	10
7	3 ⁸	59,6	4	14



Graphene/ Conductive solution

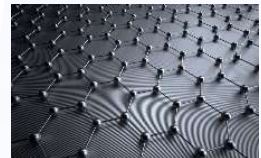
AVANGRP High Solid: graphene dispersion ready to be added in UPR and EVER resins



Characteristic and uses



- Permanent conductive solution
- Black
- ATEX atmosphere.
- Valid for Filament Winding and Cast
- Low increase of the viscosity



Metallic tracer (colorless)

WHY? Allows to detect plastic, rubber and resin parts in processing lines (e.g. food).

APPROACH TO THE COSTUMER:

- ✓ Light Color → Colorable
- ✓ Powder or MB ready to use
- ✓ Electronic and magnetically techniques

APPLICATIONS:

- ✓ Conveyor Belts
- ✓ Composite Tools
- ✓ Compounding





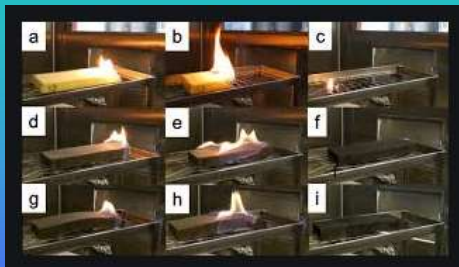
Flame retardant

avanFIRE (group), is the new grade of flame retardants halogen free for UPR and EVER

- For passing different normative
- **avanFIRE GR8**, synergetic effect with standard products
- Viscosity tailored final products
- Good mechanical properties in association with **avanSILAN**

Uses

- ✓ Quartz Marble
- ✓ Cast
- ✓ SMC/BMC



avanFIRE GR8

- ❖ Increase the carbonaceous layer (CHAR)
- ❖ reducing dripping
- ❖ distributing the energy produced by the flame (heat)

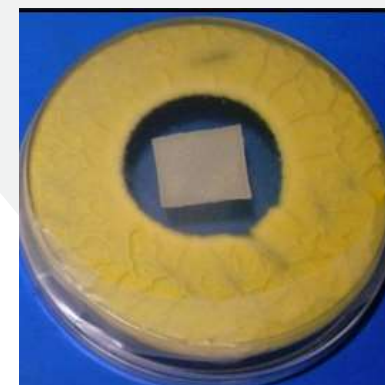


Biocide



Avanzare Innovación Tecnológica

avanZnO BAC is a powerful biocide agent, specially formulated to be introduced in plastics, rubbers and resins matrices.



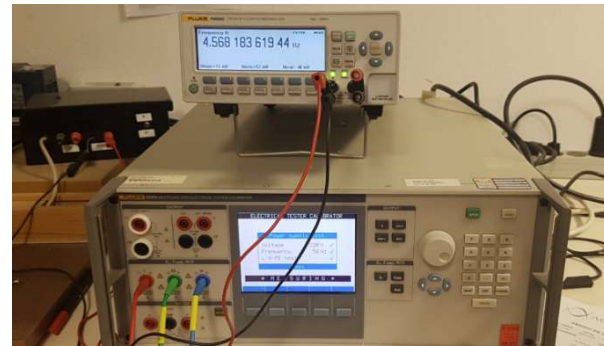
According to the European directive nº 1048/2005 (13/June/2005) and directive (CE) nº 528/2012 regulating the applications of biocides in the industry

Bacteria	Fungi	Algae
Escherichia coli	Aspergillus niger	Cladosporium
Staphylococcus aureus	Aureobasidium pullulans	cladosporioides
Streptococcus faecalis	Chaetomium globosum	Sclerophoma pityophila
Klebsiella pneumoniae	Alternaria alternata	Trichoderma viride
Pseudomonas aeruginosa	Penicillium brevicaulis	Chlorella pyrenoidosa
Salmonella typhimurium	Cladosporium cladosporioides	
	Sclerophoma pityophila	
	Trichoderma viride	

➤ **99,9 % elimination**
➤ Ensayos ISO 22196

We have the capabilities to customize solutions according to customer needs and requirements

- **Certification lab**
- **Pilot plant**
- **Customize solutions.**



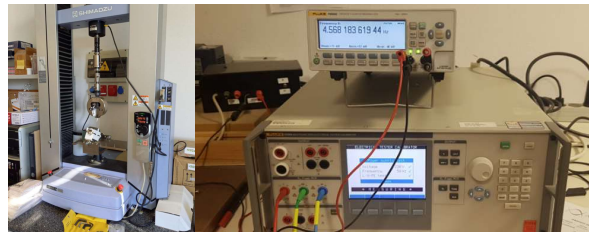
□ Technical capabilities

- ✓ 3.500 m² fully equipped laboratory
- ✓ 12 Chemistry PhDs.
- ✓ European accredited lab for customer trials
- ✓ Customized solutions (adjust recipes)



□ Equipment and Facilities

- ✓ Polymer pilot plant, Extrusion machines (singles and twin screw), Injection samples, R&D filament extrusion for 3-D
- ✓ R&D polymer lab (extrusion machine, injection, MFI analysis, FTIR etc)
- ✓ Aging test, QUV, Xenon, UV-absorption, etc
- ✓ Chemical Characterization: EDAX, RAMAN, SEM, X-Ray, EEA, etc
- ✓ Mechanical Characterization: Impact, mechanical testing, etc
- ✓ Fire lab: radiant panel, Single burning item, Non combustibility test, etc
- ✓ ESD and Conductive area: Conductivity/resistance characterization instruments. (1 Ohms- 1 ¹³ Ohms)



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Materials



Metrology and Calibration



Fire



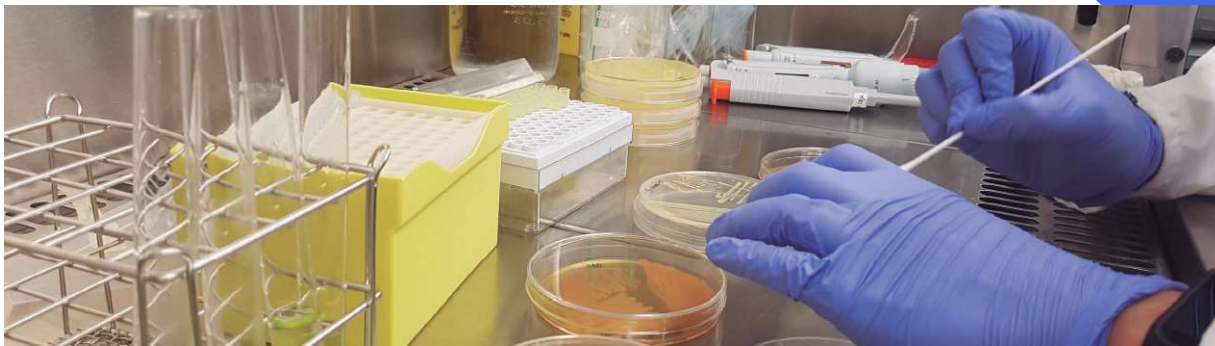
Enclosures



**Testing and
Certification LAB.**



avanzare's capabilities microbiology



Technical capabilities (microbiology lab)

- 200 m² division microbiology)
- 2 PhD division microbiology
- European accredited lab for testing customer trials
- Customized solution (recipes adjust)




avanzare has a fully equipped laboratory of microbiology that allows us to analyze and test each of our products, increasing the quality criteria and comparing their efficiency and effectiveness against a large number of different microorganisms and tests.


- Standard Zone of Inhibition Test (Kirby Bauer Qualitative Test for growth inhibition)
- Quantitative method for the determination of minimum inhibitory concentration of microbial growth
- Test for antimicrobial activity according Japanese Industrial Standard (JIS Z 2801)
- Measurement of antibacterial activity on plastics (ISO 22196:2011)
- Isolation and determination of microorganisms causing contamination
- Other biotechnological applications (on demand)




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