Technical Polymer Applications
Commitment since 1884

Omya was founded in 1884 in Oftringen, Switzerland, under the name Plüss-Staufer. Gottfried Plüss and his father-in-law Adolf Staufer produced glazing putty by combining fine chalk with linseed oil. From the very start, the forefathers of Omya were committed to supplying the highest quality.

To keep their pledge, they soon acquired a chalk quarry in France and built their own chalk powder mill in Oftringen. These long-standing traditions are still valid today.

A second chalk quarry at Omey, France, led to the Omya brand name at the turn of the 20th century. A strict focus on customer needs quickly let the business expand in Switzerland and beyond.

Continuous innovation, stable ownership and a consistent long-term focus set the scene for the company’s international expansion. High quality products and excellent customer relationships have made Omya a highly regarded global brand.
About Omya

Omya is a leading global producer of industrial minerals, mainly mineral additives and pigments derived from calcium carbonate and dolomite, and a worldwide distributor of specialty chemicals.

Committed to implementing the principles of sustainability at all company levels, Omya provides value-added products and services from responsibly sourced materials to meet the essential needs of current and future generations.

Omya provides a wealth of product solutions and services that contribute to its customers’ competitiveness and productivity in multiple industries:

- Agriculture & Forestry
- Construction
- Consumer Goods
- Packaging
- Printing & Writing
- Technical Polymer Applications
- Water & Energy

Omya is present around the globe with 8,000 employees at more than 175 locations in over 50 countries.
Thinking of Tomorrow

Omya values long-lasting relationships more than short-term results. The company’s promise «Thinking of Tomorrow» is based on three commitments:

CUSTOMER CARE

Serving our customers is the core value of the Omya brand. We are committed to exceeding our customers’ expectations every day. Our teams of sales, technical and regulatory staff have a deep understanding of local markets and requirements. They provide a uniformly high level of care for our business partners around the world. Our customers can rely on the highest quality of products, delivered to their premises within the agreed time. Whenever needed, they can count on the technical advice from our dedicated team of scientists and engineers; Whether for assistance with implementation, comprehensive lab analysis or reformulation support. Reliability, commitment and quality are the values we trust to establish long-lasting partnerships.

INNOVATION

For Omya, innovation is much more than delivering new products to the market. Being placed at the very start of the value chain, we contribute to our customers’ success through a process of co-creation, providing solutions that really work and pay off. Our value creation is based on the multi-decade experience of our experts who transfer science into practice. Omya’s innovations are designed to differentiate our customers’ products from their competition and to create new value propositions.

SUSTAINABILITY

Driven by our vision and our strong value-led corporate culture, we take on our role as a partner for a sustainable future, understanding the importance of our actions and our responsibility towards nature and society. At Omya, we take a full life-cycle perspective of our products and services and their contribution to society. Translating our customers’ requirements into sustainable solutions with added value, we commit ourselves to sustainable business principles throughout the entire organizational structure – from mining and processing to management. We combine experience with innovation to minimize environmental impact, optimize logistics and ensure a safe and stable work environment for our employees.
Sustainability is the key to future success on our journey of achieving our objectives.

Carbon footprint of CaCO$_3$

314 kg of CO$_2$ equivalents emitted per ton of natural ground Calcium Carbonate$^1$ produced

$^1$Typical grade for plastic applications. SOURCE: CCA LCI coated, EU28-Turkey+Norway energy mix.
Advanced Minerals & Specialty Chemicals

ADDING CUSTOMIZED VALUE TO THE PLASTIC INDUSTRY

For our customers, we are continuously seeking for value adding solutions to enhance processes and improve properties of numerous polymer and engineered plastic applications.

Going beyond products into processes, Omya combines advanced mineral technology and expertise of more than 130 years with exclusive technical and commercial distribution partnerships. Performance polymers and additives from leading producers complement Omya’s comprehensive portfolio of calcium carbonates and dolomites, to offer our customers unrivalled market advantage.

TAILORED TO OUR CUSTOMERS’ NEEDS

With top-quality advice and a wide selection of both mineral and chemical raw materials, Omya meets its customers’ exacting demands. We discuss the desired property profile with our clients and suggest suitable combinations of components.

Together we find the best possible solution to create value-adding products, enhanced by Omya.
PUSHING BOUNDARIES

Our innovations boost established applications and open up new markets

At Omya, we relentlessly push the boundaries of established applications and introduce novel products to open up new markets by investigating additional mineral modifiers, innovative formulations and new technologies. Our expertise enables us to address all aspects of the supply chain from resin and machinery manufacturers to compounders, convertors and the OEMs.

Mineral modifiers produced by Omya significantly enhance processes, improve mechanical properties in numerous plastic applications, contribute to reduce formulation costs and energy consumption and in addition, lower the carbon footprint of the end product.
Technical Service

SOUND ADVICE ON PERFORMANCE & COST OPTIMIZATION

For decades, Omya has cultivated a tradition of focused and dedicated technical service. This track record has given Omya the technical experience and skills to help customers continuously add value by improving their processes, applications and final products. Our customers often consult Omya for advice on complex problems, knowing that with our support they will find and rapidly implement sound technical solutions regarding formulation and processing.

State-of-the-art service labs and departments, including analytics, microscopy, microbiology, quality control and regulatory affairs management provide additional support, not least in problem identification and trouble shooting. The lab methods include electron microscopy with elemental analysis, optical and near-field laser microscopy, spectroscopy, trace element analysis, chromatographic characterization as well as crystallographic analysis.

CUSTOMER CARE

We provide on-site technical advice to our customers around the globe as well as technical training tailored to the requirements of their employees.

On our pilot lines at our Swiss headquarters, we can compound customer formulations and run processing trials for profile, injection molding, sheet, blown film, cast film or oriented film while our laboratories characterize the products’ mechanical, thermal, rheological or membrane properties. Additional service hubs in America and Asia complement to match with local needs.
Film

Omya Calcium Carbonates can boost the output of compounding and film processing lines through increased thermal conductivity. The high-purity minerals guaranty excellent thermal stability of the films. Well-controlled particle size distribution and excellent coating properties lead to improved impact strength and tear propagation as well as higher stiffness. This allows a reduction in film gauge, leading to optimized formulation costs.

Breathable & Oriented Film

Omya Calcium Carbonates act as functional additives to provide the desired membrane properties in breathable and oriented film. As a result of our advanced mineral processing technologies, uniform microcavities form around the very fine carbonate particles, generating breathable films. In oriented films our products reduce density and increase opacity. We are happy to demonstrate our Carbonates’ benefits on our pilot cast, blown and stretching film lines.

Benefits

BLOWN & CAST FILM

- Higher productivity
- Improved tear resistance & toughness
- Down-gauging option
- Better homogeneity
- Enhanced machine uptime

BREATHABLE FILM

- Controlled water vapor permeability
- High water column
- Exceptional processability
- Improved thermal stability during processing

ORIENTED FILM

- Reduced film density
- Increased opacity
- Enhanced gloss

CALENDERED FILM

- Increased stiffness & hardness
- Better tear resistance
- Better thermal deformation stability
Sheet

Omya Calcium Carbonates significantly improve the stiffness of polypropylene and polystyrene, allowing for substantial reduction in sheet gauge while maintaining top load and thus leading to optimized formulation costs. Special grades are available for applications where high whiteness is required.

**Speed up Processing**

In polypropylene sheets, the stiffness and thermoforming properties are shifted towards polystyrene. The high thermal conductivity of Omya Calcium Carbonates allows to speed up extrusion, sheet processing and thermoforming. The rigid calcium carbonate particles lead to more isotropic physical properties, lower shrinkage and improved forming accuracy.

**Benefits**

- *Increased stiffness*
- *Down-gauging potential*
- *Higher extruder output in sheet extrusion & thermoforming*
- *Lower shrinkage*
- *More isotropic physical properties*
- *Improved forming accuracy*

Woven Tape

Tape production for raffia bags benefits from the use of fine-ground and treated Omya Calcium Carbonates, which provide superior mechanical properties and improved economics. Omya Calcium Carbonates are used in PE and PP woven bags, weaving tapes and tarpaulins to offer anti-splitting and anti-fibrillation effects. Their purity guaranties high UV-stability.

**Achieve High Mineral Levels**

Special grades allow higher addition levels. Coating and particle size distribution of specific Omya Calcium Carbonates are optimized to achieve high mineral levels in polyolefin masterbatches.

**Benefits**

- *Improved economics*
- *Antisplitting & anti-fibrillation functionality in oriented polypropylene*
- *Increased stiffness*
- *Controlled water carry-over*

Specialty Chemicals

VALUABLE SYNERGISTIC EFFECTS

Thanks to our global distribution network, Omya is a one-stop shop for minerals and complementary products.

FOR POLYOLEFIN APPLICATIONS WE OFFER:

- *Polymers*
- *Additives & masterbatches*
- *Pigments*
- *Processing aids*
Molded Products

Omya Calcium Carbonates are used in molding applications, such as blow, injection and roto molding to produce bottles, containers and technical parts by offering substantial performance and cost benefits. The high thermal conductivity of Omya Calcium Carbonates leads to a significantly faster cooling of the molded products. For every percent of mineral added, the overall cycle time can be reduced by approximately one percent.

Substantial Cost Benefits
In addition, the use of Omya Calcium Carbonates increases stiffness and environmental stress cracking resistance (ESCR) which allows to reduce wall thickness of blow molded articles and save material costs. In injection molding the isotropic shrinkage is used to reduce warpage. Tailor made molds for calcium carbonate modified plastics allow substantial material cost benefits.

Benefits

BLOW MOLDING
- Reduced cycle time
- Increased flexural modulus
- Sustained top load & drop impact at reduced gauge
- Improved ESCR

INJECTION MOLDING
- Reduced cycle time
- Improved impact strength
- Less & more uniform shrinkage

ROTO MOLDING
- Reduced cycle time
- Increased stiffness

Fiber & Nonwovens

Omya Calcium Carbonates enable manufacturers to substantially reduce raw material costs and improve the quality of nonwoven fabrics in terms of improved aesthetics and product features such as soft touch, antiblocking or higher opacity.

Benefits

NONWOVEN FABRIC
- Cost reduction
- Soft touch
- Improved aesthetics
- Higher opacity
- Antiblocking effect

PROCESSING
- No spin beam clogging
- No deposits at the spinning nozzles (inside + outside)
- Long machine uptime

INNOVATION

Omyafiber® is an innovative mineral modifier, developed especially for the fiber and nonwoven market, offering advantages in nonwoven performance, processing and raw material economics. It features a tailored particle size and particle size distribution, as well as a new proprietary surface treatment, resulting in excellent dispersion properties.
Pipe

Omya Calcium Carbonates are used in numerous PVC and PO pipe applications. The most significant are non-pressure, structured-wall and solid-wall sewerage pipes as well as corrugated pipes. Our mineral additives are also used in PVC pressure pipes and PVC in-house applications.

**Substantial Cost Benefits**
Our range of coated products offers an excellent dispersion in the polymer and allows high mineral loadings. This is the preferred solution to achieve substantial material cost savings.

**Benefits**
- **Substantial cost reduction**
- **Improved processing**
- **Increased ring stiffness**
- **Homogeneous foam structure (structured wall-pipes)**

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**INNOVATION**

Omya’s Direct Addition Technology adds calcium carbonate powder directly to the extruder and avoids segregation of PVC dry-blend and calcium carbonate powder during the pneumatic conveying. This innovative solution increases the possible mineral loadings in non-pressure PVC pipes and the hot-cold mixing capacity and provides energy savings.

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**CUSTOMER CARE**

Customers interested in testing our Direct Addition Technology on their own production process, request our mobile pilot equipment which can be installed on-site at all production lines. Our technical service specialists will assist with customized trial runs. Together we will analyze the test results to help implement an optimized permanent solution.
We partner with the entire value chain to differentiate end products.

- High gloss and whiteness
- Good UV-resistance
Profile

Our natural Calcium Carbonates have been indispensable ingredients in PVC window profile formulations for decades. In particular, they increase the profiles’ stiffness and improve their impact strength. The higher stiffness allows to reduce the wall thickness and therefore leads to material savings. Omya Calcium Carbonates also provide substantial benefits in processing: melt strength is increased and the high thermal conductivity of the mineral shortens cooling time which in turn leads to higher output.

Setting the Benchmark

For decades Omya Calcium Carbonates are the benchmark for PVC profiles. Omya offers a large portfolio, ranging from established qualities to innovative ultrafine, treated grades that provide top-level optical and mechanical benefits and an excellent cost-performance ratio for high-quality PVC profiles. We are happy to demonstrate the performance of our various Calcium Carbonate grades on our state-of-the-art extrusion line.

Benefits

WINDOW PROFILES
- Increased stiffness
- Process enhancement
- Substantial cost reduction
- Excellent surface gloss

TECHNICAL PROFILES
- Increased stiffness
- Good processing even at high loadings
- Reduced wall thickness
- Substantial cost reduction

INNOVATION
Improved gloss for PVC window profiles with Hydrocarb® XP

Our new Hydrocarb® XP has been developed specifically for the PVC profile industry. The new quality allows to significantly increase the mineral loading in window profiles without reducing gloss. The proprietary manufacturing process of Hydrocarb® XP creates a new generation of Omya Calcium Carbonates with outstanding dispersion performance, resulting in superior surface finish and high impact values. Hydrocarb® XP is the new benchmark for PVC window profile producers.
Omya natural ground Calcium Carbonates derived from chalk, limestone or marble are the preferred fillers in plasticized PVC cable applications to significantly reduce formulation costs. Our products are applied with high mineral loadings for low voltage cables (<1 kV) and with lower dosage for mid voltage cables (1-10kV).

**Enhanced Electrical Resistivity**
Formulations and recommended mineral levels are individually adjusted to match the specific requirements of insulation, sheathing and bedding compounds. Omya offers a wide range of high-quality treated and untreated grades. Functional qualities with hydrophobic surface treatment offer additional advantages in terms of volume resistivity, dispersion and lower adsorption of other formulation components such as plasticizers and stabilizers.

**Benefits**
- Improved volume resistivity
- Superior mechanical properties
- Better heat conductivity
- Lower plasticizer/stabilizer adsorption and better dispersion with coated grades
- Substantial cost reduction

**Structure of a Cable**
Flooring

Omya Calcium Carbonates are mainly used in soft and rigid PVC-based flooring systems such as calendered systems, luxury vinyl tiles (LVT) and PVC plastisol-based cushion vinyls (CV).

High Mineral Levels
Due to their superior quality Omya Calcium Carbonate levels can be very high and reach 50 percent or more in LVT. In addition to substantial cost savings, our minerals will improve stiffness, haptics or weight depending on the selected application and type of grade.

Benefits
- Superior mechanical properties (e.g. stiffness)
- Lower plasticizer/stabilizer adsorption & better dispersion with coated grades
- Substantial cost reduction

Plastisol

PVC plastisol-based products for wallpaper, tarpaulin, artificial leather or automotive underbody sealants contain Omya Calcium Carbonates to improve the product’s mechanical properties such as stiffness, haptics, ageing resistance and processing in addition to substantial cost reductions.

Based on recommendations from our experts, customers choose the optimal grade to positively impact the paste’s rheology during processing. In automotive sealing, for instance, very fine coated grades are used to obtain a defined yield point when the paste is applied by spraying. Our portfolio includes a range of ultrabright Calcium Carbonates that allow superior color intensity and variety.

Benefits
- Increase stiffness & hardness
- Improved haptics
- Superior rheology during processing
- Very bright grades for color intensity
- Substantial cost reduction

Specialty Chemicals

PARTNERSHIPS FOR GROWTH
Omya closely cooperates with leading chemical brands to introduce the latest product developments.

FOR PVC APPLICATIONS WE OFFER:
- Additives
- Pigments
- Processing aids
Thermoset

In thermoset systems, Omya Calcium Carbonates benefit in particular unsaturated polyester resins (UP) in bulk or sheet molding compounds (BMC / SMC) where calcium carbonate levels are usually very high.

Reduced Cost
A high level of Omya Calcium Carbonates in thermoset resins allows substantial cost savings and improves significantly the mechanical properties like shrinkage and dimensional stability. Other thermoset systems such as epoxy or melamine resins also achieve cost and performance benefits from using our products. Our technical specialists support producers to select the appropriate type of Calcium Carbonate to optimize paste viscosity during processing while taking into consideration the packing density effect at very high loadings. For applications requiring an ultra-smooth surface such as «Class A» in the automotive, there is a broad range of high-quality fine grades.

Benefits
- Superior rheology properties
- Optimum packing density
- Low shrinkage
- High dimensional stability
- Significant cost reduction
- High-quality grades for automotive «Class A» surfaces

Polyurethane (PUR) foam

Producers of flexible polyurethane (PUR) foams appreciate Omya Calcium Carbonate powders not only for their cost advantage but also for their performance and process improvements. Our minerals positively impact the foaming process and the final foam properties and for instance allow for higher compression.

Homogeneous Cell Structure
Omya Calcium Carbonates improve the dispersion of the blowing agent in the matrix and provide a better distribution of the heat generated by the chemical PUR reaction. As a result, our customers benefit from a more homogeneous foam cell structure. Constant foam density in turn yields additional cost savings.

Benefits
- Homogeneous size distribution of foam cells
- Faster cooling down of exothermic reaction
- Better compression properties of foam
- Substantial cost savings
Rubber & Elastomers

For rubber applications Omya Calcium Carbonate is the preferred option to optimize the cost-performance ratio and the products’ final properties. Our products allow high mineral loadings without process impairment and as a result are widely used in tires, conveyor belts, cables, coatings, gaskets, sealing, hoses, profiles, linings, rollers, molded rubber goods and dedicated compounds.

Benefits

- Lower compound cost
- Modified elasticity
- Improved mold release

FOR RUBBER & ELASTOMER APPLICATIONS WE OFFER:

- Elastomers
- Additives & masterbatches
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