

# Grolman

International Distribution

**WE WANT TO SELL CHEMICALS  
TO SAVE THE PLANET**



Product Portfolio for Coatings, Adhesives,  
Sealants and Construction Chemicals

Turkey

## The Grolman Group

**The Grolman Group operates an international specialty ingredients distribution business. It is composed of individual sales offices based in all European countries, Turkey, Maghreb, Egypt, India and China, each supported by technically trained sales staff, customer service teams and local warehousing.**

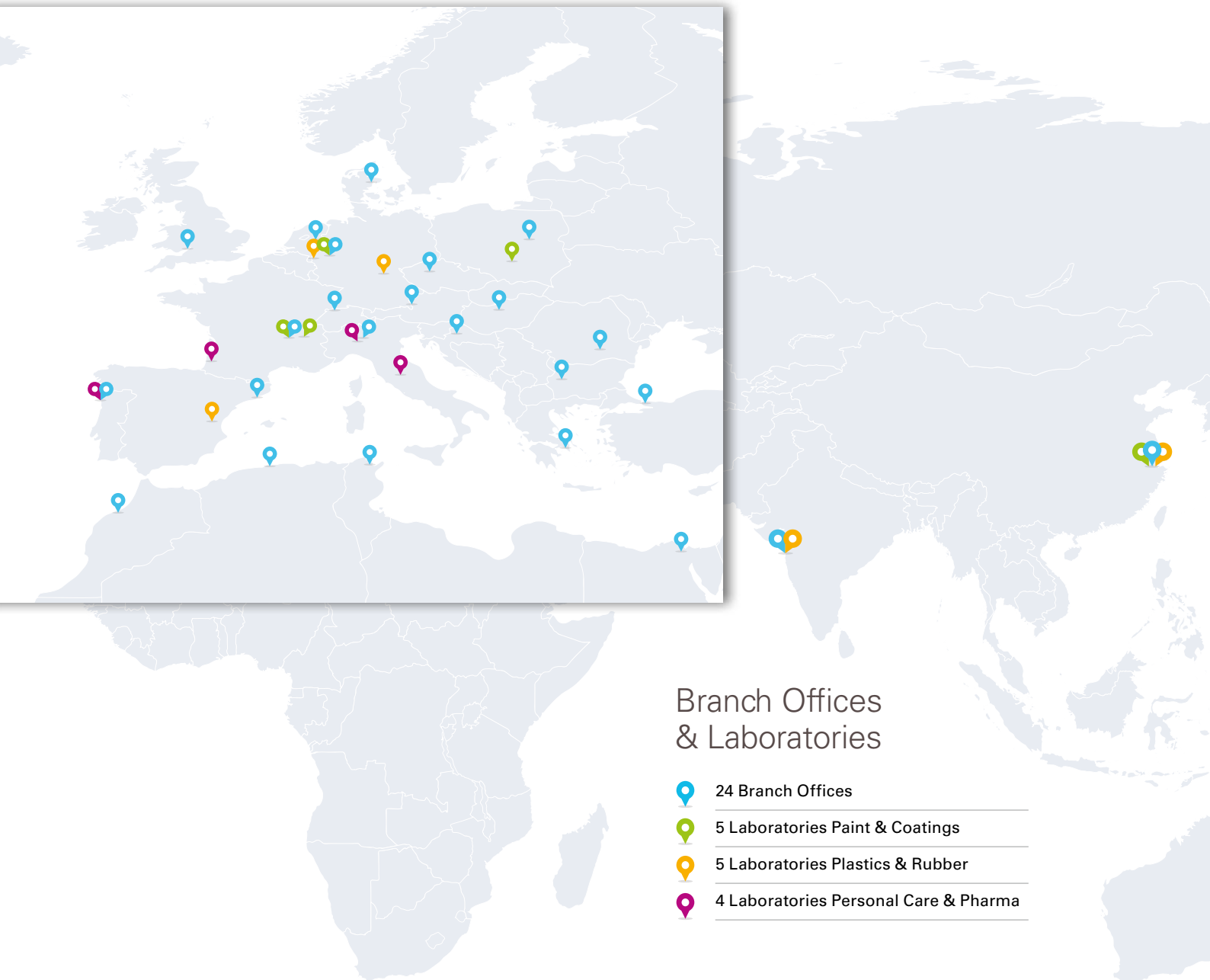
The Grolman Group, run by the fifth generation of the Grolman family, has been privately owned since it was established in 1855. The key to its success has been the dedication and commitment to building an efficient customer-focused organisation where customers' needs are an essential driving force.

**Grolman. Quality since 1855.**

### Raw materials for Coatings, Adhesives, Sealants and Construction Chemicals

- Additives
- Resins & Crosslinkers
- Pigments & Dyes
- Performance Materials & Fillers

# International Distribution of Specialty Chemicals



# Additives

<b>Product</b>	<b>Supplier</b>	<b>Tradename</b>	<b>Page</b>
Polyamide Coating Additives	Arkema	ORGASOL®, RILSAN®	18
Anti-Corrosion Pigments	Grolman	rima cor	19
Anti-Flash Rusting Additives	Grolman	rima flash	20

# Resins & Crosslinkers

<b>Product</b>	<b>Supplier</b>	<b>Tradename</b>	<b>Page</b>
Imidazole - Accelerators and Curing Agents	Shikoku	Curezol®, Cureduct®	22
Polymer Emulsions	EPS	EPS®, Dyflex®, PC-Mull®	23

# Pigments & Dyes

<b>Product</b>	<b>Supplier</b>	<b>Tradename</b>	<b>Page</b>
Titanium Dioxide	various	various	25
Complex Inorganic Colour Pigments (CICPs) & Laser Marking Pigments	Tomatec		26
Rare Earth Pigments	Hongbo Te	Neolor™, greenTop	27
Organic Pigments	rima colour /Verdcol	rima, Verdcol	28
Pearlescent Pigments, Laser Marking Pigments & Glitter	JointColor	AG, EL, ES, EV, FP, JR, TL, TR, TRY, TS, TV, JCeco	30
Luminescent Pigments & UV / IR Pigments	Next Generation	NLP	31
Thermochromic Pigments	TMC (Spotsee)	ChromaZone®, Kromagen	32

# Performance Materials & Fillers

<b>Product</b>	<b>Supplier</b>	<b>Tradename</b>	<b>Page</b>
Precipitated Calcium Carbonate - PCC	euroMinerals	CALPREC	34
Graphite and Resilient Graphitic Carbon	Superior Graphite	FormulaPT™, FormulaBT™	35
Fumed Silica	rima sil	rima sil	36
Matting Silica	rima matt	rima matt	37
Hollow Glass Microspheres	rima light	rima light	38
Synthetic Barium Sulfate	rima fixe	rima fixe	39
Barium Sulfate (Baryte)	rima barite	rima barite	40
Mica	rima mica	rima mica	41
Circular Carbon Fibers	C.A.R. Fibertec	CF TRIM, CF FLEX, CF BASE	42
Boron Nitride	Momentive Technologies	PolarTherm™, CoolFlow™, CoolFx™	43
Graphene, Graphene Oxide, Graphene Nanoplateletes	G3 - Global Graphene Group	Graphene	44
China Clay (Kaolin)	EICL	Himatex, Himafine, Himafil, Supershine, Superlustre	45
Flame Retardants	Wellchem	Exflam	46

# Additives

Product	Supplier	Application							Functionality														Sustainability							
		Architectural Coating	Industrial Coating	Wood Coating	Powder Coating	Ink	Adhesives	Sealants	Construction	Adhesion Promoter	Anti-corrosion	Catalyst	Coalescent Agent	Cross-linking	Defoamer	Dispersant	Dry-film Preservative	Flow & Levelling	Hydrophobing	In-can Preservation	Scratch & Mar Resistance	Matting	Rheological Additive	Slip Additive	UV Protection	Substrate Wetting	Texturing	Circularity	Low VOC	Energy Efficiency / Lowered Production Footprint
Polyamide Coating Additives ORGASOL®, RILSAN®	Arkema	■	■	■	■																■	■								
Anti-Corrosion Pigments rima cor	Grolman	■	■		■					■																				
Anti-Flash Rusting Additives rima flash	Grolman	■	■						■																					

# Resins & Crosslinkers

Product	Supplier	Application										Chemistry														
		Architectural Coating	Industrial Coating	Wood Coating	Powder Coating	Ink	Adhesives	Sealants	Construction	Acrylic Emulsions	Styrene Acrylic Emulsions	Acrylic Resins	Alkyd Emulsions	Alkyd Resins	Amino Resins	Epoxy Systems	Polyisocyanates	Modified Alkyd Resins	Polyester Resins	Polyurethane Dispersions	Silane Modified Polymers	Natural polymer	Mass Balance Approach	Silicone resins	Redispersible powders	
Imidazole - Accelerators and Curing Agents Curezol®, Cureduct®	Shikoku				■		■	■								■										
Polymer Emulsions EPS®, Dyflex®, PC-Mull®	EPS	■	■	■		■			■	■																



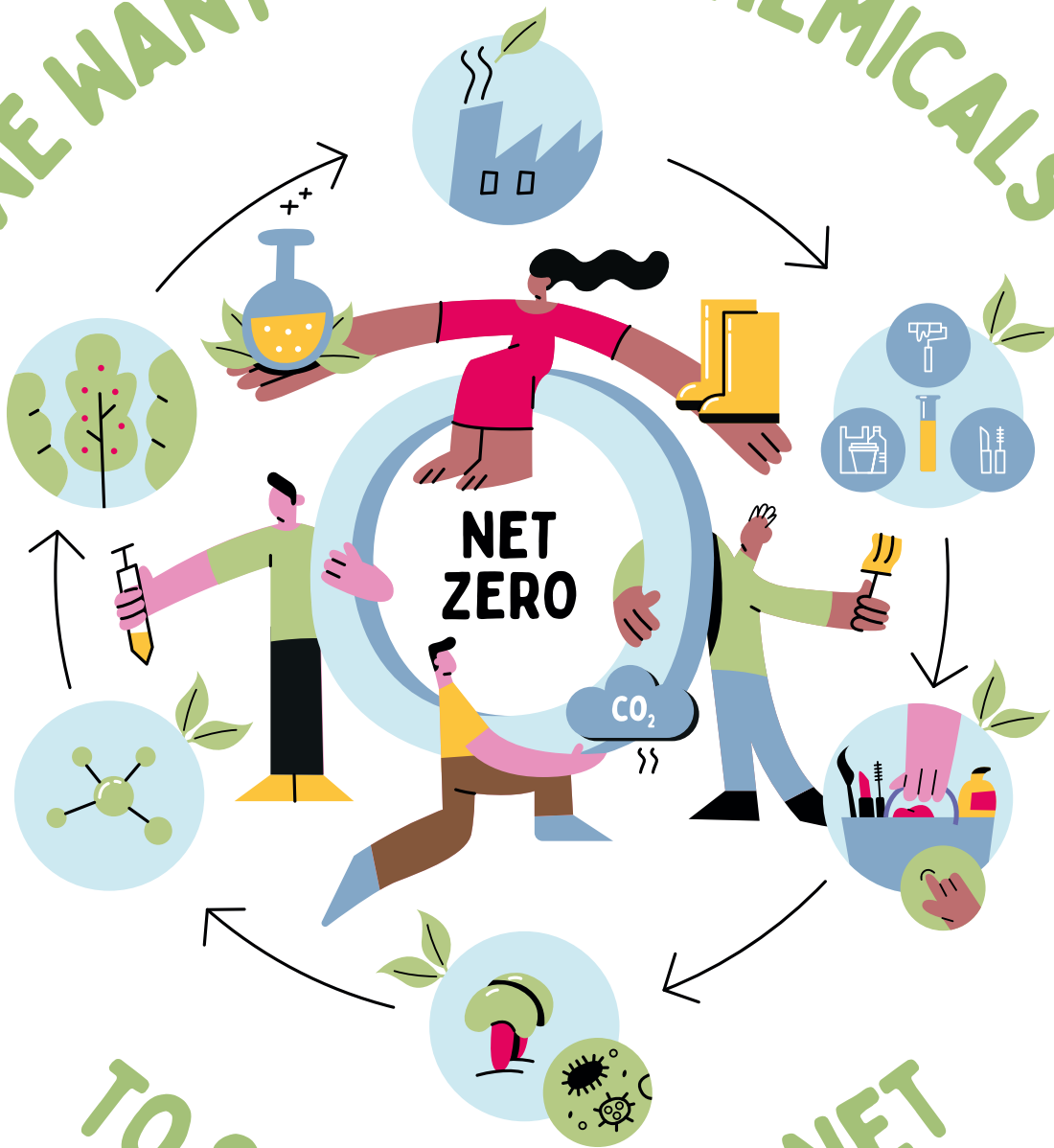
# Pigments

Product	Supplier	Application								Functionality															
		Architectural Coating	Industrial Coating	Wood Coating	Powder Coating	Ink	Adhesives	Sealants	Construction	IR Reflectance	IR Absorption	UV Protection	Antistatic	Conductivity	Magnetic	Non Migratory	Metallic Effect	Pearlescent Effect	Fluorescence	Luminescence	Thermochromic	Photochromic	Laser Marking	Security	Colour
Titanium Dioxide Various	various	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Complex Inorganic Colour Pigments (CICPs) & Laser Marking Pigments	Tomatec	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Rare Earth Pigments Neolor™, greenTop	Hongbo Te	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Organic Pigments rima, Verdcol	rima / Verdcol	■	■	■	■	■	■	■	■	■	□	■	■	■	■	■	■	■	■	■	■	■	■	■	
Pearlescent & Laser Marking Pigments & Glitter AG, EL, ES, EV, FP, JR, TL, TR, TRY, TS, TV, Jceco	JointColor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Luminescent Pigments & UV / IR Pigments NLP	Next Generation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Thermochromic Pigments ChromaZone®, Kromagen	TMC (Spotsee)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

# Performance Materials & Fillers

Product	Supplier	Application						Functionality															Sustainability														
		Architectural Coating	Industrial Coating	Wood Coating	Powder Coating	Ink	Adhesives	Sealants	Construction	Wetting & Dispersing	Levelling & Flow	Rheology	Gloss Management	Mar Resistance	Stain Resistance	UV Protection	Weather Resistance	Hardness	Light Diffusion	Anti-corrosion	Processability	Adhesion Promoter	Heat Insulation	Flame Retardancy	Weight Reduction	Texturing	e-conductivity	Thermal Conductivity	Barrier	Low Friction	Mechanical Properties	Hygiene	Durability	Circularity	Environmentally Friendliness	Energy Efficiency / Lowered Production Footprint	
Precipitated Calcium Carbonate (PCC) CALPREC	euroMinerals	■	■	■	■	■	■	■		■	■	■			■	■		■	■															■		■	
Graphite FormulaPT™, FormulaBT™	Superior Graphite	■	■			■		■																			■	■									■
Fumed Silica rima sil	Grolman	■	■	■	■	■	■	■		■	■																										
Matting Silica rima matt	Grolman	■	■	■		■				■	■	■								■						■											
Hollow Glass Microspheres rima light	Grolman	■	■	■			■	■		■	■						■		■		■		■		■	■											■
Synthetic Barium Sulfate rima fixe	Grolman	■	■	■	■	■	■	■				■				■	■		■						■												
Barium Sulfate (Baryte) rima barite	Grolman	■	■		■		■	■				■							■	■					■												
Mica rima mica	Grolman	■	■					■	■							■	■	■	■	■					■				■		■						■
Circular Carbon Fibers CF TRIM, CF FLEX, CF BASE	C.A.R. FiberTec	■	■				□	■									■							■		■	■							■		■	
Boron Nitride PolarTherm™, CoolFlow™, CoolFX™	Momentive Technologies		■		■		■	■																			■			■							
Graphene, Graphene Oxide, Graphene Nanoplateletes G3 Graphene Powders	G3 - Global Graphene Group	■	■			■	■	■						■	■	■	■		■					■		■	■	■		■							
China Clay (Kaolin) Himatex, Himafine, Himafil, Supershine, Superlustre	EICL	■	■	■		■	■	■		■	■	■	■						■		■				■				■								
Flame Retardants Exflam	Wellchem	■	■	■	■	■	■	■																	■												

WE WANT TO SELL CHEMICALS





# WE WANT THE CHEMICAL INDUSTRY TO BE CURE, NOT THE DISEASE

## WE FEEL RESPONSIBLE

This is our vision because, as a family business, we want to pass on a healthy planet to the next generation. With these targets we are well on our way to reducing waste in our environment, and increasing our positive impact on our customers, the chemical industry and society.

## WE NEED PARTNERS

We are convinced that all this will only be possible in close cooperation with our existing partners, suppliers, and customers, as well as new partners who will join us on this path. With our technical expertise and close personal relationships, we connect partners and needs along the entire value chain to jointly develop opportunities in circular innovation.



## CIRCULARITY IN THE CAS INDUSTRY

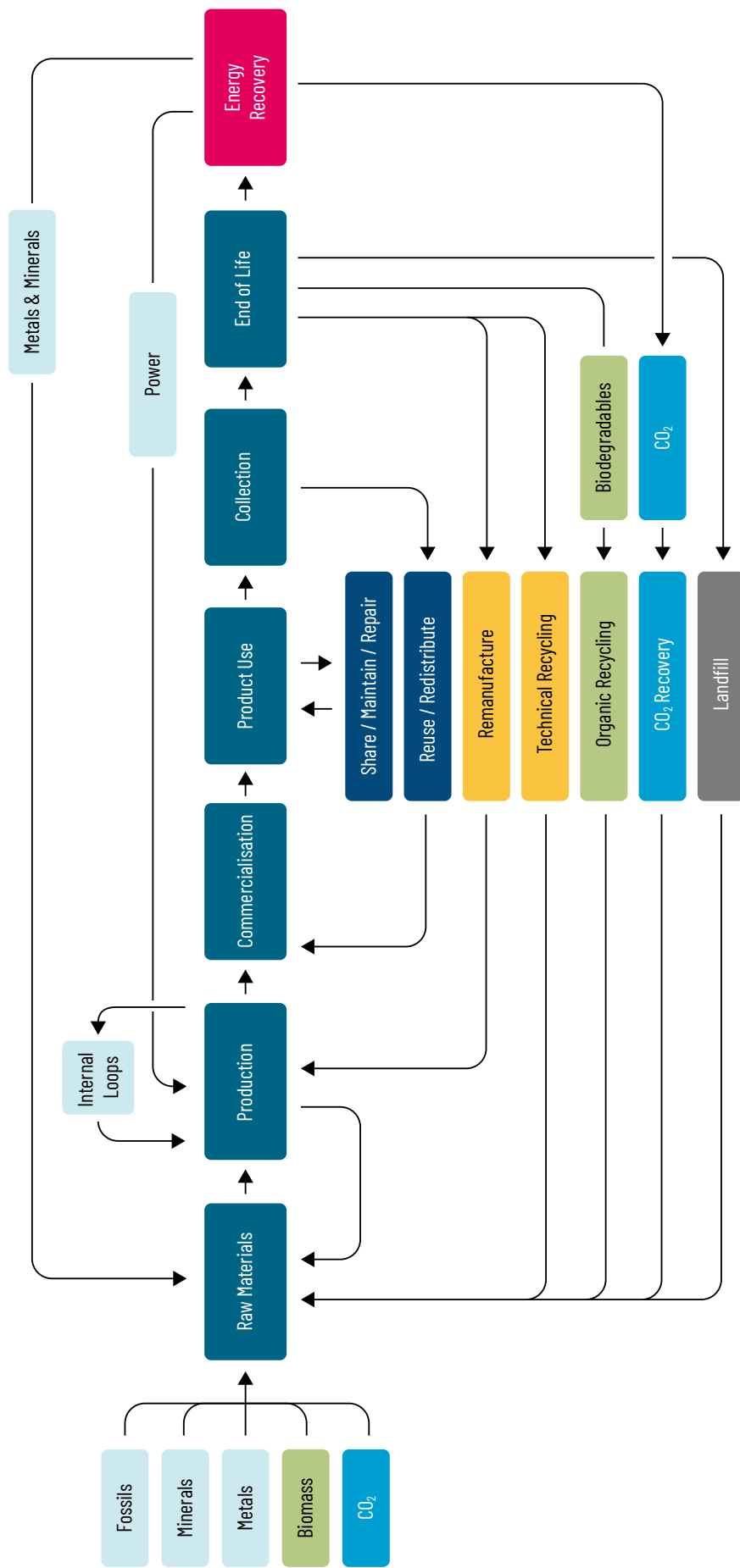
The CAS industry can contribute to a circular economy by working on a wide set of diverse variables along value chains. Materials streams can be turned from linear to circular by redesigning our processes and the way we feed them, such as but not limited to manufacturing durable, repairable and reusable goods, avoiding waste, turning waste into raw material either from post-consumer or from post-industrial streams, using renewable raw materials, recycling or upcycling end-of-life products, and so forth. A perfect closed loop production system would rely, of course, on renewable energy sources.

We like to represent the diversity of circular opportunities into the flow charts reported in the next pages, and we are thrilled to explore them with our partners to drive the change together.

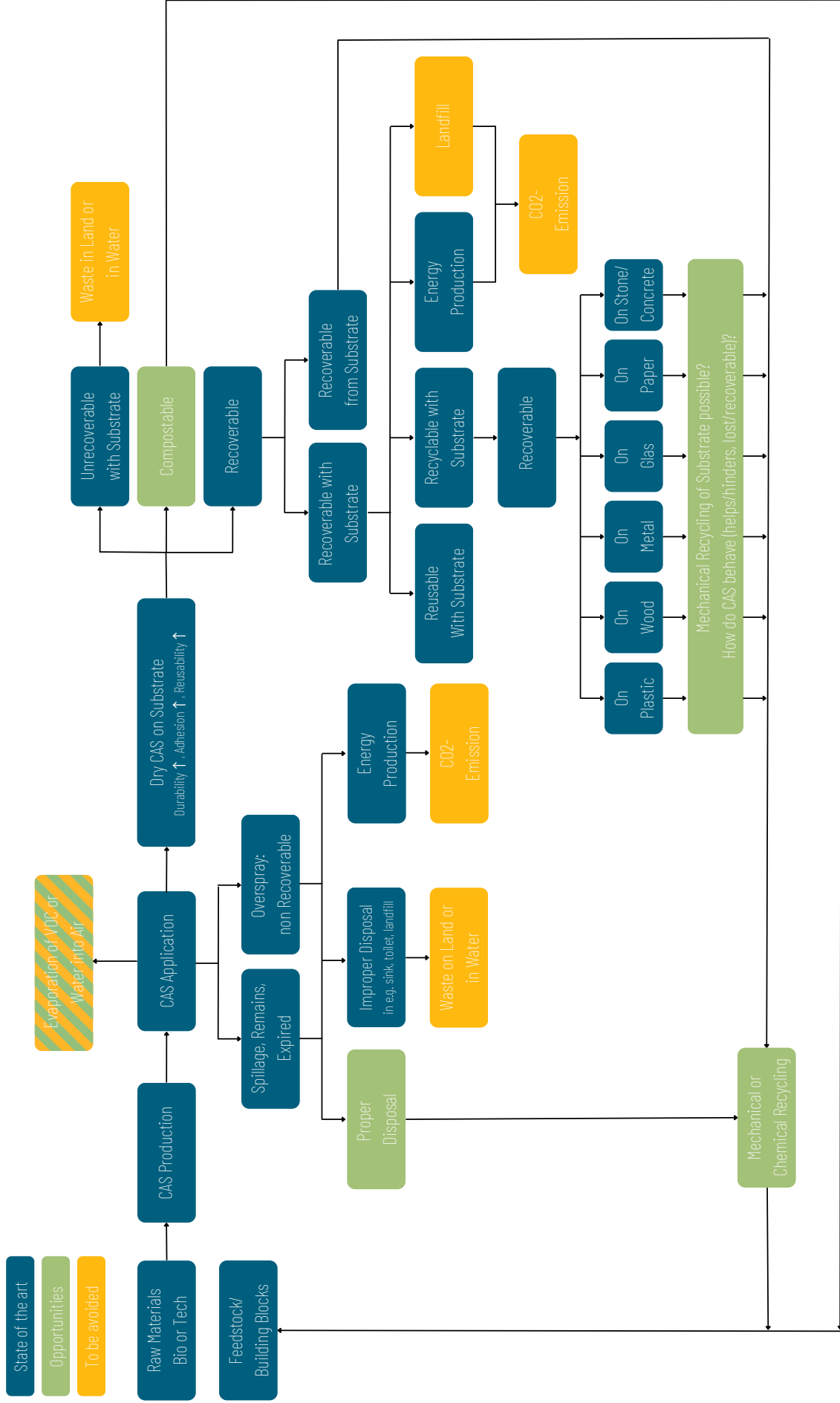
For more information about our sustainable solutions please consult with one of our team members: [sustainability@grolman-group.com](mailto:sustainability@grolman-group.com)



MATERIAL STREAMS: FROM LINEAR TO CIRCULAR



## MATERIAL STREAMS IN CAS



## Circularity in CAS for a Sustainable Development



By promoting circularity along value chains, we strive to contribute to the achievement of the following UN Sustainable Development Goals (SDGs):



Build a resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

### Focus on Raw Materials and Supply Chain

Our effort to contribute to SDG 9:

- Promote the Integration of circular economy into the design phase.
- Promote Cradle to Cradle practices.
- Promote the collaboration with our business partners on NetZero and circular economic growth.



Ensure sustainable consumption and production patterns

### Focus on Consumption and End of Life

Our effort to contribute to SDG 12:

- Promote a holistic environmental management system with our customers to support us in reducing the long-term environmental impacts of chemical productions.
- Promote circular economy practices internally and externally, Reduce, Reuse, Recycle and strive for durable products to reduce waste.



Take urgent action to combat climate change and its impacts

### Focus on CO2 Reduction along the Value Chain

Our effort to contribute to SDG 13:

- Promote Reduction of Green House Gases in the entire value chain without the use of offsets achieving NetZero SBTi goals.



# Grolman

---

Innovative Materials for Your Success

Additives

# Polyamide Coating Additives

## ORGASOL<sup>®</sup>, RILSAN<sup>®</sup>



**ARKEMA GROUP is a global manufacturer of specialty chemicals and advanced materials. With three business segments – High Performance Materials, Industrial Specialties, and Coating Solutions – and globally recognized brands, the group reports annual sales of 7.88 billion euros. Buoyed by the collective energy of its 20.600 employees, Arkema operates in close to 55 countries. In order to develop new materials and bring them to fruition, the Arkema Group is counting on a strong R&D and an Open Innovation strategy.**

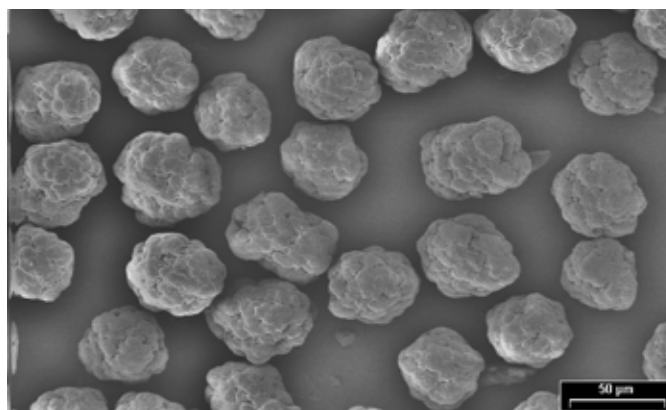
ORGASOL<sup>®</sup> and RILSAN<sup>®</sup> polyamide powders with their unique combination of properties bring the desired performances to either water-based, solvent-based, UV/EB or powder formulations on a wide variety of substrates.

## ORGASOL<sup>®</sup>

ORGASOL<sup>®</sup> is a range of high performance ultra-fine polyamide powders used as additives in paints, varnishes, inks and technical compounds to improve the properties of highly demanding coatings applications.

### Features

- High abrasion / mar resistance
- High scratch resistance
- Matting and gloss control
- Non thixotropic agent / viscosity control
- Unique surface texturing effect
- Soft touch
- Anti-blocking (reduction of coefficient of friction)
- Easy dispersion in all kinds of liquid paints



## RILSAN<sup>®</sup>

RILSAN<sup>®</sup> is a range of high performance fine polyamide powders manufactured from a 100% renewable resource (castor oil) and used as additives in industrial coatings to improve properties and impart texture. The morphology of the particles is obtained through grinding.

### Features

- |   |   |
|---|---|
| ■ Improved scratch and abrasion resistance  | ■ Low moisture pick-up                          |
| ■ Textured surface effects based on variety of particle size and mass colouration | ■ A unique touch                                |
| ■ Matting and gloss control   | ■ Low density                                   |
| ■ Outstanding chemical resistance   | ■ Easy dispersion in all kinds of liquid paints |

# Anti-Corrosion Pigments

rima cor



**The rima cor product range has been developed by Grolman Group to support its customers with anti-corrosion pigments that meet the needs for effective corrosion protection and allow the formulation of protective coatings without hazardous labelling.**

## rima cor

rima cor anti-corrosion pigments offer a very effective way to develop protective coatings where corrosion inhibition is required. The products are designed for solvent- as well as water-based systems and present an environmental advantage versus conventional systems. The technology based on aluminium tri polyphosphate (ATP) and a synergised metallic complex has been developed by the Grolman laboratory to fulfil the needs of the European legislation and market requirements.

## Products

- **rima cor SWM New:** cost effective and versatile anti-corrosion pigment with improved efficiency, can be used in various coating systems
- **rima cor SWA:** similar to SWM but with higher efficiency in solvent-based coatings
- **rima cor LCV:** economical version of rima cor SWM with low content of zinc
- **rima cor SWM 60MC:** ready to use Multi Compatible (for water or solvent-based) dispersion of rima cor SWM at 60%

rima cor shows excellent corrosion prevention when compared to widely used zinc phosphate-based systems. The pictures show the results of different anti-corrosion pigments in a solvent-based epoxy 2K coating with 4-5% by weight anti-corrosive pigment applied at 50µm dry after 1200 hours of neutral salt spray test on cold rolled steel.



Control



rima cor SWM



rima cor SWA



rima cor LCV



Zinc phosphate

# Anti-Flash Rusting Additives

## rima flash



The rima flash product range has been developed by the Grolman Group to support its customers with anti-corrosion additives that meet the needs for effective corrosion protection and allow the formulation of protective water-based coatings.

### rima flash

rima flash additives offer a very effective way to develop protective water based coatings without flash rusting in the can and on the coated metal panel.



rima flash exists in a nitrite- and VOC-free version, thus European Ecolabel Compliant.

How does rima flash work? There are two types of reactions:

- Absorption of the inhibitors on the metal surface which creates a chemical barrier at the molecular stage on the whole surface of the substrate.
- Reaction with the oxidised metal which reinforces the anodic passivation. Inhibitors are considered as the most efficient way to prohibit flash rust formation



rima flash also prevents tin cans from corroding to avoid damage of the content

### Benefits

- Ready to use solutions
- Multi active molecules with their specific action process
- Strong efficiency thanks to the synergies of the various action modes
- Low dosage: 0.2% up to 1.5% on total weight
- rima flash also prevents tin cans from corroding to avoid damage of the content

### Product range

Grolman offers a full range of rima flash products for different types of metal surfaces and binder technologies.

Product	PUD	Acrylic	Epoxy	Alkyd	Acid latex
rima flash B5		■ □		■ □	
rima flash C5		■	■		
rima flash CB 25					
rima flash OGP	■ □	■	■	■	■
rima flash E636	■ □		■		■ □
rima flash JDO	■ □	■	■	■ □	
rima flash BF		■		■ □	
rima flash 202				□	
rima flash OB V3	■ □	■ □	■ □		
rima flash GR	■	■	■	■	■

■ = Iron and Steel □ = Other alloys

# Grolman

---

Innovative Materials for Your Success

Resins & Crosslinkers

# Curing Agents for Epoxy and Phenolics

## Curezol<sup>®</sup>, Cureduct<sup>®</sup>

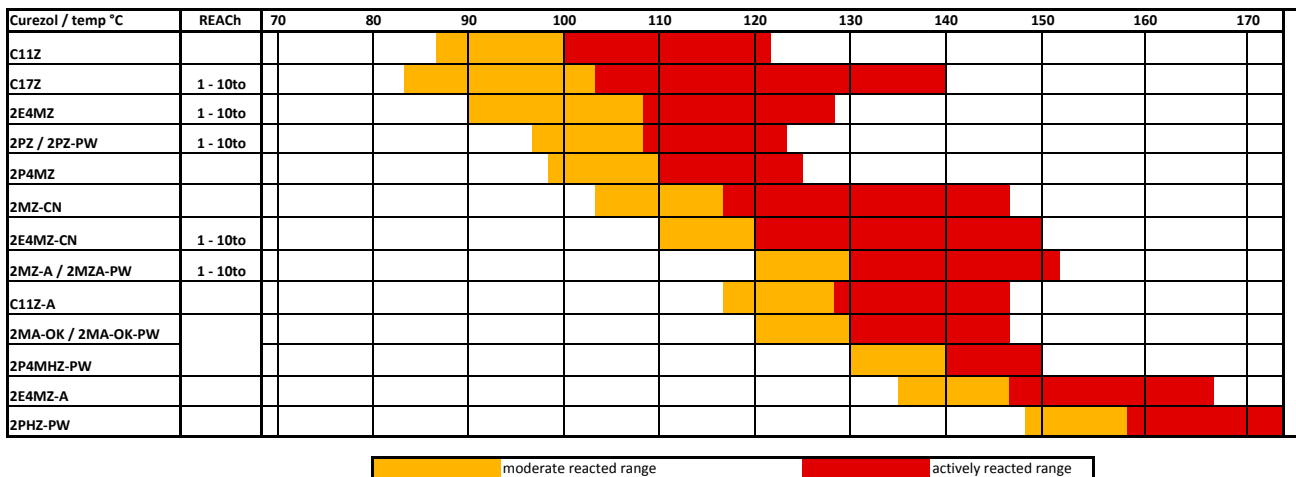


Shikoku was founded in 1947 and is a Japanese specialty chemicals company. They started the production of imidazoles in 1968. Since then the product lineup and production scale have been expanded to satisfy the various demands of their customers. Curezol<sup>®</sup> imidazoles cover a large range of reactivity and shelf life demands in the curing of thermoset resins. However, the main use is in epoxy systems. As Curezol<sup>®</sup> is a catalyst type, only small amounts are required (1-10phr). Imidazoles can be used either as the only curing agent or in combination with others such as anhydride, polyamines, phenolic resin and DiCy. The solid Curezol<sup>®</sup> will not increase the viscosity of the compound.

### Features and advantages of Curezol<sup>®</sup>

Curezol<sup>®</sup> improves the heat resistance of the final parts and leads to improved mechanical properties as well as better chemical resistance. A broad range is available to improve properties, with low, medium and high curing temperature and short, medium and long pot life. As it is a single substance, there is no molecular weight distribution. This creates stable characteristics. Typical applications are prepregs for printed circuit boards, autoclave, compression moulding as well as adhesives, sealants and powder coatings.

Curezol reaction temperature chart



### Cureduct<sup>®</sup> L07E

A special blocking agent Cureduct<sup>®</sup> L07E can stabilize a compound for up to several weeks to achieve a system that starts curing only if temperatures above 50°C are applied. This inhibitor is used in combination with an imidazole adduct.

### Benefits

- Improved heat resistance
- Lower peak exotherm
- Higher mechanical properties

# Polymer Emulsions

EPS<sup>®</sup>, Dyflex<sup>®</sup>, PC-Mull<sup>®</sup>



**EPS<sup>®</sup> creates and supplies speciality dispersions designed for architectural and industrial coatings and the construction market. EPS<sup>®</sup> is committed to understanding the needs of the customers and helping them to succeed. With a personalised approach, innovative technology and exceptional technical service EPS<sup>®</sup> makes doing business easy.**

## EPS<sup>®</sup>, Dyflex<sup>®</sup> and PC-Mull<sup>®</sup> polymer emulsions

EPS<sup>®</sup> offers a wide range of pure and modified acrylic dispersions based on proprietary technology which enables value-added features such as block, abrasion, early water resistance and adhesion to multiple substrates.

### Architectural coatings

EPS<sup>®</sup> has developed a full range of binders to meet the challenging performance requirements of this market segment. For example:

- Proprietary multi-substrate adhesion technology: EPS<sup>®</sup> 294
- Self crosslinking for high performance applications requiring improved barrier properties: EPS<sup>®</sup> 572
- Tannin, efflorescence and household stain blocking: EPS<sup>®</sup> 533
- Penetrating primer: EPS<sup>®</sup> 730
- ADH free, Ecolabel compliant lasures and stains: EPS<sup>®</sup> 745
- Best in test scrub performance: EPS<sup>®</sup> 747



### Industrial coatings

This complex market encompasses a wide range of substrates, application methods and performance requirements. Over many years, EPS has built its understanding of this area and uses this knowledge to develop innovative binders and solutions for the industrial coatings market.

- Binder for interior and exterior wood applications such as transparent lasures, enamels and varnishes with exceptional leveling properties and UV resistance. Excellent in-can transparency: DYFLEX<sup>®</sup> LP 1225.
- Unrivalled wet adhesion and gloss on a range of metal substrates: EPS<sup>®</sup> 595
- Cool roof technology to reduce the energy footprint of buildings: EPS<sup>®</sup> 719
- Best in class 1K solution for furniture coatings: PC-Mull<sup>®</sup> VP 435
- Temporary, strippable coatings for glass and metal: EPS<sup>®</sup> 546
- High clarity, low colour plus excellent hardness & chemical resistance: Dyflex<sup>®</sup> LP 1700
- Rapid block & hardness development for fast lines: PC-Mull<sup>®</sup> 1016
- Proven performance on metal and wood: Dyflex<sup>®</sup> LP 9624

# Grolman

---

Innovative Materials for Your Success

Pigments & Dyes



# Titanium Dioxide

**With an output of more than 3 mio. t of TiO<sub>2</sub> per year China nowadays is the country with the biggest capacity and hence became the biggest TiO<sub>2</sub> exporter. Anatase or rutile sulfate and chloride grades are available in a constantly increasing quality. Through the Grolman China office in Hangzhou and our group laboratory in France we are continuously selecting the best titanium dioxide grades from China. Based on our evaluations we offer a portfolio of high quality grades for various applications.**

## TiO<sub>2</sub> for paint & coating and printing ink systems

For coatings applications the following grades are recommended

- **Tinox A-2380** – universal anatase grade. It is used in a wide range of applications like paint, paper and ceramics, especially where the high whiteness of anatase is desired.

---

- **CR-1120** – is a universal chloride TiO<sub>2</sub> which can be used for exterior paints & coatings. Produced with advanced technologies, particularly in terms of particle size control, the pigment shows excellent optical properties. It has an inorganic surface treatment in combination with a special organic post-treatment.

---

- **R-298** – is a multi-purpose rutile TiO<sub>2</sub> with a very fine particle size which is produced by the sulfate process. It provides excellent durability, hiding power, a bluish undertone and high tinting strength in solvent-borne and water-borne systems

---

- **Tinox R-2140** – is a versatile rutile TiO<sub>2</sub> via sulfate process which is used in paints and coatings. It provides high durability, good gloss properties and strong hiding power with high tinting strength and good dispersibility.

---

- **Tinox R-2160** – is a rutile universal TiO<sub>2</sub> produced by the sulfate process for water-borne and solvent-borne paint systems. It provides high durability, strong tinting strength, excellent gloss properties and dispersibility. It has a strong bluish undertone.

---

- **R-2195** – is a universal TiO<sub>2</sub> produced by the sulfate process with an alumina, silica and organic surface treatment, which is widely used in coatings and inks.

---

- **R-2295** – is a universal TiO<sub>2</sub> produced by the sulfate process with an alumina, zirconia and organic surface treatment, which is widely used in exterior paints & coatings or inks.

---

- **R-5195** – excellent hiding power TiO<sub>2</sub> for exterior coating, matt latex paint and high hiding system. It has an alumina, silica and organic surface treatment. Additionally it shows an excellent performance in aqueous systems.

---

- **R-5395** – is a TiO<sub>2</sub> produced by the sulfate process. It has a special alumina and organic treatment and is designed for printing ink systems.

---

# Complex Inorganic Colour Pigments (CICPs) & Laser Marking Pigments



**TOMATEC (Toyo Seikan Material Technology Co., Ltd.) is a leading manufacturer of a wide range of CICPs with more than 70 years of experience and production sites in Japan, China and Indonesia.**

## Product Range

CICPs are inorganic pigments that consist of two or more metal oxides (therefore also known as Mixed Metal Oxides) and are produced by calcination at temperatures > 800°C. CICPs are highly durable bright colours, which are typically used in demanding applications, where temperature, chemical, light or weathering resistance are critical. Due to their IR reflective properties, CICPs are used to produce “cool colours”

CICPs are non-toxic as they are chemically inert. Nevertheless, some of them contain heavy metals, such as Cr, Sb, or Ni. In order to meet the growing demand for heavy metal free solutions, TOMATEC developed environmentally friendly pigments, which are heavy metal free and offer very similar shades to well known colour indices, e.g. PBr 48 as alternatives to PBr 24 types or Ni free PG 50.

The innovative Tomatec laser marking types can be used at much lower concentration than conventional types.

■ <b>PY 53:</b>	yellow
■ <b>PY 119:</b>	brown
■ <b>PY 161:</b>	buff
■ <b>PY 189:</b>	yellow
■ <b>PV 47:</b>	pink
■ <b>PB 28:</b>	blue to turquoise shades
■ <b>PB 36:</b>	blue to turquoise shades
■ <b>PB 73:</b>	pink
■ <b>PG 17:</b>	black
■ <b>PG 50:</b>	green

■ <b>PBr 24:</b>	buff
■ <b>PBr 29:</b>	black
■ <b>PBr 33:</b>	brown to dark brown
■ <b>PBr 34:</b>	brown or black
■ <b>PBr 48:</b>	buff
■ <b>PBk 26:</b>	black
■ <b>PBk 27:</b>	black
■ <b>PBk 28:</b>	black
■ <b>Laser Marking:</b>	black marking

## Benefits

- High heat stability
- High chemical resistance
- Excellent light and weather stability
- IR reflective 
- Fine laser markings at very low concentrations



# Rare Earth Pigments

## Neolor™, greenTop



**Hongbo Te was established in 2008 and is located in the Inner Mongolian Rare Earth High-Tech Industrial Development Zone. After having produced orange and red rare earth pigments already for some years, Hongbo Te acquired the Neolor™ business from the market leader Solvay in 2016. Contrary to Solvay, who was producing by the gas-solid route only, Hongbo Te uses the solid-solid as well as the gas-solid production route, which leads to a bigger variety of grades. Where Solvay had one big gas-solid reactor only, Hongbo Te uses several smaller reactors in parallel and in a modular way. Thus a safe supply chain is assured.**

## Product Range

Hongbo Te offers orange, red and burgundy cerium sulfide pigments under the tradenames Neolor™ and greenTop. These pigments have a very high heat fastness, migration stability and light and weather fastness which makes them ideal, especially for the colouration of powder coatings. Because they are heavy-metal free, these pigments are excellent replacements of cadmium and lead chromate pigments, which in many regions and applications can no longer be used. Additionally, cerium sulfides enhance the durability of the powder coating and reduce the need for anti-UV additives.



Neolor™ and greenTop pigments have very effective IR reflecting properties. Due to the limited number of orange, red and burgundy pigments for those purposes, the pigments are ideal for the formulation of “cool colours”. Cerium sulfides have unique soft crystals, which enable their use in powder coating. Neolor™ and greenTop pigments are often used for shading because organic pigments in such small concentrations deteriorate and are difficult to dose.

## Benefits

- Heavy metal free colourations of powder coatings
- Soft crystals
- Reduced need of anti-UV additives
- IR reflective orange and red pigments
- Ideal for shading
- Heat fastness up to 320° C
- Very high light and weather fastness

Under the rima colour / Verdcoll brand names, Grolman offers a range of organic pigments suitable for inks, plastics and paints & coatings with high tinting strength, good dispersibility and fastness properties.

## Strengths

- High temperature resistance
- Consistent quality is assured by our in-house quality assurance department
- Technical support – pre & post sales
- Prompt deliveries

Colour Index	Grade	Heat Resistance [°C/30 min]	Paint & Coating						Ink		
			Powder Coating	Industrial Coating, solvent-based	Industrial Coating, water-based	Deco Coating, water-based	Automotive Coating, solvent-based	Automotive Coating, water-based	Off set	Solvent-based	Water-based
<b>PY 13</b>	Verdcoll DL Yellow 13 S / 13 GP	180	-	-	-	-	-	-	-	■	□
<b>PY 14</b>	Verdcoll DL Yellow 14 S / 14 GP	180	-	-	-	-	-	-	-	■	□
<b>PY 17</b>	Verdcoll DL Yellow 17 S	180	-	-	-	-	-	-	-	■	-
<b>PY 74</b>	rima colour Yellow 746 / 747	150	□	■	■	■	-	-	-	□	□
<b>PY 81</b>	Verdcoll DL Yellow 81 PH	200	□	■	■	■	-	-	□	□	□
<b>PY 83</b>	rima colour Yellow 837	200	■	■	■	□	□	□	-	■	-
<b>PY 97</b>	rima colour Yellow 971	180	□	■	■	■	-	-	-	-	-
<b>PY 109</b>	rima colour Yellow 1093	150	-	■	■	■	■	■	-	-	-
<b>PY 110 (op)</b>	rima colour Yellow 1103RN / Verdcoll Yellow 110 PTR / GP	200	■	■	■	■	■	■	■	■	■
<b>PY 138</b>	rima colour Yellow 1382	250	■	■	■	■	■	■	-	-	-
<b>PY 139 (op)</b>	rima colour Yellow 1393CO	200	■	■	■	■	■	■	-	□	□
<b>PY 151</b>	Verdcoll BML Yellow 151 GH / 151R	260	□	■	■	■	■	■	-	□	■
<b>PY 154</b>	rima colour Yellow 1541C / Verdcoll BML Yellow 154 H	260	□	■	■	■	■	■	-	□	■
<b>PY 174</b>	rima colour Yellow 1742	200	-	-	-	-	-	-	■	-	-
<b>PY 194</b>	rima colour Yellow 1940	200	-	■	■	■	-	-	-	-	-
<b>PO 5</b>	rima colour Orange 52NC	140	-	□	■	■	-	-	■	■	■
<b>PO 13</b>	rima colour Orange 131	140	-	■	■	■	-	-	■	■	■
<b>PO 34 (tr)</b>	rima colour Orange 341 / 347C	200	-	■	■	■	-	-	■	■	■
<b>PO 36</b>	Verdcoll BML Orange 36 HG	160	■	■	■	■	■	■	-	■	■
<b>PO 43</b>	rima colour Orange 430	280	■	■	■	□	■	■	-	■	■
<b>PO 73</b>	rima colour Orange 733C	200	■	■	■	■	■	■	■	■	■
<b>PR 57:1</b>	rima colour Magenta 5710 / 5712Y	180	-	-	-	-	-	-	■	□	-
<b>PR 57:1</b>	rima colour Magenta 5710W	160	-	-	-	-	-	-	-	-	■
<b>PR 57:1</b>	rima colour Magenta 5710SBI	160	-	-	-	-	-	-	-	■	□

■ = highly recommended use □ = possible use

## Strengths

- High temperature resistance
- Consistent quality is assured by our in-house quality assurance department
- Technical support – pre & post sales
- Prompt deliveries

		Paint & Coating						Ink				
Colour Index	Grade	Heat Resistance [°C/30 min]	Powder Coating	Industrial Coating, solvent-based	Industrial Coating, water-based	Deco Coating, water-based	Automotive Coating, solvent- based	Automotive Coating, water- based	Off set	Solvent-based	Water-based	
PR 81	rima colour Red 810W	-	-	-	-	-	-	-	-	-	■	
PR 112	rima colour Red 1125 / 1129	140	□	■	■	■	-	-	■	■	■	
PR 122	rima colour Red 1221C / 1221W	200	■	■	■	■	■	■	□	-	■	
PR 144	Verdcoll Red 144 H	300	■	■	■	■	■	■	-	■	■	
PR 149	rima colour Red 1490	200	■	■	■	■	■	■	□	□	□	
PR 166	Verdcoll Scarlet 166 H	300	■	■	■	■	■	■	-	■	■	
PR 168	rima colour Red 1681	180	■	■	■	■	■	■	-	-	-	
PR 169	rima colour Red 1692Y / 1693B	-	-	-	-	-	-	-	-	-	■	
PR 170	rima colour Red 1703Y	160	-	■	□	-	-	-	■	■	■	
PR 176	Verdcoll BML Carmine 176 / 176 2T	200	■	□	□	□	□	□	■	■	□	
PR 177	Verdcoll Red 177	260	■	■	■	■	■	■	-	■	■	
PR 179	rima colour Red 1791	200	■	■	■	■	■	■	-	-	-	
PR 185	Verdcoll BML Carmine 185 2T	-	-	-	-	-	-	-	■	□	■	
PR 254	rima colour Red 2543CO / 2546PS	200	■	■	■	■	■	■	■	■	■	
PV 3	rima colour Violet 34S	-	-	-	-	-	-	-	-	■	-	
PV 19	Verdcoll Violet 19 B2 / G	200	■	■	■	■	■	■	■	■	■	
PV 23	rima colour Violet 236R / 237W / 237NC	160	■	□	■	■	□	■	■	■	■	
PV 27	rima colour Violet 277B	-	-	-	-	-	-	-	-	-	■	
PB 15:0	rima colour Blue 1507 / 1508	150	-	-	■	■	-	-	-	-	■	
PB 15:3	rima colour Blue 1233	200	-	■	□	□	-	-	■	-	-	
PB 15:3	rima colour Blue 1539 / 1536XXW	200	-	-	■	■	-	■	-	■	■	
PB 15:4	rima colour Blue 1549	200	-	■	□	□	■	□	-	■	-	
PB 60	rima colour Blue 601	300	■	■	■	■	■	■	■	■	■	
PG 7	rima colour Green 7083LF / 7087	200	■	■	-	-	■	-	□	□	■	
PG 7	rima colour Green 7058NC	-	-	-	-	-	-	-	-	■	-	
PG 36	rima colour Green 362C	200	□	■	■	■	■	■	■	■	■	
PBK 32	rima colour Black 320	200	■	■	■	■	■	■	-	-	-	

■ = highly recommended use □ = possible use

IR Reflective

# Pearlescent Pigments, Laser Marking Pigments & Glitter

AG, EL, ES, EV, FP, JR, TL, TR, TRY, TS, TV, JCeco Glitter



**The JointColor Group is an integrated manufacturing, sales and marketing organisation under the aegis of JointColor Group (HK) Co., LTD. It was founded in 2013, but has a management history dating back to 1988. On their four production sites they manufacture pearlescent pigments based on natural or synthetic mica and glass flakes as well as the synthetic mica itself and glitter.**

## Product range

The product range includes pearlescent pigments based on natural or synthetic mica, silica, or glass, which are coated with  $TiO_2$ ,  $Fe_2O_3$  and  $SiO_2$ . Thus, silver white, iridescent (rainbow), golden, cupreous (metallic) or diamond like effects can be achieved in all kinds of paints and coatings or printing inks.

## Natural mica based pearlescent pigments

The conventional pearlescent pigment range is based on natural mica. Additional surface treatments lead to further benefits, e.g., weather resistance (WR series).

## Synthetic mica based pearlescent pigments

Synthetic mica is much purer and whiter than natural mica. It has thinner platelets and a more uniform particle size distribution and aspect ratio. Pearl pigments based on synthetic mica powder show a bigger light refraction difference between the  $TiO_2$  /  $Fe_2O_3$  layers, which makes the final effect more vivid. Based on those advantages JointColor decided to build up their own synthetic mica production dedicated to pearlescent pigments only. Thus, JointColor offers a broad range of pearlescent pigment based on synthetic mica, including surface treated grades for weather resistance (WR series).

Base	Series			
	Silver White	Rainbow	Gold Lustre	Metallic Lustre
Natural Mica	AG1xx	AG2xx	AG3xx	AG5xx
Synthetic Mica	AG61xx	AG62xx	AG63xx	AG65xx
Natural Mica Weather Resistant	AG91xxWR	AG92xxWR	AG93xxWR	AG95xxWR
Synthetic Mica Weather Resistant	AG61xxWR	AG62xxWR	AG63xxWR	AG65xxWR

## Specialty products

Pearl pigments based on glass (Ca-Al borosilicate) platelets give very high glitter / diamond-like effects (AG8\*\*\* series). Colour variable effects can be achieved with synthetic mica-based grades which beneath the  $TiO_2$  and/or  $Fe_2O_3$  layer have an additional  $SiO_2$  surface coating (AG68\*\* / Multi-Colour series). By adding colour pigments (e.g.,  $Fe_2O_3$ , ultramarine blue, manganese violet, pigment black) to the surface coating, grades with interesting colour effects are produced. As the latest innovation JointColor offers pearlescent pigments based on silica platelets, which are surface coated in a vacuum process. Especially in combination with transparent colour pigments those IRISA grades give astonishing multicolour flop effects.

## Glitter products



JointColor offers a broad range of glitter products based on aluminium or polyester foils in various colours, shapes and particle sizes. The JCeco Glitter series is based on biodegradable PLA .

# Luminescent Pigments & UV / IR Pigments

## NLP



**Next Generation B.V., founded in 2003, is a producer of photoluminescent and electroluminescent pigments with its headquarters in the Netherlands. Next Generation offers non-toxic, non-radiating pigments under the brand names NLP (New Luminescent Pigments) and EL (Electroluminescent Pigments).**

## Photoluminescence

New Luminescent Pigments NLP absorb day and artificial light and emit it over a longer period of time, which lets them glow in a darker environment. NLP can be used in many applications and products such as coatings, inks, plastics, rubber, ceramics, and glass. NLP are used in toys, safety, or decorative products. They comply with EU legislation and are approved for children's toys and food contact. NLP are available in the colours yellow green, ocean blue, light blue, purple, red and white with particle sizes from 3–450 µm.

## Electroluminescence

Electroluminescence (EL) is similar in chemical composition to older luminescent pigments; it is a hybrid between old and new technology available to give light (80–120 CD) as it receives electricity. EL is available in several colours similar to photoluminescence. EL can be used in inks, coatings, plastics, and PVC sheets.

## UV / IR pigments

Next Generation offers an innovative portfolio of pigments which are visible under UV or IR light for security applications.

## Benefits

- Big variety of luminescent pigments (various particle sizes and colours)
- Available as powders or ready-made masterbatches
- Innovative electroluminescent pigments available
- UV / IR pigments for security applications



# Thermochromic Pigments

## ChromaZone<sup>®</sup>, Kromagen



**TMC Hallcrest is a pioneer of temperature sensitive, colour changing graphic technology known as thermographics with multiple manufacturing sites in the US and UK. For almost 40 years thermographics have been used to monitor or communicate temperature and solve communication or identification problems in a wide range of industrial applications.**

## Thermochromic pigments

ChromaZone<sup>®</sup> products are available as free flowing powders or slurries. They change from colour to colourless as temperature rises, with the colour reappearing when the temperature is reduced. This thermochromic effect is a highly marketable characteristic. It can be used to add security or brand protection or give a visual display of temperature change. ChromaZone<sup>®</sup> is used in various coatings to create many effects:

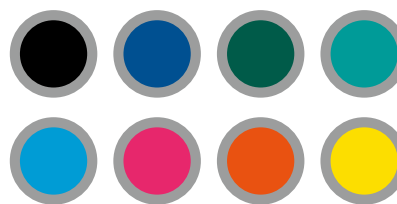
- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>■ Product labelling to indicate correct consumption temperature such as beer, wine, maple syrup etc.</li></ul> | <ul style="list-style-type: none"><li>■ Mugs that reveal images when hot drinks are added</li></ul>             |
| <ul style="list-style-type: none"><li>■ Safety warning to indicate that products are too hot to use or touch, such as depilatory wax etc.</li></ul>  | <ul style="list-style-type: none"><li>■ Finger paints that change colour when touched</li></ul>                 |
| <ul style="list-style-type: none"><li>■ "Smart" labels to show correct storage temperatures for poultry, meat, dairy foods etc.</li></ul>            | <ul style="list-style-type: none"><li>■ Papers for special effect packaging or brand protection</li></ul>       |
|  | <ul style="list-style-type: none"><li>■ Leathers and textiles to create special clothing and footwear</li></ul> |

In the Kromagen series TMC offers concentrates of irreversible thermochromic pigments in various shades. The temperature ranges from 50°C to 200° C and the colour changes gradually from colourless to the shade of the Kromagen pigment (black, blue, magenta, green-turquoise, or yellow).

## Benefits

- Reversible colour change
- Single step colour change (colour to colourless)
- Temperature range from -10 to +69°C

## Base Colours



## Hydrochromic Inks

Hydrochromic inks give an opaque colour. When wet the ink loses its colour and goes clear thus indicating the moisture.

Thermostar hydrochromic inks are available as irreversible or reversible types in various colours:

- aqueous hydrochromic flexo ink (irreversible)
- aqueous hydrochromic screen ink
- aqueous wet & reveal inks (reversible)
- solvent-based hydrochromic inks (irreversible)



# Grolman

---

Innovative Materials for Your Success

Performance Materials & Fillers

# Precipitated Calcium Carbonate CALPREC



euroMinerals was formed out of a cooperation between the two companies euroMinerals GmbH (Austria) and Cales de Llierca, S.A. (Spain), two specialists in the development and production of industrial minerals with mastery from raw material to final product, especially with regard precipitated calcium carbonate (PCC). euroMinerals has invested extensively in improved process facilities, capacity expansion and the development of new products, all of which contribute to the consolidation of the company and its recognition in the international markets.

## Zero emission strategy for the green production of inpc CALPREC within the lime Industry



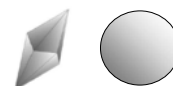
Calcinor S.A., a holding company of euroMinerals, has 5 lines of actions towards its zero emission strategy: fuel optimization, industrial process engineering, CO<sub>2</sub> capture, R&D activities, financial strategy.

## inpc CALPREC Solutions

inpc Calprec are refined, purified synthetic calcium carbonates which are produced by calcination of specially selected limestone, chosen for its very high calcium carbonate purity with the lowest levels of silica, iron, magnesia and other natural impurities. The limestone is calcined into calcium oxide and then hydrated to form a lime slurry. This slurry is precipitated to PCC under controlled conditions. The result is a PCC with very defined narrow particle size distribution and extremely good whiteness.

## Calprec Products

- Calprec PA is a non-coated fine PCC with 1.7 µm particle size and a scalenohedral shape.
- Calprec PR is a coated ultrafine PCC with 0.05 µm spherical particle size.

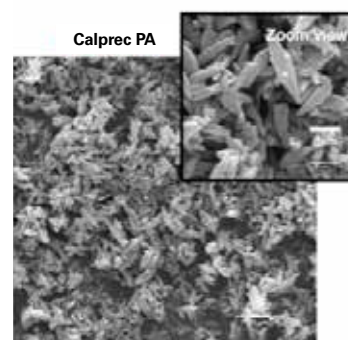


## Benefits of Calprec PA

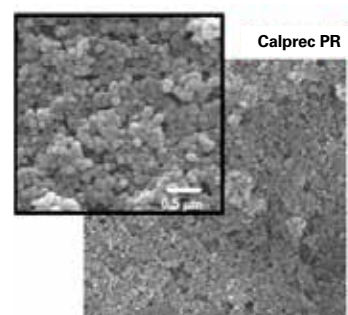
- Rheology modifier
- Prevention of sedimentation
- Processing aid
- Higher impact resistance
- Improves weatherability
- Better surface appearance
- Brilliant white colour (TiO<sub>2</sub> extender)

## Benefits of Calprec PR

- Improves processing
- Increases impact resistance
- Improves weatherability and surface appearance
- Improves gloss



REM exposure 1/5 µm



REM exposure 0.5/3 µm

# Graphite and Resilient Graphitic Carbon

## FormulaPT™ / FormulaBT™

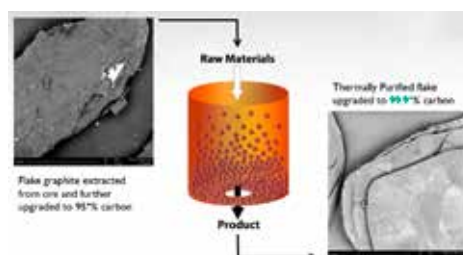
**Superior Graphite is a well-established American company, with production sites in U.S.A. and Sweden, having a proprietary, large scale, continuous Electro-Thermal Purification Technology that treats carbonaceous materials. Their unique process is used to consistently purify natural flake graphite, synthetic graphite, granulate calcined petroleum coke and other carbonaceous materials at temperatures above 2400°C.**

This purification technology can consistently produce high purity carbon  $\geq 99.98\%$ .



The production process is environmentally friendly, as it uses no chemicals, has a small footprint and low emissions, and offers a high throughput in terms of efficiency based on:

- Chemical-free process
- Green Power
- Low water consumption, with closed loop system in place
- State-of-the art, low impact, compact plants & buildings



FormulaPT™ and FormulaBT™ are high performing carbonaceous additives for tribological, conductive, antistatic and food contact applications in the CAS and in the B&C Industries. FormulaPT™RGC™ series (Resilient Graphitic Carbons) exhibit high lubricity, resiliency and purity, ensuring the topmost performance in reducing wear rates and the longest durability and protection of moving parts such as slidings, moving blocks, bearings, cylinders and hydraulics.

FormulaBT™ABG series (expanded and super-expanded graphites) exhibit high purity, high crystallinity and high electrical conductivity. They are ideal for applications such as antistatic paints & coatings, floorings, walls, ceilings, EMI shielding, Faraday cage building structures, conductive inks and coating of current collectors in lithium batteries.

Grade	Particle size d50 u	Properties	ABG1005	ABG1010	ABG1025	ABG2010
RGC 4A	4	Carbon (%)	>99.9	>99.9	>99.9	>99.9
RGC 39T	<10	Ash (%)	<0.1	<0.1	<0.1	<0.1
RGC 39A	~10	Size (um)	D50 <=7	D50 <=7-13	D50 <=7-32	D50 <=7-13
RGC 26A	~40	Scott Volume (g/cc)	<0.06	<0.06	<0.06	<0.06
		Surface Area (m2/g)	>22	<30	>16	18-30
		ICP Iron (ppm)	<100	<100	<100	<100

**rima sil** are fumed silica products with high specific surface area, either hydrophilic or hydrophobic.  
All rima sil products consist of 100% amorphous SiO<sub>2</sub> (no crystalline silica).

## Application

**rima sil** products are mainly used as **rheology modifiers** and thixotropic additives in **paints and coatings** as **anti-settling** and **anti-sagging** agents (also in all sorts of gels, pastes, plastisols or suspensions).

Coatings System	Effect	Products	Concentration
Solvent-based 2K	Thickening, thixotropy, anti-settling	rima sil FH115, FH170	0.5 - 2%
Solvent-based	Thickening, thixotropy, anti-settling	rima sil FH115, FH170, rima sil F200	0.5 - 2%
Water-based clear	Thickening, thixotropy	rima sil F200	0.8 - 2%
Water-based pigmented	Thickening, thixotropy, anti-settling	rima sil F200, rima sil FH115, FH170	0.8 - 2%



But **rima sil** can also be applied in **sealants** for thixotropic additives and for reinforcement.

Coatings system	Effect	Products	Concentration
Silicone 1K	Reinforcement, thixotropy	rima sil F150 rima sil FH115	7 - 12% 7 - 12%
Polysulfide 1K	Reinforcement, thixotropy	rima sil F150 rima sil F200	1 - 3% 1 - 3%
Polyurethane 1K	Reinforcement, thixotropy	rima sil F150	2 - 3%
Polyurethane 2K	Reinforcement, thixotropy	rima sil FH115	2 - 3%
Polyacrylate	Reinforcement, thixotropy	rima sil F200 rima sil FH115 rima sil FH170	2 - 3% 2 - 4% 2 - 4%
Butyl Rubber	Reinforcement, thixotropy	rima sil F200	1 - 2%



# Matting Silica

rima matt



**rima matt are silica products with high surface area, either hydrophilic or with hydrophobic surface treatment. All rima matt products consist of 100 % amorphous SiO<sub>2</sub> (no crystalline silica).**



## Application

**rima matt** products are applied as matting agents in coatings such as :

Matting Silica	Industrial Coating	PU Wood Coating	NC / AC Wood Coating	Automotive / Metallic	Plastic Coating	Baking Coating	Coil Coating	Leather	Inks	UV Coating
rima matt FT 50	■	■	■		■				■	
rima matt FK 35	■				■			■		■
rima matt LT 57	■	■	■		■	□			■	
rima matt LT 63	■	■	■				■			
rima matt LT HS38	■			■	■				■	■
rima matt L HS40	■	■	■		■			■	■	

□ good, ■ recommended, ■ highly recommended

# Hollow Glass Spheres

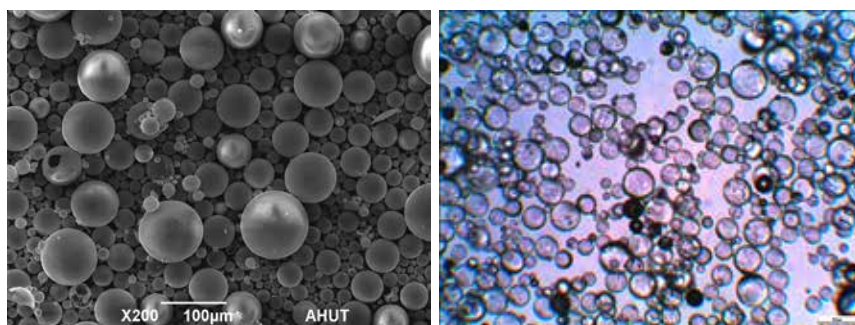
rima light



**Weight reduction is a driver in many industrial areas for state-of-the-art applications. Weight reduction can offer advantages in a number of various technologies such as adhesives, sealants, coatings and putties. Grolman offers hollow glass spheres that can allow weight reduction with additional advantages such as excellent flow properties, sanding, thermal insulation and the ability to work as spacer. rima light bubbles meet the strength requirements for various processes.**

## rima light: designed for a variety of processes and applications

Hollow spheres are microbubbles made from soda lime borosilicate glass with an internal cavity which is responsible for the density of the bubble. The wall thickness is designed according to the crush strength requirements. The melting point is high enough to allow use in oven baked 1k paints and in parts that are painted in automotive paint lines at elevated temperatures.



REM exposures of rima light hollow spheres

## Product lines

- rima light S series are designed for coatings and building applications
- rima light K series are specially made for thermosetting systems such as unsaturated polyester and epoxy system (e.g. adhesives, sealants, putties)
- rima light HS series are high crush resistant spheres for adhesive and plastic applications

## Features

- Excellent weight reduction
- Good contribution to flow
- Lubrication during spray
- Heat insulation

# Synthetic Barium Sulfate

## rima fixe



**rima fixe is synthetic barium Sulphate precipitated with a defined particle size from highly purified solutions.**

### Main characteristics of rima fixe are:

- High brightness & pure whiteness
- Very fine with narrow particle size distribution
- Low oil adsorption (low impact on viscosity)
- Good dispersibility - easy to disperse
- High density ( $\text{BaSO}_4 = 4.4 \text{ g/cm}^3$ )
- Good chemical resistance
- Low abrasiveness - free of impurities such as quartz



## Application

rima fixe is applied in many paints and coatings applications, for maximum gloss, due to its low OAN or high resistance to chemicals and outdoor exposure, like:

- Industrial coatings: ACE, aircraft, anticorrosion, automotive, can, coil, container, marine, powder
- Architectural, decorative and wood paints

Furthermore, rima fixe is used in printing inks and pigment pastes, in sealants (e.g. for thermal and dimensional stability) and in thermoplastics and elastomers (e.g. for high density or sound absorption).

Moreover, rima fixe can be applied in enamel (ceramics) or specialty paper applications, and rima fixe HD0812 is also used in lead acid batteries.

## Product overview

Grade	rima fixe N1318	rima fixe HD 0812	rima fixe SF 0811	rima fixe SF 0710	rima fixe SF 0709
d50	1.3 - 1.8 um	0.8 - 1.2 um	0.8 - 1.1 um	0.7 - 1.0 um	0.7 - 0.9 um
BaSO <sub>4</sub>	> 98.5 %	> 98.5 %	> 98.5 %	> 98.5 %	> 98.5 %
Density	4.4 g/cm <sup>3</sup>	4.4 g/cm <sup>3</sup>	4.4 g/cm <sup>3</sup>	4.4 g/cm <sup>3</sup>	4.4 g/cm <sup>3</sup>
OAN	15g/100g	15g/100g	15g/100g	15g/100g	15g/100g
Brightness	min. 98 %	min. 98 %	min. 98 %	min. 98 %	min. 98 %

# Barium Sulfate (Baryte)

rima barite



## Description

**rima barite** are ground barium sulfate products, produced from natural white barite resources of high purity. Main characteristics of rima barite products are:



- high brightness
- low oil adsorption number (OAN)
- good dispersibility -> easy to disperse
- high density ( $\text{BaSO}_4$  ->  $4.4 \text{ g/cm}^3$ )
- high chemical resistance

## Application

**rima barite** is applied in

- Paints & Coatings due to low OAN and high resistance to chemicals and outdoor exposure
- Industrial coatings like ACE, Anticorrosion, Container and Powder coatings
- Coated textiles like Tarpaulin & Canvas (for Tents or Trucks / Lorries)
- 2K-resins compounds & composites (e.g. car repair putties)
- Sealants (e.g. for thermal and dimensional stability and low OAN)
- Thermoplastics compounds with high density for vibration damping / acoustic absorption / sound deadening
- Elastomers (e.g. for higher weight)

## Product overview

	rima barite E1 micro	rima barite E5	rima barite E15	rima barite G15
$\text{BaSO}_4$ content	97-99%	97-99%	97-99%	90-92%
Brightness	96-97	92-94	92-94	80
Mean Particle Size	1.8 $\mu\text{m}$	3 $\mu\text{m}$	4 $\mu\text{m}$	4 $\mu\text{m}$
Top Cut	8 $\mu\text{m}$	10 $\mu\text{m}$	20 $\mu\text{m}$	20 $\mu\text{m}$
Moisture	< 0.1 %	< 0.2 %	< 0.2 %	< 0.1 %
Specific Weight	4.4 $\text{g/cm}^3$	4.4 $\text{g/cm}^3$	4.4 $\text{g/cm}^3$	4.3 $\text{g/cm}^3$
pH value	8.5	8.0	8.0	8.0
Oil Absorption	18 g / 100 g	12 g / 100 g	11 g / 100 g	15 g / 100 g
$\text{Fe}_2\text{O}_3$ Content	< 0.05 %	< 0.1 %	< 0.1 %	< 0.5 %
Refractive Index	1.64	1.64	1.64	1.64
Mohs Hardness	3.5	3.5	3.5	3.5

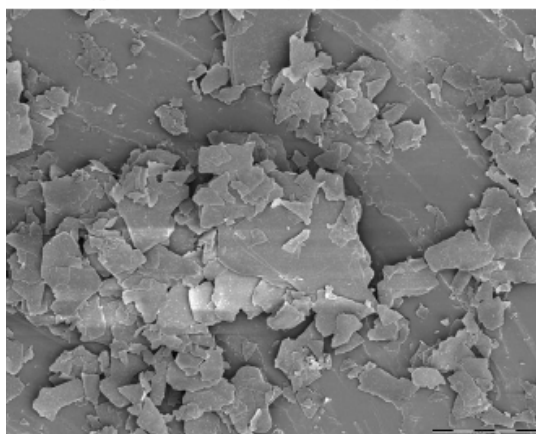
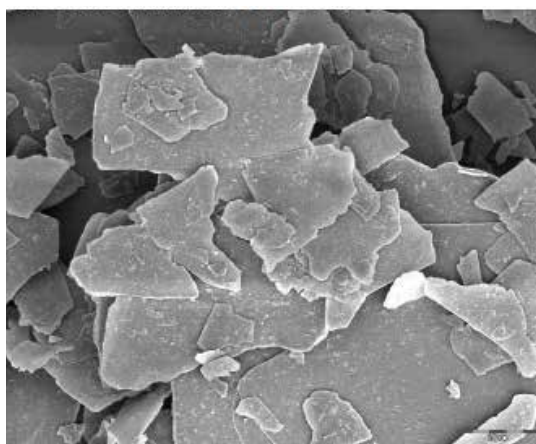


**Mica belongs to the group of lamellar, silicate minerals. The crystalline structure of mica consists of three-layer platy minerals with strong internal bonding which provides a very high chemical and weathering stability. Depending on the final application, mica needs to be milled and delaminated to the required particle size distribution and aspect ratio. Most engineered grades with a very smooth sheet surface and particle edges are obtained through wet milling. rima mica is a wet ground muscovite mica with platy and elastic particles and high aspect ratio (particle diameter/thickness).**

## rima mica applications

rima mica 200R and rima mica 300R are wet ground micas. Wet ground mica is a method of processing which gives a thin smooth particle surface with excellent sheen and slip properties. Where more demanding properties are required wet ground products give superior performance due to the higher aspect ratio, very platy structure and high elasticity of the plates.

rima mica 200R and rima mica 300R are mainly used to improve mud crack resistance and adhesion properties in high build emulsion paints and renders. Mud cracking occurs as a result of built up of internal stress within a coalescing paint or render film. Wet ground rima mica acts as a reinforcing agent to release some of the internal stress created. The recommended dosage is 5 – 10%.



SEM Pictures rima mica 200R

## Features

- Improves mud crack resistance and adhesion
- Gives smooth finish
- Excellent sheen and slip
- Improved resistance to chemicals, wear and tear and ultraviolet light
- Barrier properties
- Easy to disperse

# Circular Carbon Fibers

CF<sub>TRIM</sub> / CF<sub>FLEX</sub> / CF<sub>BASE</sub>

**C.A.R. FiberTec GmbH specializes in circular carbon fiber products for composite & compounding, concrete, textile, putties and flooring.**

Due to their excellent strength, stiffness and weight ratio, CF<sub>TRIM</sub> chopped fibers enable advanced solutions for applications where mechanical performance, light weight and structural durability are critical, whereas CF<sub>FLEX</sub> and CF<sub>BASE</sub> milled fibers satisfy electrical and thermal dissipation requirements.



CF<sub>TRIM</sub> circular carbon fibers are widely appreciated in international markets for their retained virgin properties while providing superior performance in the end applications. C.A.R. FiberTec applies the foundations of circular economy by reprocessing post-industrial streams of carbon fibers, and transform them into topmost quality performance materials.

C.A.R. FiberTec's know-how allows an effective waste-to-raw-material conversion, it is based on energy efficient processes and it does not bring any additional loading of chemicals.

With a product conversion rate of 100 % guaranteed under the GRS (Global Recycled Standard), C.A.R. FiberTec ensures a zero-carbon-fiber-waste system. The carbon footprint amounts only around 2 - 4 % in comparison with virgin carbon fiber manufacturing, and a maximum of 10 - 15 % vs. the alternative of end-of-life incineration. In terms of energy use, renewable sources account min. 61 % of C.A.R. FiberTec's power supply.

## CF<sub>TRIM</sub> – chopped fibre

Appearance: lint-free, free flowing  
Cut length: 4 mm up to 72 mm  
4 mm or 6 mm steps  
Tolerance: +/- 0.5 mm  
Bulk density: > 350 g/l



## CF<sub>TRIM SF</sub> – stable fibre

Appearance: strand/spread-out  
Cut length: up to 90 mm  
customised  
Tows yield: ≥ 200 TEX



## Benefits

- Excellent specific strength – modulus / weight performance
- Functional reinforcement, e.g. conductivity, wear resistance
- Reprocessed CF marketing advantage at virgin quality
- Excellent proven processing characteristics without bridging or deposit at various extruder feeding solutions
- Sustainable and eco-friendly products and conversion processing in compliance with ecological aspects on sustainability

# Boron Nitride

PolarTherm\*, CoolFlow\*, CoolFx\*



**Boron nitride (BN) is a soft, white-coloured additive that contributes to thermal conductivity in polymers as well as being electrically isolating. Momentive offers a variety of different products such as platelets, agglomerates and specially modified new CoolFlow hybrid types which improve mechanical properties.**

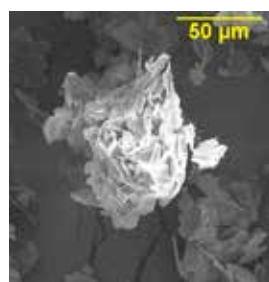
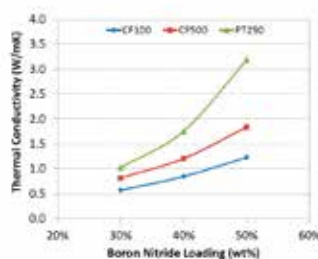
## Heat management and tribology

Heat – it's one of the major enemies of today's electronic components and assemblies. It shortens service life and threatens reliability. Every day designers are asked to produce smaller, faster assemblies making the need for heat dissipation even greater. Momentive boron nitride (BN) fillers solve tough heat problems by conducting and dissipating heat far better than other materials. Momentive BN's can be used either as such, or as performance boosters hence in synergy with other thermally conductive fillers.

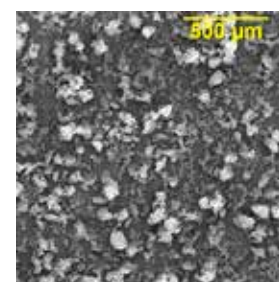
Tribology – Boron nitride is a lubricious, non wetting, inert and chemically stable material which contributes to reducing frictions. Platelets, agglomerates and hybrid grades are available in various particle sizes varying from 1µm up to 350µm:

- Platelets are often used in thin layer applications in sizes from 1 to 10µm.
- Agglomerates are used for heat management in liquid thermoset systems. These are high performance, high purity pressed agglomerates that allow easy incorporation and distribution.
- Coatings, adhesives, sealants and potting compounds can use a variety of newly developed special pressed agglomerates for excellent heat conductivity at low abrasiveness due to the low hardness of Boron nitride.

Thermal conductivity performance



Electron microscope image of pressed agglomerate



Electron microscope image of a hybrid boron nitride

## Benefits

- Heat management in adhesives, sealants and potting compounds
- Electrical insulation
- Low hardness
- White powder
- Low friction / improved tribological properties

\* PolarTherm, CoolFlow and CoolFx are tradenames of Momentive Performance Materials Inc.

**Global Graphene Group (G<sup>3</sup>) is the world's largest producer of graphene nanomaterials. As the global leader in graphene production and applications development, G<sup>3</sup> specializes in helping companies engineer graphene solutions with distinct material performance advantages.**



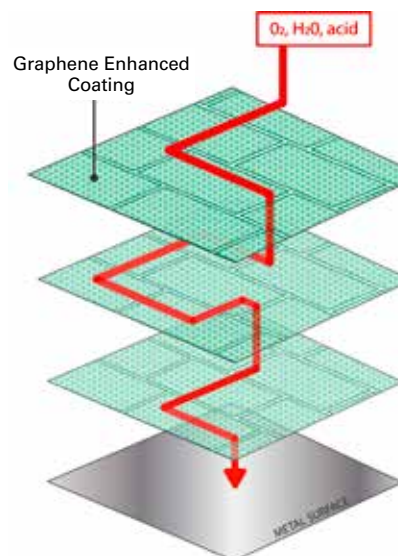
Graphene is a high-tech, multi-performance, carbon nanomaterial with unique and unrivalled properties, such as - but not limited to - thermal and electrical conductivity, superior mechanical properties, EMI shielding, lubrication and barrier properties.

G<sup>3</sup> produces a family of graphene and graphene oxide powders.

Property	Units	N002-PDR	N002-PDE	N006-PR
Type		Few-layers Graphene	Few-layers Graphene Oxide	Graphene Nanoplatelets
Carbon by wt%	%	≥ 95	70 - 90	≥ 95
Specific surface area	m <sup>2</sup> /g	400 – 800	400 – 800	20 - 30
Average aspect ratio		3000 : 1	3000 : 1	140 - 230 : 1
Thickness	nm	0.35 - 2	0.35 - 2	30 - 50
Average lateral dimension	µm	4	4	7
Carbon by wt.	%	≥ 95	70 - 90	≥ 95
Oxygen by wt.	%	≤ 2	10 - 30	≤ 4
Hydrogen by wt.	%	≤ 2	≤ 2	≤ 1
Nitrogen by wt.	%	≤ 0.5	≤ 0.5	≤ 0.2
Ash by wt.	%	≤ 2.5	≤ 2.5	≤ 2.5
Tap density	m <sup>2</sup> /g	0.01 - 0.02	0.01 - 0.02	0.1 - 0.2

## Benefits of graphene for corrosion protection

- **Mechanism:** Physical barrier protection to slow corrosion
- **Hydrophobicity:** Decreases wetting, slows corrosion
- **Conductivity:** Superior electrical conductivity  
Improves cathodic protection
- **Mechanical properties:** Improves durability  
Very flexible and elastic
- **Light absorption (UV resistance):** Improves weatherability



Non-graphene PU Coating

0.01 wt%      0.03 wt%      0.05 wt%

Graphene-PU Coating

Thickness of Coating: 60–80 µm

# China Clay (Kaolin)



**EICL is an integrated supplier of Kaolin products to the paints, coatings and ink industry, blessed with one of the purest Kaolin reserves in the World. Its state-of-the-art processing plants have been built and continuously improved on technology innovation & performance application principles. EICL has a complete range of calcined, hydrous and engineered Kaolin that adds value to water & solvent based decorative and industrial paints, as well as to printing inks.**

## Kaolin

Kaolin hydrated aluminum silicate is a unique opacifying extender. Platy structure and morphology makes kaolin best suited for paints and coatings. EICL's complete range of calcined, hydrous and engineered kaolins can add value to water or solvent based decorative industrial paints and printing inks.

Kaolin imparts the following properties in paint formulations:

- TiO<sub>2</sub> extension
- Anti-settling and anti-sagging properties
- Texture control
- Good opacity, gloss and brushability
- Excellent dispersibility

EICL Kaolin grades recommended for paints and coatings:

- High PVC: HIMATEX
- Medium PVC: HIMAFINE
- Low PVC: SUPERLUSTRE

## HIMATEX

High performance calcined kaolin for decorative matt paints.

- Titanium dioxide extension
- Opacity improvement
- Smooth and matty finish
- Cost reduction

- Pigmentary properties:
- Brightness (ISO R 457): 91
  - Mean Particle Size (sedigraph): 13
  - Specific Gravity: 2.6
  - Oil Absorption (g/100g): 55

## HIMAFINE

Ultrafine fine calcined kaolin for smooth sheen satin finish decorative paints.

- Superior Titanium dioxide extension
- Enhanced opacity and hiding power
- Cost reduction
- Improved sheen
- Smooth satin finish

- Pigmentary properties:
- Brightness (ISO R 457): 93
  - Mean Particle Size (sedigraph): 0.8
  - Specific Gravity: 2.6
  - Oil Absorption (g/100g): 75

## SUPERLUSTRE

Premium engineered hydrous kaolin for glossy solvent and water based paints.

- Excellent gloss retention
- Cost reduction
- Titanium dioxide extension
- Enhanced opacity
- Dispersion ease

- Pigmentary properties:
- Brightness (ISO R 457): 88
  - Mean Particle Size (sedigraph): 0.25
  - Specific Gravity: 2.6
  - Oil Absorption (g/100g): 42

# Flame Retardants

## Exflam MCA / MP / MPP / APP



**Wellchem is a high-tech enterprise specialised in innovation and production of flame retardants and is one of the leaders worldwide in the manufacturing and marketing of flame retardant chemicals such as:**

- Melamine Cyanurates: Exflam MCA
- Melamine Phosphate: Exflam MP
- Melamine Polyphosphate: Exflam MPP
- Ammonium Polyphosphates: Exflam APP

All such products are successfully applied in thermoplastics, thermoset, foam, adhesives, sealants and paints & coatings applications.

## Product overview

For product overview and applications table, please scan here











# Grolman Lab Services



Your technical support for success

**Every phase in the development of a new coating is important: from the selection of raw materials, the formulation and production of a new recipe, up to application tests of the final paint such as viscosity measurement and testing of anti-corrosion, optical properties, mechanical and chemical resistance. Grolman laboratories have been established and equipped to help you with this challenge.**

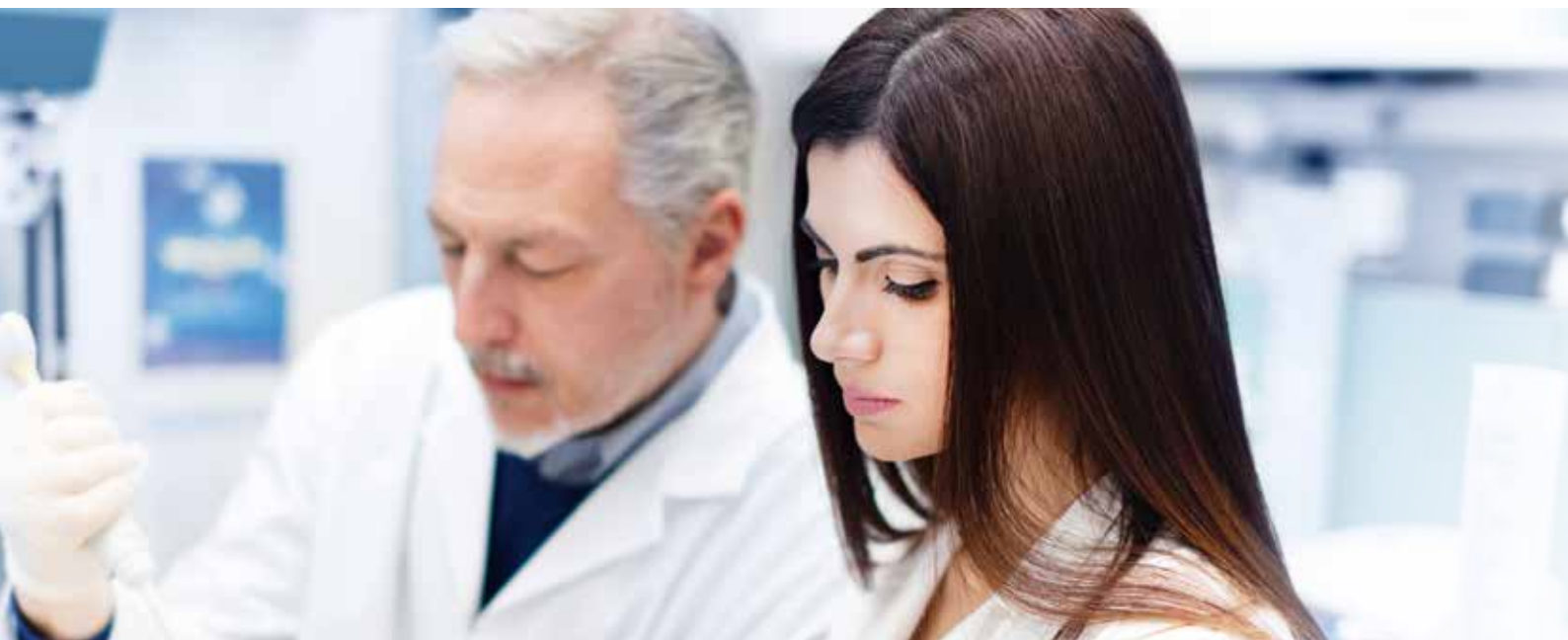
## In our lab we can:

- Provide cost-effective solutions for your technical needs
  - Improve formulations by enhancing performance or reducing costs
- Develop new products according to your specifications
- Train our sales and technical people for a better dialogue with you
- Offer testing services which include:
  - Rheological studies
  - Tests to improve the mechanical or chemical resistance of coatings
  - Optimisation of formulations for anti-corrosion
  - Measurement of opacity, whiteness and gloss on paints
  - Colour matching of specific colours

Grolman laboratories are ISO 14000 & 9001 certified and all tests are done accordingly.

Additionally, we have at our disposal a dedicated team of industry experts who are on hand to provide valuable independent testing, application and formulation advice for all products offered in our Coatings portfolio as well as regulatory support for introducing the end products into the market.

The information given in this document is based on the present state of our knowledge, all recommendations are made without any liability on our part. Buyers and users should make their own assessments of our product under their own conditions and for their own requirements. All data are typical data and cannot be basis to constitute or imply any warranty, undertaking, expressed or implied commitment from our part. No liability whatsoever can be accepted by Grolman with regard to the handling, processing or use of the product or products concerned which must in all cases be employed in accordance with all relevant laws and/or regulations in force in the country or countries concerned.



**ALGERIA**

Grolman Maghreb, SARL  
Tel +212 (522) 49 73 90  
info.ma@grolman-group.com

**AUSTRIA**

Grolman Chemikalien Handelsges. mbH  
Tel +43 (662) 87 25 62  
info.at@grolman-group.com

**BELGIUM**

Grolman Benelux BV  
Tel +32 (2) 7 25 98 73  
info.be@grolman-group.com

**BOSNIA AND HERZEGOVINA**

Grolman d.o.o.  
Tel +385 (1) 5 50 83 80  
info.hr@grolman-group.com

**BULGARIA**

Grolman EOOD  
Tel +359 (2) 9 89 76 45  
info.bg@grolman-group.com

**CHINA**

Grolman (HangZhou) Chemical Co., Ltd.  
Tel +86 (571) 86 92 43 20  
info.cn@grolman-group.com

**CROATIA**

Grolman d.o.o.  
Tel +385 (1) 5 50 83 80  
info.hr@grolman-group.com

**CZECH REPUBLIC**

Grolman, s.r.o.  
Tel +420 (2) 51 55 32 33  
info.cz@grolman-group.com

**DENMARK**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**EGYPT**

Grolman Egypt LLC  
Tel +20 2 33 35 60 31  
info.eg@grolman-group.com

**ESTONIA**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**FINLAND**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**FRANCE**

Grolman S.A.S.  
Tel +33 (4) 77 55 79 15  
info.fr@grolman-group.com

**GERMANY**

Gustav Grolman GmbH & Co. KG  
Tel +49 (2131) 93 68-01  
info.de@grolman-group.com

**GREECE**

Grolman E.P.E.  
Tel +48 (52) 379 11 41  
info.gr@grolman-group.com

**HUNGARY**

Grolman Kft.  
Tel +36 (29) 53 51 93  
info.hu@grolman-group.com

**ICELAND**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**INDIA**

Grolman India Chemical Pvt. Ltd.  
Tel +91 22 62 21 34 00  
info.in@grolman-group.com

**IRELAND**

Grolman Ltd.  
Tel +44 (1291) 62 52 36  
info.uk@grolman-group.com

**ITALY**

Grolman S.r.l.  
Tel +39 (039) 9 28 03 25  
info.it@grolman-group.com

**LATVIA**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**LITHUANIA**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**LUXEMBOURG**

Grolman Benelux BV  
Tel +32 (2) 7 25 98 73  
info.be@grolman-group.com

**MACEDONIA**

Grolman EOOD  
Tel +359 (2) 9 89 76 45  
info.bg@grolman-group.com

**MOLDOVA**

Grolman Romania  
Tel +40 (21) 7 45 60 43  
info.ro@grolman-group.com

**MONTENEGRO**

Grolman d.o.o.  
Tel +385 (1) 5 50 83 80  
info.hr@grolman-group.com

**MOROCCO**

Grolman Maghreb, SARL  
Tel +212 (522) 49 73 90  
info.ma@grolman-group.com

**THE NETHERLANDS**

Grolman Benelux BV  
Tel +31 (547) 35 70 50  
info.nl@grolman-group.com

**NORWAY**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**POLAND**

Grolman Sp. z o.o.  
Tel +48 (52) 379 11 41  
info.pl@grolman-group.com

**PORTUGAL**

Grolman, Lda.  
Tel +351 (22) 9 43 10 00  
info.pt@grolman-group.com

**ROMANIA**

Grolman Romania  
Tel +40 (21) 7 45 60 43  
info.ro@grolman-group.com

**SERBIA**

Grolman d.o.o.  
Tel +385 (1) 5 50 83 80  
info.hr@grolman-group.com

**SLOVAKIA**

Grolman, s.r.o.  
Tel +420 (2) 51 55 32 33  
info.cz@grolman-group.com

**SLOVENIA**

Grolman d.o.o.  
Tel +385 (1) 5 50 83 80  
info.sl@grolman-group.com

**SPAIN**

Grolman Iberia, S.L.  
Tel +34 (93) 7 50 67 61  
info.es@grolman-group.com

**SWEDEN**

Grolman Nordic Specialty Chemicals ApS  
Tel +45 86 72 62 00  
info.dk@grolman-group.com

**SWITZERLAND**

Grolman AG  
Tel +41 (61) 5 88 10 60  
info.ch@grolman-group.com

**TUNISIA**

Grolman Maghreb, SARL  
Tel +212 (522) 49 73 90  
info.ma@grolman-group.com

**TÜRKIYE**

Grolman Kimya Tic. Ltd. Şti.  
Tel +90 (216) 9 11 83 00  
info.tr@grolman-group.com

**UNITED KINGDOM**

Grolman Ltd.  
Tel +44 (1291) 62 52 36  
info.uk@grolman-group.com

# Grolman

International Distribution

*Let's connect:*



Grolman Group



@grolmangroup



@grolmangroup



grolmangroup

[www.grolman-group.com](http://www.grolman-group.com)

