



**PLASTIC ADDITIVES
TAILOR MADE FORMULATIONS**



GREENCHEMICALS POLICY

OUR GOAL

is to develop and promote improved Flame Retardant solutions!
Environmental friendly: Halogen free, with low dosage, dust free, migration free.

OUR FLAME RETARDANTS PRODUCTS:

Masterbatches, powder blends, compacted blends, cold extruded pellets, dropped beads.



MASTERBATCHES



POWDER BLENDS



COMPACTED BLENDS



COLD EXTRUDED PELLETS



LIQUID DISPERSIONS

MAIN ACTIVITIES:

- XPS, EPS, X-EPS
- XPE, XPU
- Engineering Thermoplastics
- Reactive flame retardants

OTHER PRODUCTS:

- Antioxidants
- Uv
- Processing aids
- Colors.



GREENCHEMICALS is very active in substitution of SVHC molecules and provides optimized solutions considering:

- Fire Performance and thermal stability
- Superior Environmental and health profile (more sustainable)
- Compatibility with polymeric matrix
- Cost/Performance

CERTIFICATIONS



GREENCHEMICALS SPA complies with **REACH, CLP, SVHC, Food Contact, RoHS** regulations and is determined to pursue the continuous improvement in all aspects of its work.

QUALITY MANAGEMENT SYSTEM

Greenchemicals decided to adopt a Quality Management System (QMS) of **ISO 9001** is to improve the ability to integrate and coordinate all activities associated with the quality.



SOCIAL ACCOUNTABILITY

Greenchemicals SpA, aware of its social responsibility has decided to commit to the ethical and social standards of the international norm for **Social Accountability SA 8000®**.



ENVIRONMENTAL MANAGEMENT SYSTEM

ISO 14001:2015 specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance. ISO 14001:2015 is intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability.

MEMBERSHIP



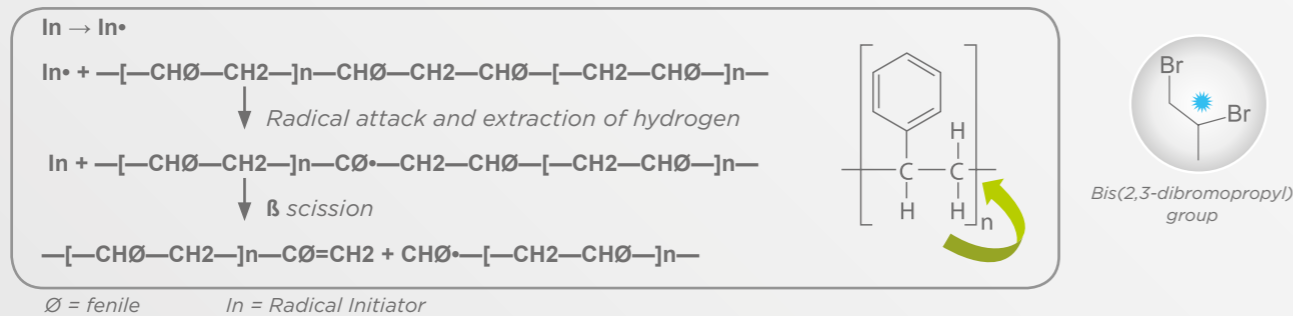


FLAME RETARDANTS IN POLYSTYRENE

FLAME RETARDANT MECHANISM IN POLYSTYRENE

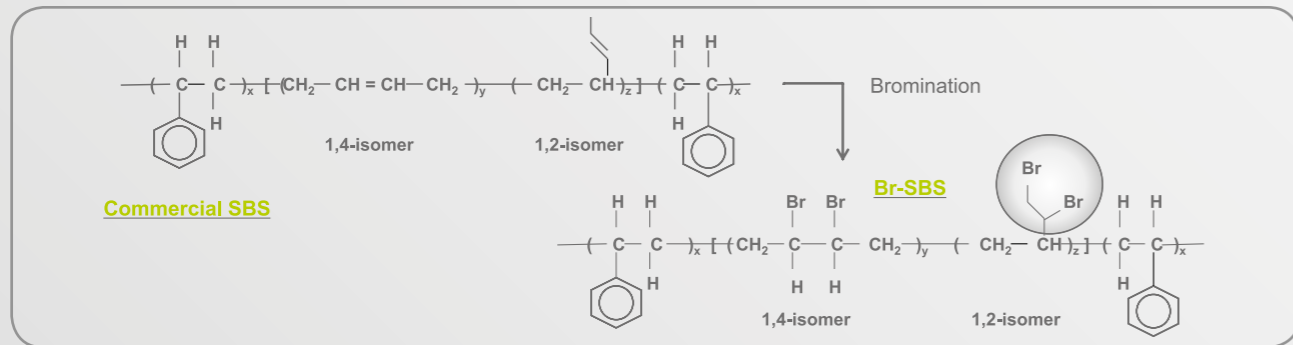
Organic Bromine compounds are very good initiators at temperatures over 280-320°C. Most effective ones are those with the bromine bonded to a secondary carbon. The bis(2,3-dibromopropyl) group is the radical initiator for this system.

Chain-scission Mechanism in polystyrene degradation:



POLYMERIC FLAME RETARDANTS IN POLYSTYRENE: HBCD FREE SOLUTIONS

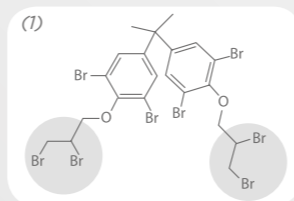
- Brominated SBS;
- Higher 1,2 isomer content on the butadiene portion means higher activity
- Total bromine level is about 66 wt%



MONOMERIC FLAME RETARDANTS IN POLYSTYRENE: HBCD FREE SOLUTIONS

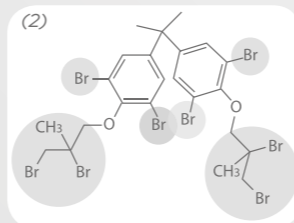
Tetrabromodisphenol A bis (2,3-dibromo-propyl ether), BDDP 68 (1)

- BDDP 68 is a brominated flame retardant with 68% Br content.
- BDDP 68 is highly thermally stable and highly compatible with PS.
- It shows 2 flame retardant active groups
- The bis(2,3-dibromopropyl) group is the radical initiator for this system.
- RECYCLING is possible



Tetrabromodisphenol A bis (2,3-dibromo methyl propyl ether), BDMP 66 (2)

- BDMP 66 is a brominated flame retardant with 66% Br content.
- BDMP 66 is very active and compatible with PS matrix
- It works with synergist.
- It Shows 4 flame retardant active groups
- Aromatic Bromine shows little action.
- The bis(2,3-dibromopropyl) group is the radical initiator for this system
- RECYCLING is possible



HBCD FREE FORMULATIONS

HBCD-free FR must be thermal stabilized

Organic or Inorganic heat stabilizers

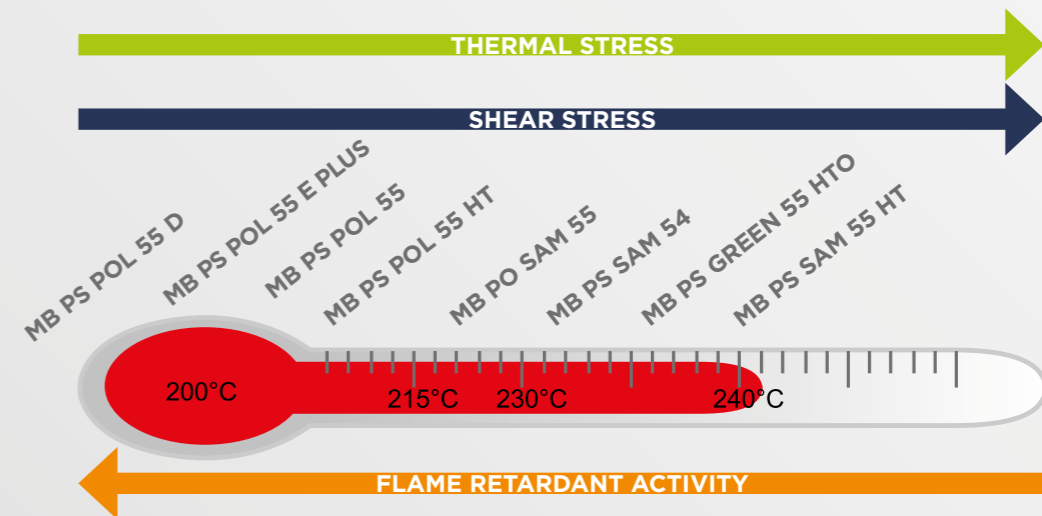
HBCD-free FR can be synergized

Dicumene S-stabilizers

HBCD-free FR must be stabilized against aggressive agents and stressfull working conditions

Antioxidants Processing aids

EXTRUSION THERMOMETER

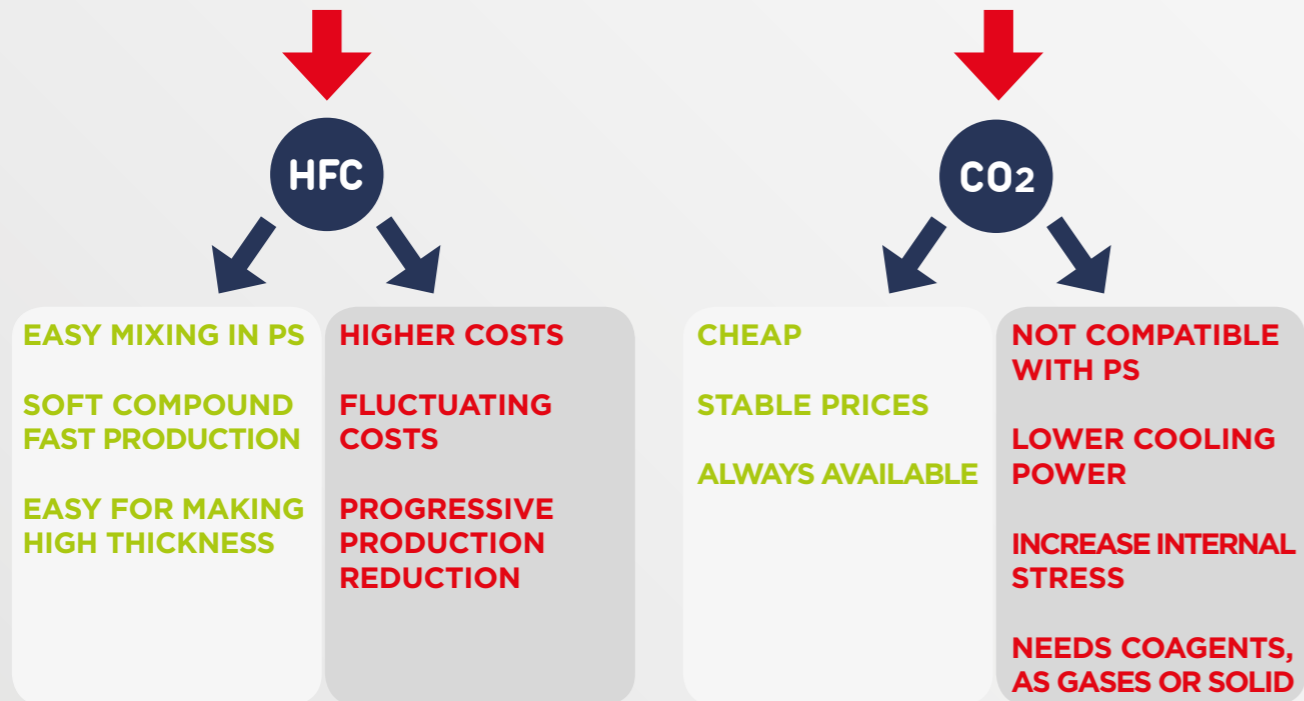


ADDITIVES PHYSICAL FORMS

	POWDER	- Cost - Purity	-Presence of dust -Dispersion -Dosage
	COMPACTED	- Cost - Purity	-Presence of dust -Dispersion -Dosage
	MASTERBATCH	-Dispersion -Dosage -No Dust -Synergisms	-Cost -Sometimes presence of processing aids
	LIQUID	-Dispersion -Dosage -No Dust -Synergisms	-Not always possible -Sometimes presence of liquid processing aids

BLOWING AGENT

HFC TECHNOLOGY → PHASE OUT



PROCESSING AID

NECESSARY WHEN CO2 USED

They create a better environment for CO2 to stay

THEY MAKE A SOFTER COMPOUND

They allow to produce at higher speed

THEY MAKE EASIER WORKING WITH Polimeric-FR

THEY ALLOW TO HAVE BETTER SKIN

NUCLEATING MASTERBATCH BASED ON TALC

Talc particle is like a small sponge, which absorb blowing agent under extrusion pressure. At atmospheric pressure blowing agents expand and growth on talc particles.

The more finer and well dispersed talc is, the lower density is got.

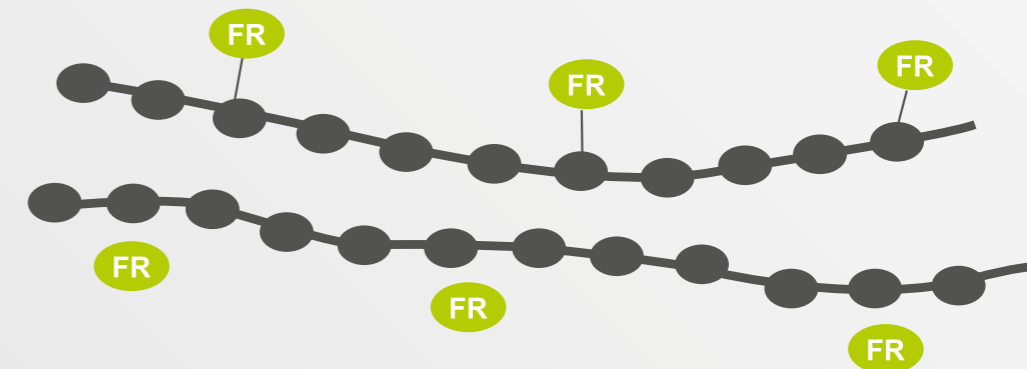
Spherical talc is better than laminar talc for this purpose.

Adding some PE wax in the masterbatch helps for increasing dispersion.

REACTIVE FLAME RETARDANTS

NEW TECHNOLOGY

A Flame Retardant is considered reactive, when had been linked to the polymer through a covalent bond, or copolymerized.



Flame Retardant is linked to the polymer and dispersion is optimized;

Flame Retardant activity is double than a mixed solution;

There are no migration effect. Fire performances and mechanical properties are guaranteed for long time;

Thermal resistance increased, compared to mixing, because of additional strong bonds to the polymer;

It solves dosing problems of P based molecules;

It solves compatibility problems, between polymer and PFR

PROJECTS:

XPU → Reactive PET Polyol

PA → Polymer with FR copolymerized

PET → Reactive PET Polyol

XPS/EPS → Link reaction on modified PS





PRODUCTS FOR XPS/EPS



PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
FLAME RETARDANTS				
GC BDMP 66 Tetrabromobisphenol A bis(2,3 dibromo-2-methylpropyl ether) CAS n. 97416-84-7 PHYSICAL FORM: PW		EPS, XPS, good flame retardancy efficiency.	110°C	1% @ 263°C 5% @ 280°C 10% @ 286°C
GC BDDP 68 Tetrabromobisphenol A bis(2,3 dibromopropyl ether) CAS n. 42757-55-1 PHYSICAL FORM: GR, PW		HIPS, ABS, PP. Good thermal stability, high efficiency.	113-117°C	1% @ 299°C 5% @ 312°C 10% @ 321°C
GC D3BO 65 Tris (2,3 dibromopropyl)isocyanurate CAS n. 52434-90-9 PHYSICAL FORM: PW		PP, HIPS, ABS. Good thermal stability and efficiency.	105-115°C	1% @ 110°C 5% @ 172°C 10% @ 208°C
ANTIOXIDANTS				
GC AOX PS Mixture of antioxidants PHYSICAL FORM: GR, PW		Mixture of Antioxidants studied for FR XPS applications.		
BLOWING AGENTS				
GC HFC 152A/DME Difluoroethane / dimethylether CAS n. 75-37-6 & 115-10-6 PHYSICAL FORM: LIQUID		Blowing agent for XPS.		
GC HFC 152/A Difluoroethane CAS n. 75-37-6 PHYSICAL FORM: LIQUID		Blowing agent for XPS, XPU.		

PRODUCTS FOR XPS/EPS

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
PROCESS AIDS & STABILIZERS				
GC HT4 Hydrotalcite CAS n. 11097-59-9		Acid scavenger used as heat stabilizer for XPS production.		
SYNERGISTS				
GC DYCUMIL PEROXIDE Dicumyl Peroxide CAS n. 80-43-3		Synergist for Flame Retardant EPS applications. Polyolefins / elastomers (tubes, wires, tires, rubber seals).	>39°C	
GC DICUMENE 90 Dicumene CAS n. 1889-67-4 PHYSICAL FORM: PW		Polyolefins - Engineering thermoplastics. Synergist for Flame Retardant XPS applications.	100-110°C	

Please feel free to contact us for any other substance not mentioned in this list.
We supply material in powder, granular, masterbatch physical form and liquid dispersions.

PRODUCTS FOR XPS/EPS

PRODUCT NAME	APPLICATION	DESCRIPTION
FLAME RETARDANT MASTERBATCHES		
MB PO SAM 55 series PHYSICAL FORM: MB	HBCD free solution for XPS, very thermal stable, low price.	Masterbatch based on monomeric solution on Polyolefine carrier; thermal stable, very good skin properties on final product, low price.
MB PS SAM 54 series PHYSICAL FORM: MB	HBCD free solution for XPS, very thermal stable, low price.	Masterbatch based on monomeric solution on Polystyrene carrier; thermal stable, very good skin properties on final product, low price.
MB PS SAM 45 PHYSICAL FORM: MB	HBCD free solution for XPS, very thermal stable, low price.	Masterbatch based on monomeric solution on Polystyrene carrier; thermal stable, very good skin properties on final product, low price and no talc.
MB PS POL 55 series PHYSICAL FORM: MB	Polymeric HBCD free solution for XPS.	Polymeric FR masterbatch on PS carrier with heat stabilization and synergist.
MB PS POL 55 E series PHYSICAL FORM: MB	Polymeric HBCD free solution for XPS.	Polymeric FR masterbatch on PS carrier with heat stabilization and synergist, no talc.
MB PS POL 55 D PHYSICAL FORM: MB	Polymeric HBCD free solution for XPS, highest efficiency.	Very active Polymeric FR masterbatch on PS carrier with heat stabilization and synergist.
MB PS POL 55 R series PHYSICAL FORM: MB	Polymeric HBCD free solution for XPS, cost effective.	Polymeric FR masterbatch on PS carrier with heat stabilization and synergist, very good skin properties on final product.
MB PS GREEN 55 series PHYSICAL FORM: MB	Polymeric HBCD free solution for XPS, cost effective.	Thermal stable Polymeric FR masterbatch on PS carrier, synergized.
MB PS SHARP 45 series PHYSICAL FORM: MB	HBCD free solution for XPS, thermal stable, cost effective.	Very active Monomeric FR masterbatch based on PS carrier stabilized and synergized.
MB PS D HF 91 PHYSICAL FORM: MB	 HALOGEN FREE solution for XPS.	Masterbatch based on halogen free solution, synergized and thermal stabilized.
GC D HF 91 PHYSICAL FORM: MB	 HALOGEN FREE solution for EPS.	Halogen free flame retardant blend for EPS.

PRODUCTS FOR XPS/EPS

PRODUCT NAME	APPLICATION	DESCRIPTION
COLOR MASTERBATCHES		
STARCOLOR PS series PHYSICAL FORM: MB	Color masterbatch for XPS.	Color masterbatch for XPS, filler free formulation.
TALC MASTERBATCHES		
STARCELL PS 60 PHYSICAL FORM: MB	Talc masterbatch for XPS, also pigmented.	Nucleating talc masterbatch, based on PS carrier.
STARCELL PSV 60 PHYSICAL FORM: MB	Talc masterbatch for XPS, also pigmented.	Nucleating talc masterbatch, based on barium stearate and PS carrier.
STARCELL PS 60 U PHYSICAL FORM: MB	Talc masterbatch for XPS, also pigmented.	Nucleating masterbatch, based on spherical talc and PS carrier, cost effective.
STARCELL PSR 60 U PHYSICAL FORM: MB	Talc masterbatch for XPS, also pigmented.	Nucleating masterbatch, based on spherical talc and PS carrier.
PROCESS AIDS		
STARAID EV G 30 PHYSICAL FORM: MB	Processing aid MB for XPS based on fat organic acid ester on EVA.	Processing aid masterbatch, based on GMS and carried on EVA.
STARAID PE OL 20 PHYSICAL FORM: MB	Processing aid MB for XPS based on fat organic acid amide on PE.	Processing aid masterbatch, based on OLEAMIDE or EUROCAMMIDE and carried on EVA.
STARAID SAB 40 PHYSICAL FORM: MB	Antistatic masterbatch for Polystyrene.	Masterbatch based on sulfonate antistatic.

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We supply material in powder, granular, masterbatch physical form and liquid dispersions.



PRODUCTS FOR XPU

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
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HALOGENATED FLAME RETARDANTS

GC TETRA PHT Tetrabromophthalic Anhydride CAS n. 632-79-1 PHYSICAL FORM: GR, PW		Polyurethanes-Engineering thermoplastics. Rigid PU, Epoxy, PS, PHE, high fr efficiency.	280°C	1% @ 202 °C 5% @ 228°C 10% @ 240°C
GC TETRA PHT Diol LV Diol of tetrabromophthalic Anhydride CAS n. 20566-35-2 PHYSICAL FORM: LIQ		Rigid Polyurethane Foam, Urethane Elastomers and Coatings with high bromine content (Viscosity 25°C, CP 15,000-30,000).	15000 30000 cps	
GC TETRA PHT Diol MV Diol of tetrabromophthalic Anhydride CAS n. 20566-35-2 PHYSICAL FORM: LIQ		Rigid Polyurethane Foam, Urethane Elastomers and Coatings with high bromine content (Viscosity 25°C, CP 30,000-70,000).	30000 70000 cps	
GC TETRA PHT Diol HV Diol of tetrabromophthalic Anhydride CAS n. 20566-35-2 PHYSICAL FORM: LIQ		Rigid Polyurethane Foam, Urethane Elastomers and Coatings with high bromine content (Viscosity 25°C, CP 70000-120000).	70000 120000 cps	
GC DNPG 60 Dibromoneopentyl glycol CAS n. 3296-90-0 PHYSICAL FORM: PW		Polyurethanes. Rigid PU foam.	109,5°C	1% @ 196°C 5% @ 225°C 10% @ 245°C
GC TCPP Tris(2-chloroptoyl)phosphate PHYSICAL FORM: LIQ		Polyurethanes. Cost efficient Flame Retardant used in PU foam, PVC, EVA and phenolics and epoxy Resin.	60-70 mPa·s	



HALOGEN FREE FLAME RETARDANTS

GC MELAMMINA Melamine CAS n. 108-78-1 PHYSICAL FORM: GR, PW		Polyolefins - Polyurethanes. PP, PE, PU, Textile, Coating.	354°C	
GC MP Melamine Phosphate CAS n. 41583-09-9 PHYSICAL FORM: GR, PW		Polyolefins- Polyurethanes - Engineering thermoplastics. PA, Epoxy, PU, PP, Polyesters.	Decomposition T. > 300°C	1% @ 215°C 2% @ 235°C 5% @ 260°C
GC APP II Ammonium Polyphosphate CAS n. 68333-79-9 PHYSICAL FORM: GR, PW		Polyolefins- Polyurethanes - Engineering thermoplastics. PA, PP, PU, Polyesters.	Decomposition T. > 275°C	

PRODUCTS FOR XPU

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
GC MPF Melamine Pyrophosphate CAS n. 15541-60-3 PHYSICAL FORM: GR, PW		Polyolefins- Polyurethanes - Engineering thermoplastics. PA, Epoxy Resins, PU, Polyesters, PP.	Decomposition T. > 300°C	0,5% @ 300°C 5% @ 350°C
GC PENTAERITRIT Pentaerythritol CAS n. 115-77-5 PHYSICAL FORM: PW		Polyolefins - Polyurethanes. PP, PE, PU, Textile, Coating.	> 250°C	
GC FRP 30 Cyclic Phosphonate CAS n. 41203-81-0 - CAS n. 42595-45-9 PHYSICAL FORM: LIQ		Polyurethanes - Engineering thermoplastics. Polyesters, Coating, Textile.		
GC TPP Triphenyl Phosphate CAS n. 115-86-6 PHYSICAL FORM: FLAKES, PW		Engineering thermoplastics. PC/ABS, PPO/HIPS, PVC, RUBBER, Epoxy Resin, Phenolic Resin, Acetalic Resin.	47,5-49,5°C	1% @ 198°C 5% @ 231°C 10% @ 247°C
GC BDP Bisphenol A bis(diphenylphosphate) CAS n. 5945-33-5 PHYSICAL FORM: LIQ		Polyurethanes - Engineering thermoplastics. PC, PC/ABS, ABS, SAN, Polyesters, PPO, PU.	120 cps a 80°C	1% @ 255°C 5% @ 372°C 10% @ 398°C
GC RDP Tetraphenyl Resorcinol Diphosphate CAS n. 57583-54-7 PHYSICAL FORM: LIQ		Polyurethanes - Engineering thermoplastics. PC/ABS, PPO/HIPS, TPU, PU.	500-800 cps a 80°C	2% @ 290°C 5% @ 325°C 10% @ 360°C
GC TEP Triethyl Phosphate CAS n. 78-40-0 PHYSICAL FORM: LIQ		Polyurethanes. PU.	5 mPa·s 5 mPa·s	
GC TCP Tricresyl Phosphate CAS n. 1330-78-5 PHYSICAL FORM: LIQ		PU - Polyolefins. PE, PVC, Rubber, Wire&cables.	55-70 mPa·s	
GC FOS 65 Triarylphosphate Isopropylated CAS n. 68937-41-7 PHYSICAL FORM: LIQ		Polyurethanes - Engineering thermoplastics. PVC, Phenolic, PU, Epoxy resins.	64-76 cps	1% @ 197°C 5% @ 217°C 10% @ 235°C
GC MC series Melamine Cyanurate CAS n. 37640-57-6		PU - Engineering thermoplastics. PA, Polyesters.	Decomposition T. > 350°C	1% @ 305°C 2% @ 320°C 5% @ 340°C


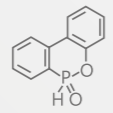

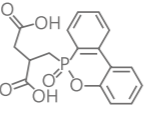
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PRODUCTS FOR XPU

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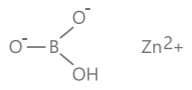

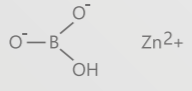
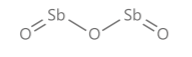
HALOGEN FREE REACTIVE FLAME RETARDANTS

GC DOPO 9,10-Dihydro-9-oxa-10-phosphaphenanthrene 10-oxide CAS n. 35948-25-5 PHYSICAL FORM: PW 		Engineering thermoplastics. Epoxy, PU, PA, Polyesters.	117-120°C	
GC RE DDP 2-(6-Oxido-6H-dibenz,c-e, 1,2 oxaphosphorin-6-y) methyl - Butandioic acid CAS n. 63562-33-4 PHYSICAL FORM: PW 		PU - PA - Polyesters. Reactive phosphorous flame retardant for PU, PA, Polyesters.	197°C	

HALOGEN FREE DOPO DERIVATES

GC ISOEXTER 20 PHYSICAL FORM: LIQ		Polyesters - Polyamides - TPU - Textiles.	2500 - 3500@ 25 °C	
GC ISOEXTER 35 PHYSICAL FORM: LIQ		Polyesters - Polyamides - TPU - Textiles.	5000 - 7000@ 25 °C	
GC ISOEXTER 50 PHYSICAL FORM: LIQ		Polyesters - Polyamides - TPU - Textiles.	12000 - 18000@ 25 °C	

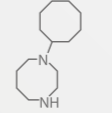
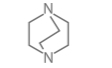
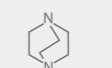
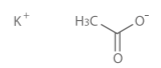
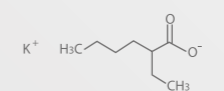
INORGANIC FLAME RETARDANTS

GC Zn BO3 - 4 Zinc Borate CAS n. 1332-07-6 PHYSICAL FORM: PW, COMPACTED		Polyolefins - Polyurethanes- Engineering thermoplastics. Synergist suitable for PVC, Polyolefins, PA, Rubber.	890°C	1% @ 282°C 5% @ 388°C 10% @ 425°C
GC Zn BO3 - 8 Zinc Borate CAS n. 1332-07-6 PHYSICAL FORM: PW, COMPACTED 		Polyolefins - Polyurethanes- Engineering thermoplastics. Synergist suitable for PVC, Polyolefins, PA, Rubber. Specially suitable for Film.	890°C	1% @ 282°C 5% @ 388°C 10% @ 425°C
GC TRIOSSIDO DI ANTIMONIO Antimony Trioxide CAS n. 1309-64-4 PHYSICAL FORM: GR, PW		Polyolefins - Polyurethanes - Engineering thermoplastics. Synergist for brominated flame retardant suitable for plastics and textiles.	656°C	

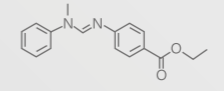
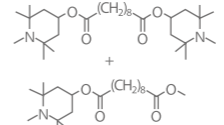
PRODUCTS FOR XPU

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
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CATALYSTS

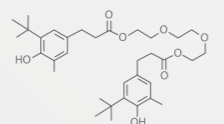
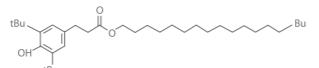
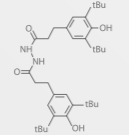
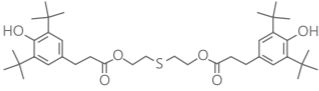
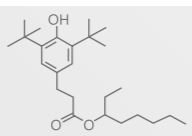
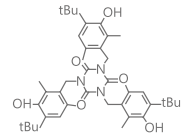
GC TEDA Triethylenediamine CAS n. 1309-64-4 PHYSICAL FORM: GR, PW		Polyurethane foaming plastic - Coating and Elastomer.	158-159 °C	
GC TEDA 33D 1,4-diazabicyclooctane CAS n. 280-57-9 PHYSICAL FORM: LIQ		PU Catalyst.		
GC TEDA 33M 1,4-diazabicyclooctane CAS n. 280-57-9 PHYSICAL FORM: LIQ		PU Catalyst.		
GC K ACE Potassium acetate CAS n. 127-08-2 PHYSICAL FORM: PW		PU Catalyst.	292 °C	
GC K OCTO Potassium octoate CAS n. 3164-85-0 PHYSICAL FORM: PW		PU rigid foam.		

UV ABSORBERS - LIGHT STABILIZERS

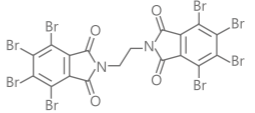


GC UV-1 Ethyl 4-[[[(methylphenylamino)methylene]amino]benzoate CAS n. 57834-33-0 PHYSICAL FORM: LIQ		Polyurethanes. UV absorber especially applicable in PU system such as microcellular and integral skin foam, rigid, semirigid and flexible PU foam. Also applicable in some adhesives, elastomers and sealants.	2000 - 3000 cps at 25°C	
GC UV LS 765/292 2-(2H-benzotriazol-2-yl)-4,6-bis(1-methyl-1-phenylethyl)phenol CAS n. 41556-26-7 + 82919-37-7 PHYSICAL FORM: LIQ		Elastomers - Engineering thermoplastics. UV absorber applicable in wide range of polymers and applications including sealants, polyurethanes, adhesives, elastomers, unsaturated polyesters, acrylics, vinyl polymers (PVB, PVC), styrene homo and copolymers, polyolefins, liquid color concentrates, and other organic substrates.		

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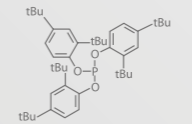
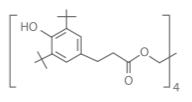
PRODUCTS FOR XPU

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
ANTIOXIDANTS				
GC RIANOX 245 Triethylenglycol-bis[3-(3-t-butyl-4-hydroxy-5-methylphenyl)propionate] CAS n. 36443-68-2 PHYSICAL FORM: GR, PW, MB		Polyurethanes - Engineering thermoplastics. Phenolic antioxidant, suitable for PA, PU, PC/ABS and SB/SBR.	76-80°C	5% @ 297°C 10% @ 312°C 25% @ 332°C
GC RIANOX 1076 Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate CAS n. 2082-79-3 PHYSICAL FORM: GR, PW, MB		Engineering thermoplastics. Phenolic antioxidant, suitable for PS.	50-55°C	5% @ 260°C 10% @ 278°C 25% @ 302°C
GC RIANOX 1024 1,2-bis (3,5-di-t-butyl-4-hydroxyhydrocinnamoyl) hydrazine CAS n. 32687-78-8 PHYSICAL FORM: GR, PW, MB		Polyolefins - Engineering thermoplastics. Phenolic chelating antioxidant and metal deactivator, suitable for PO, PA, Elastomers.	221-232°C	5% @ 284°C 10% @ 295°C 50% @ 330°C
GC RIANOX 1035 Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] CAS n. 41484-35-9 PHYSICAL FORM: GR, PW, MB		Polyurethanes - Polyolefins - Engineering thermoplastics. ABS, Elastomers, PE, PP, PUR, PVA, XLPE.	63-82°C	5% @ 291°C 10% @ 309°C 25% @ 335°C
GC RIANOX 1135/1135R 2-ethylhexyl 3,5-bis(di-tert-butyl)-4-hydroxybenzopropionate CAS n. 144429-84-5 PHYSICAL FORM: LIQ		Polyurethanes. PUR, Polyol.		1% @ 160°C 10% @ 200°C
GC RIANOX 1790 1,3,5-tris(4-tert-butyl-3-hydroxy-2,6-dimethylbenzyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione CAS n. 40601-76-1 PHYSICAL FORM: GR, PW, MB		Polyurethanes- Polyolefins - Engineering thermoplastics. PU, PA, PET, ABS, Polyolefins.	159-163°C	1% @ 202°C 5% @ 333°C 10% @ 349°C

PRODUCTS FOR XPE

PRODUCT NAME	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
FLAME RETARDANTS				
GC BT 67 Ethylenbistetra bromo Phthalimide CAS n. 32588-76-4 PHYSICAL FORM: GR, PW		Polyolefins - Engineering thermoplastics. HIPS, PBT, PET, TPR, good thermal stability, UV stability, no blooming, excellent wet electrical properties.	460°C	1% @ 336 °C 5% @ 417°C 10% @ 430°C
MB PE DETO 41 PHYSICAL FORM: MB		Masterbatch on PE. Heat-stable and synergized with a high content of bromine, perfect candidate for processing at high temperature and stress conditions.		
MB PE BDDP 50 PHYSICAL FORM: MB		Masterbatch containing very active brominated solution, low dosage.		
MB PE BZ 75 ANTIMONY FREE PHYSICAL FORM: MB		Brominated masterbatch without antimony trioxide for XPE application.		
MB PE NOR16 HALOGEN FREE PHYSICAL FORM: MB		Halogen free masterbatch based on NOR molecule.		
MB PE D HF 40 HALOGEN FREE PHYSICAL FORM: MB		Halogen free solution on PE base, synergized.		

ANTIOXIDANTS

GC RIANOX 168 Tris(2,4-di-tert-butylphenyl)phosphite CAS n. 31570-04-4 PHYSICAL FORM: GR, PW, MB		Polyolefins - Engineering thermoplastics. Secondary antioxidant, generally used with THANOX 1010 and suggested for PO, PA and ABS.	183-187°C	5% @ 239°C 10% @ 250°C 25% @ 272°C
GC RIANOX 1010 Tetrabimethylen(3,5-di-t-butyl-4-hydroxycinnamate)methane CAS n. 6683-19-8 PHYSICAL FORM: GR, PW, MB		Polyolefins - Engineering thermoplastics. Phenolic antioxidant, suitable for PA, PO and ABS.	110-125°C	5% @ 350°C 10% @ 365°C 25% @ 387°C

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PRODUCTS FOR XPE

PRODUCT NAME	APPLICATION	DESCRIPTION
TALC MASTERBATCH		
STARCELL PE series PHYSICAL FORM: MB	Nucleating masterbatch.	Talc masterbatch at different concentrations on Polyethylene base.
STARCELL PE U series PHYSICAL FORM: MB	Nucleating masterbatch.	Spherical talc masterbatch at different concentrations on PE base.

PROCESS AID

	CHEMICAL FORMULA	APPLICATION	M.P./S.R. Viscosity	TGA
GC GMS 90 Stearic acid, monester with glycerol (gms ≥90) CAS n. 31566-31-1		Plasticizer.	66,7°C	
GC GMS 40 Stearic acid, monester with glycerol (gms ≥40) CAS n. 31566-31-1		Plasticizer.	66,7°C	

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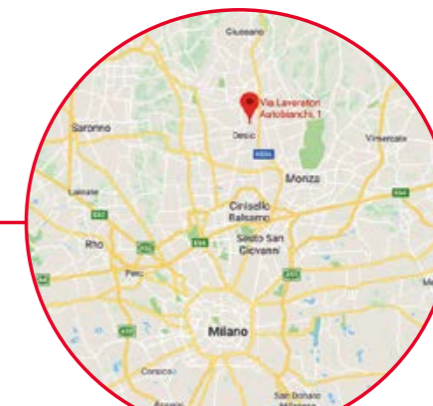
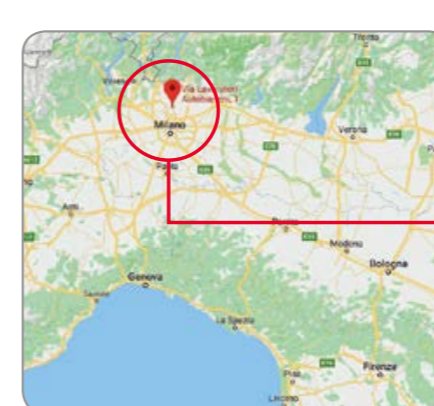
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