

# PLASTICS



**IMERYS**  
*Performance Minerals*



**WORLD  
MINERALS**

# A WORLDWIDE INDUSTRIAL GROUP

**IMERYS** IS THE WORLD'S LARGEST PRODUCER OF WHITE INDUSTRIAL MINERALS, WITH A NETWORK OF PLANTS ACROSS SIX CONTINENTS INCLUDING MAJOR SITES IN THE UK, BELGIUM, FRANCE, ITALY, SPAIN, USA, BRAZIL, AUSTRALIA, JAPAN AND CHINA.

**IMERYS** SUPPLIES MINERALS TO A WIDE RANGE OF INDUSTRIES, INCLUDING POLYMERS, RUBBER, PAINT, PAPER AND CERAMICS. SPECIALIST DIVISIONS SERVE EACH INDUSTRY, SO THAT OUR CUSTOMERS ALWAYS DEAL WITH PEOPLE WHO UNDERSTAND THEIR BUSINESS. THIS IS SUPPORTED BY AN ABSOLUTE COMMITMENT TO QUALITY TO ENSURE THE CONSISTENCY AND RELIABILITY OF OUR PRODUCTS AND SERVICES.



**IMERYS** is a major supplier of calcined kaolins, silane treated calcined kaolins, kaolins, dolomite, diatomite, mica, alumino silicate and both untreated and surface-treated calcium carbonates to the European and global plastic industries. Strong technical understanding of our products and their plastic-based applications complements the natural value of the minerals we supply.

**IMERYS** investment in product and application development is a clear commitment to our customers in the plastics industry.

**IMERYS** has a proven history of close technical collaboration with plastics compounders and processors that has led to an in-depth understanding of the mineral requirements of the plastics industry.

- Our industry focused team is dedicated to providing innovative commercial and technical solutions to our customers.
- Our European product and application development laboratories in the UK are well equipped and staffed to meet the technical requests of our customers.
- Our technical personnel have an established track record in the development of products for the plastics industry and an in-depth understanding of minerals for polymer applications.

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# HIGH QUALITY MINERAL ADDITIVES

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IMERYS additives can be used in a whole range of applications in performance plastics products, improving physical properties, processing and cost of the final product, in diverse applications.

Backed by extensive applications and research and development labs, we are able to provide guidance on how to best compound our materials into final applications.

A diverse mineral portfolio enables a whole range of benefits to be delivered to the final product, to ensure the most cost effective formulation to be delivered.

## PROCESSING IMPROVEMENTS

In polymer processing the addition of mineral additives can bring significant processing improvements via a number of mechanisms. The introduction of minerals to a polymer melt can affect the rheology, the homogeneity and also in some cases lubricate the process. The addition of minerals will also typically lead to a faster cooling resulting in a potential increase in productivity.

Further benefits can be gained with relatively small additions resulting in reduced die build up and plate out in PVC systems and other extrusions reducing the level of scrap and down time.

## MINERALS FOR SUPERIOR PERFORMANCE IN FILM APPLICATIONS

Mineral addition in film application is used for a number of purposes with the final film properties being influenced by the properties of the mineral grade. Mineral uses include, cost reduction, improved mechanical performance, antiblock applications, enhanced opacity, and use in breathable film and nonwoven applications.

Mineral grades are offered for use in the following resin types: L/LLDPE, HDPE, PP, EVA, PET, PA, PLA and other bio-resins.

## ENHANCED PHYSICAL AND MECHANICAL PERFORMANCE

IMERYS minerals can be used to enhance the physical and mechanical performance of a material influencing both its aesthetic and mechanical properties. The introduction of different minerals from the IMERYS portfolio can result in improved properties, for instance impact resistance or flexural strength, and also influence the colour, opacity and gloss of the part; for instance kaolin with their platy structure can improve the scratch resistance and anti-curl properties of PVC systems..

## IMPROVED ELECTRICAL PROPERTIES

The use of certain products with superior dielectric performance and optimal surface treatment can lead to excellent electrical insulation, especially in PVC cable applications.

## OTHER ADVANTAGES

In bulk and film applications the use of many IMERYS minerals will give a high brightness white pigmentation which can be used for TiO<sub>2</sub> extension. IMERYS also supplies light scattering grades yielding high opacities and good colour designed for such applications.

# ADDING VALUE THROUGH MINERALS

## QUALITY ORE RESERVES

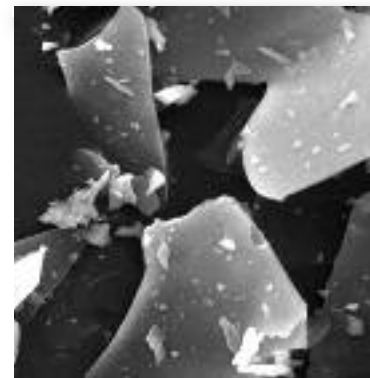
IMERYS has detailed knowledge of the specific properties of each mineral and the applications that provide most value. The refining and conversion tools used to purify minerals and adapt them to precise industrial applications are adjusted for optimum functionality for a given mineral and grade.

## PRECISION PROCESSING

At state-of-the-art plants crude ore is engineered to carefully controlled specifications such as particle size, specific surface area, colour and pH. The unique nature of our deposits and processes gives precise functional properties when selected for specific applications.

## QUALITY CONTROL

IMERYS has developed a sophisticated method of analysing and benchmarking its minerals based upon standard and customised tests. Our quality management systems are ISO 9001 certified and, through our individual team activities, we seek to continually improve their effectiveness to enhance customer satisfaction and to remain the leader in quality in our industry.



## ADDING VALUE THROUGH RESEARCH

Our experienced scientists and engineers work closely with our customers' plant and production managers in a wide range of industries. We offer problem solving advice for increasing productivity or improving product quality utilising existing grades, innovative solutions or customised new product development. Our application development laboratories conduct basic and applied research, product development, process improvement and pilot plant operations.

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## KEY APPLICATIONS & BENEFITS

| BENEFIT                       | KAOLIN | CALCINED KAOLIN | TREATED KAOLIN | FLASH CALCINED KAOLIN | ALUMINO SILICATE | DIATOMITE | MICA | COATED CaCO <sub>3</sub> | UNCOATED CaCO <sub>3</sub> |
|-------------------------------|--------|-----------------|----------------|-----------------------|------------------|-----------|------|--------------------------|----------------------------|
| Surface finish                | ●      | ●               | ●              |                       |                  | ●         | ●    | ●                        | ●                          |
| Electrical insulation         |        | ●               |                |                       |                  |           |      |                          | ●                          |
| Chemical coupling             |        |                 | ●              |                       |                  |           |      |                          |                            |
| Mechanical                    | ●      | ●               | ●              |                       |                  |           | ●    | ●                        |                            |
| Barrier                       | ●      |                 |                |                       |                  |           | ●    |                          |                            |
| Processing                    | ●      | ●               | ●              |                       | ●                |           |      | ●                        |                            |
| Formulation cost optimisation |        |                 |                |                       |                  |           |      | ●                        | ●                          |
| Titanium dioxide extension    |        |                 |                | ●                     |                  |           |      | ●                        |                            |

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