

ACTIVITY REPORT

2018/2019



IMERYS
TRANSFORM TO PERFORM

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The world leader in mineral-based specialties for industry

The world's leading provider of mineral-based specialties for industry, Imerys delivers high value-added, functional solutions to a great number of industries, ranging from process manufacturing to consumer goods. The Group draws on its understanding of applications, technological knowledge and expertise in materials science to deliver solutions by beneficiating its mineral resources, synthetic minerals, and formulations. Imerys contributes essential properties to customers' products and their performance, including heat resistance, hardness, conductivity, opacity, durability, purity, lightness, filtration, adsorption, and water repellency. Imerys meets ambitious targets to develop responsibly, focusing on people, the environment, business conduct, and corporate governance.

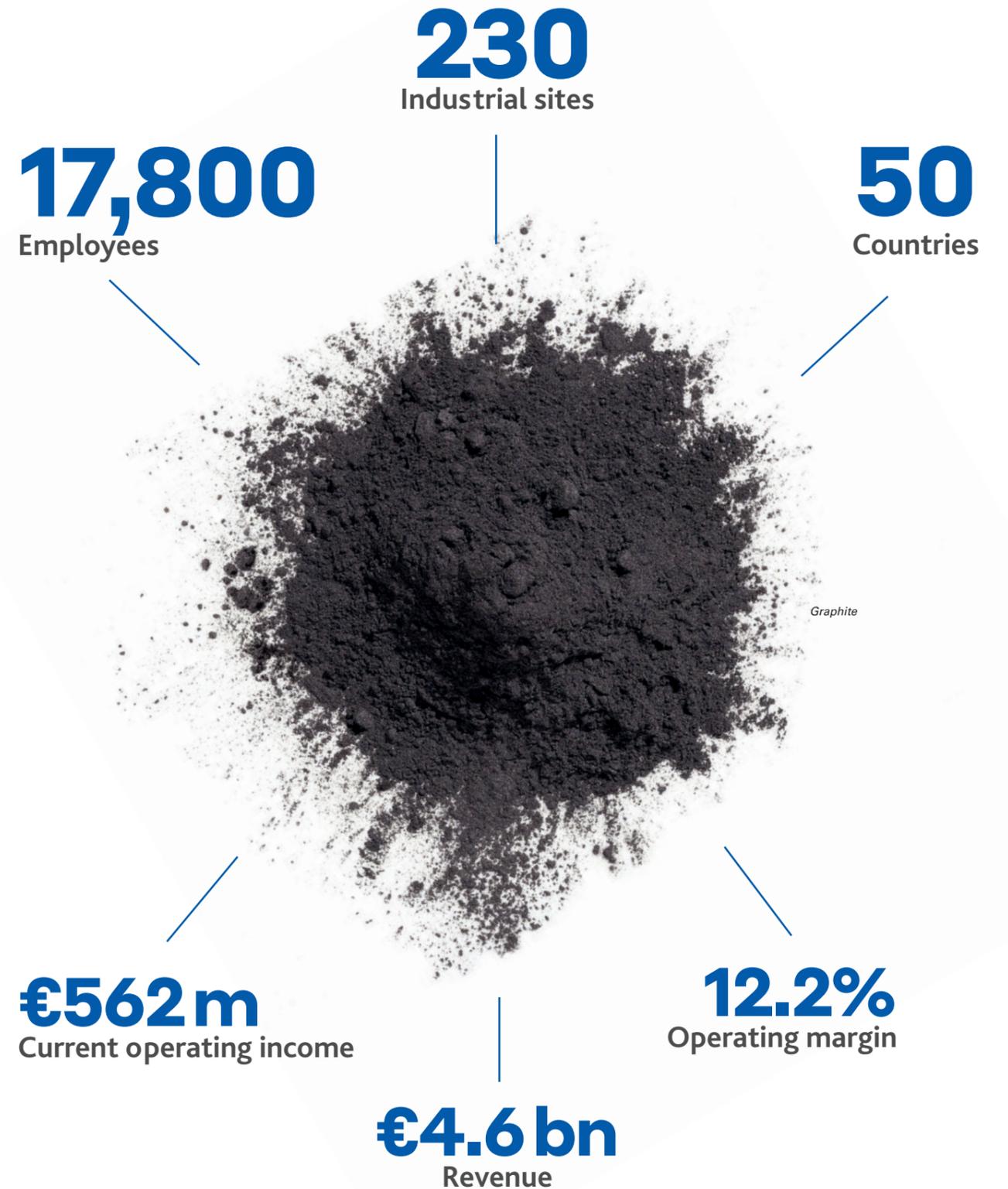


Be



a leader

Imerys keeps strengthening its position as world leader in mineral-based specialties by delivering value-added solutions formulated to meet the technical specifications of customers around the world. Unparalleled knowledge of applications, scientific expertise and technical know-how, along with best-in-class operations deliver continued revenue growth and increased net income.



In 2018



INTERVIEW

CONRAD KEIJZER, IMERYS CEO

It has been almost a year since you were appointed CEO. What were your first impressions when you joined?

I was immediately impressed by our people, they create a unique entrepreneurial culture with their high levels of engagement and ownership. We enjoy long-term customer relationships and Imerys is recognized as *the* global leader of industrial minerals with innovative products for the industry, world-class assets and a robust financial track record. I also saw how well integrated our operations are into their local communities, economies and surroundings.

What has changed since?

It's an exciting moment in the Group's history. We have updated our strategy and will be focusing even more on our customers to drive profitable growth. In 2018, we achieved respectable financial results, even though some of our markets slowed down in the second half of the year. We further refocused our business portfolio on mineral-based solutions through the divestment of our roof tile business. We progressed on our key priorities, such as the I-Cube industrial continuous improvement program, market-driven innovation, and implementing our single ERP platform, Make IT#1. We carried our first company-wide Net Promoter Score survey of more than 10,000 customer contacts which gave us meaningful feedback on how to drive organic growth.

At the end of last year, we announced a new organization that is more customer-centric, simpler and more efficient, Imerys Connect and Shape. The appointment of a new Executive Committee, with business leaders who have a distinguished track record in the company, has generated a lot of positive energy. We are building the Imerys of tomorrow, building on our entrepreneurial spirit, to support our customers in the best possible ways.

Why did you decide to set up this new organization and what are the main expected changes?

Our environment is increasingly competitive, with customers looking for more tailored products and services. We are building a framework organized around markets rather than products. Our new operating model will improve our customers' day-to-day experience, better leveraging our scale while reducing our complexity, and providing all of our employees with more development opportunities. Our ambition is to build on our leadership position to become the *truly* preferred partner of our clients, providing unique solutions and offering access to our full portfolio of minerals.

The Group has re-organized itself around two segments grouping five newly created business areas gaining in efficiency and responsiveness. With this change, we have created clear accountability for each of our customer segments with the objective to deliver organic growth. We deepen our relationships with our customers through key account management, to innovate more with them, and to enhance our application know-how and technical support.

Excellence in the way we operate, engaging our partners and empowering our people to make faster decisions, is how we will drive performance. We would like to make Imerys an even more rewarding company to work for.

Can you give us a snapshot of Imerys at the end of 2018?

We finished the year with an increase of 6.8% in revenue, driven by the successful integration of Kerneos. This acquisition has made us the world leader in high-performance calcium aluminate binders and enables us to expand in the growing markets of building chemistry. Our net income from current operations was up 6.5%, in line with our guidance, despite challenging market conditions. Our cash-generative business model delivered a solid net current free operating cash flow of 286 million euros. We have significantly strengthened our balance sheet following the timely divestiture of the Roofing division, which was our last exposure to building materials.

PERFORMANCE MINERALS

Europe Middle East Africa (EMEA)
Americas
Asia Pacific (APAC)

Plastics
Paints & Coatings
Filtration
Ceramics
Mobile energy
Paper & Board

HIGH TEMPERATURE MATERIALS & SOLUTIONS

High Temperature Solutions

Refractory Solutions
Foundry
Metal flow

Refractory Abrasives & Construction

Refractory Materials
Abrasives
Building chemistry

More than
100
ACQUISITIONS
over 20 years to enlarge our tailored mineral-based solutions offer, consolidate our positions and enter new markets and geographies.

6.8%
REVENUE INCREASE

6.5%
NET INCOME
from current operations increase

€2.15
DIVIDEND PER SHARE

All data are for 2018

2018 was a good year. However, I understand there were also some challenges.

Indeed, we faced some challenges and our teams responded quickly and decisively. First, we withdrew from the ceramic proppants business in North America, due to lower demand resulting from a shift in fracking technology. We also decided to implement a "care and maintenance program" for our loss-making natural graphite assets in Namibia, and we refocused our Graphite & Carbon activities. We experienced a significant increase in the number of claims filed against our North American talc subsidiaries and their projected defense costs in the future increased dramatically.

This situation led them to seek in February 2019 the special US legal protection of Chapter 11 for the permanent resolution of local historic talc-related liabilities. While taking action to ring-fence these liabilities, the Group continues to believe that the US talc-related litigation is without merit, as the safety of talc has been confirmed by dozens of peer-reviewed studies and multiple regulatory and scientific bodies.

How does Imerys respond to increasing expectations in terms of Social and Environmental Responsibility?

Imerys has always been conscious of its role in society. On my first day as CEO, we reviewed the new Group charters on Health & Safety, Corporate Social Responsibility (CSR) and Diversity & Inclusion. For us, our responsibility goes way beyond mere compliance with legal obligations. It is about taking responsibility for our impacts on society and the environment and creating shared value in all that we do. Safety remains our top commitment. Our business involves operating large earthmoving equipment and machinery, working at heights and with electrical systems. Safety isn't just our first priority, it's a core value underpinning everything we do.

In 2018, we launched SustainAgility, our new CSR program, which is focused on empowering our people, caring for our planet, and building our sustainable future. Imerys is not just a member of the United Nations Global Compact; we have also aligned our CSR program to contribute to the United Nations Sustainable Development Goals. We are also reaching out and working with external partners, such as the UMS 2006 Patrimoine Naturel, a natural heritage umbrella bringing together the National Museum of Natural History, the French Agency for Biodiversity and the National Center for Scientific Research (CNRS), with whom we have signed a biodiversity and conservation agreement. This organization is at the forefront of biodiversity research and will assist us in developing our global program and strengthening our scientific knowledge of biodiversity subjects at our sites. Imerys also committed to the act4nature initiative that has been launched by Entreprises pour l'Environnement (EpE) and other business partners with the aim of mobilizing businesses to protect biodiversity.

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Safety isn't just our first priority, it's a core value underpinning everything we do. ///

What are your views on making Imerys even more sustainable?

I chair a dedicated CSR steering committee with several members of the Executive Committee where we review sustainability topics from all relevant angles. Through our SustainAgility program we are focusing on systematic continuous improvement of our non-financial performance across the entire Group, and that is key to our sustainability. We are committed to reducing our greenhouse gas emissions and contributing to the transition to a low carbon or carbon-free economy. We are signatories of the French Business Climate Pledge and have committed to setting our targets through the Science Based Targets initiative. But our program goes beyond our commitment to reduce our environmental footprint; it is about providing the best possible working conditions for our people, about working with our value chain partners and about having sustainable products. It is about diversity and inclusion, and engaging with local communities. We have a long history of fostering positive changes and making tangible impacts that we can be proud of. More than ever,

it is key that we lead the industry, by insisting on best-in-class operations and continuing to contribute to local socio-economic development through our presence. Going beyond our operations, Imerys is committed to developing innovative market-driven solutions that support the growth of the Group and deliver solutions to society. In 2018, Imerys launched an assessment tool in line with the World Business Council for Sustainable Development (WBCSD) framework for Portfolio Sustainability Assessments (PSA). By applying such an approach to assess our products, we can quantify their environmental and social impacts and objectively measure the sustainability of Imerys' portfolio.

You mentioned diversity. What steps is Imerys taking?

We have a great opportunity with the organizational redesign to appoint teams that are truly diverse in terms of gender, nationality, background, education, and life experiences. We are looking for a step change for improving diversity and inclusion. While the number of women within the Group,

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We value differences, not only because they help us do better business, but because they are the foundation of the company culture we believe in. ///



INTERVIEW

CONRAD KEIJZER, IMERYS CEO

and represented within the senior management, is in line with industry statistics, we are confident that we can do more to promote gender equality at all levels within our organization. Likewise, we want to have an even broader representation of nationalities within our management teams going forward. Imerys should be a company where you can be yourself, where you are respected and listened to, whatever your background. We value differences, not only because they help us do better business, but because they are the foundation of the company culture we believe in. And, as CEO, I am committed to making progress on this, as are all the members of our Executive Committee.

Going forward, what are your expectations for the year to come?

First of all, it will be about embodying and inspiring the teams to embrace the occurring changes through our Imerys Connect & Shape program.

The new teams will face exciting opportunities to develop their skills and be closer to our customers' needs. As for the business, we continue to still see a challenging trading environment with a challenging comparison basis in the first half of the year. In this context, we have increased our focus on improving our cost base and maintaining our ability to generate cash. Over the last year we have already taken action on our underperforming businesses and we have strengthened our balance sheet. We have further reshaped our portfolio with a full refocus on mineral-based solutions. We shall continue to build on the Group's strengths: our people, our strong relations with our customers, our geographical footprint and our recognized portfolio of products and solutions that bring critical properties and performance to our customers.



To date, Imerys focuses on contributing directly to 9 of the United Nations Sustainable Development Goals (SDGs), including: good health and well-being, quality education, gender equality, clean water and sanitation, decent work and economic growth, responsible consumption and production, climate action, life on land, and peace, justice and strong institutions.



Governance

2018 marked the implementation of a new governance structure for Imerys to support the Group's new strategy and organization. The office of Chairman was separated from the office of Chief Executive Officer to help guarantee both the effective working of the Group's governance bodies and a seamless transition in the Executive Management team, while also promoting a complementarity of skills and experiences. In addition to the reduction in the number of members sitting on the Board of Directors in 2018, this new governance structure boosts the Board's agility and efficiency.

The Board of Directors

Imerys' Board of Directors is headed by Gilles Michel, former Chairman & Chief Executive Officer, and Chairman of the Board since May 4, 2018.

With support from its committees, the Board of Directors exercises permanent control over the management of the Group and approves its strategic priorities, incorporating Imerys' values, as well as the main focuses of its corporate social responsibility strategy. The Board also approves all significant operations affecting the Group's future and ensures its governance structure is fit for purpose.

A diverse and balanced international body

The Board of Directors is made up of:

- 14 members, including 2 directors representing employees
- 5 female directors (41.7%, excluding employee representative directors)
- 6 independent directors (i.e. 50%, excluding employee representative directors)
- 7 nationalities

On May 4, 2018, the Board also appointed a non-voting observer to assist in the performance of its duties and to participate, in an advisory capacity, in its deliberations.

Four specialized committees assist the board in an advisory capacity:

- The Strategic Committee participates in the elaboration, the implementation and monitoring of the Group's strategy.
- The Audit Committee controls the management, verifies the quality of accounting and financial data and ensures the effectiveness of internal control and risk management systems.
- The Compensation Committee revises and proposes compensation for executive corporate officers, taking into account the targets set, risks and regulatory requirements.
- The Appointments Committee selects the best profiles for the Board of Directors and the executive corporate officers, and ensures the implementation of succession plans.



THE EXECUTIVE COMMITTEE

The Executive Committee is made up of the Chief Executive Officer and the functional managers and operational managers of the five newly created business areas. Its main role is to implement the strategic priorities set by the Board of Directors and ensure the value creation targets are achieved. The Executive Committee is collectively responsible for the overall performance of Imerys and for defending the Group's interests. On November 26, 2018, a new Executive Committee was appointed to better suit the Group's simplified organization around two segments and five business areas to better serve customers locally and on a global scale.

THE NEW EXECUTIVE COMMITTEE MEMBERS

01/
CONRAD KEIJZER
Chief Executive Officer

02/
FRÉDÉRIQUE BERTHIER-RAYMOND
Group General Counsel

03/
CYRIL GIRAUD
Senior Vice President
Performance Minerals APAC

04/
JEAN-FRANÇOIS CLAVER
Chief Industrial Officer

05/
VINCENT LECERF
Chief Human Resources Officer

06/
PHILIPPE BOURG
Senior Vice President Refractory Abrasives
& Construction

07/
MICHEL CORNELISSEN
Senior Vice President
High Temperature Solutions

08/
OLIVIER HAUTIN
Chief Strategy Officer

09/
OLIVIER PIROTTE
Chief Financial Officer

10/
THIERRY MATERNE
Chief Innovation Officer

11/
JIM MURBERGER
Senior Vice President
Performance Minerals Americas

12/
GUILLAUME DELACROIX
Senior Vice President
Performance Minerals EMEA

ECONOMIC MODEL
VALUE CREATION MODEL

Creating long-term value for stakeholders

Imerys combines a leading position in specialty minerals and a culture of operational excellence, customer-driven sales and market-oriented innovation. A new organization structured around its core markets bolsters these key strengths, allowing it to optimize its high-quality mining and industrial assets, unrivaled industrial and technological processes, innovative solutions, and leading positions on most of its markets to deliver long-term value creation for its key stakeholders.

The Group's model for sustainable value creation encompasses regular assessment of its resources, impact, and results with regard to employees and the organization, finance, industry and innovation, as well as the larger environment and society.

This model is built on Imerys' ability to combine mineral-based solutions with application expertise bringing critical properties and performance to customers' products. This know-how is a valuable asset to help Imerys maintain its leadership position on its markets and to respond effectively to future major technological challenges faced by manufacturers.

In addition, the Group's new organization is closer to customers to enable Imerys to achieve its full organic growth potential and further improve its competitive position.

DISTRIBUTION OF 2018 REVENUE BY REGION



Resources

People and organization

- 17,800 employees in 50 countries
- 76% of employees have benefited from at least one training course

Environment

- 3,134,387,677 MWh of electricity consumed, 41.514% gas
- 119 mines and over 30 minerals
- Member of act4nature, partnership with UMS 2006 *Patrimoine Naturel* for biodiversity

People and society

- Signatory of the UN Global Compact since 2017
- Alignment of CSR strategy with the UN SDGs

Finance

- Equity: €3.3 bn
- Paid capital expenditure: €333 m
- Current free operating cash flow: €286 m

Industry

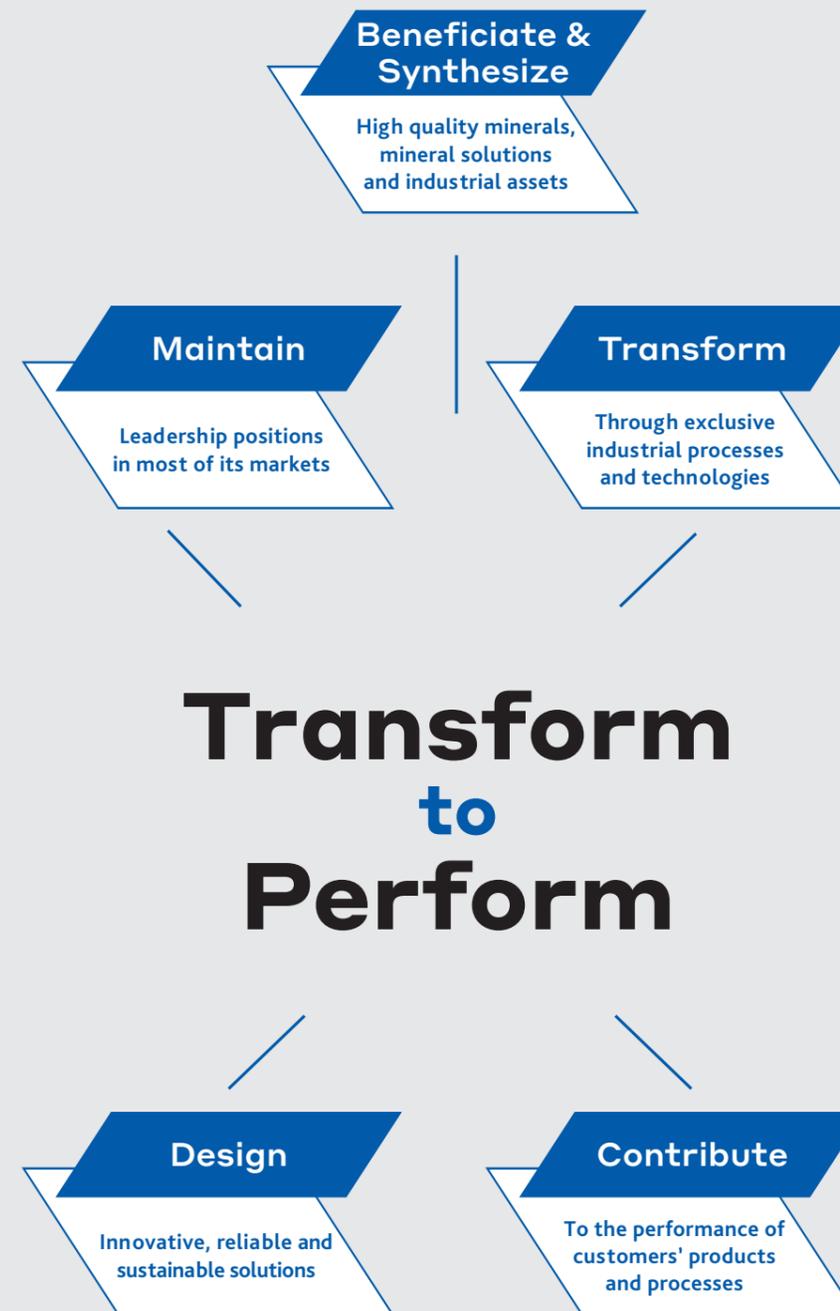
- 230 industrial sites across 50 countries
- I-Cube industrial improvement program across 175 Sites

Innovation

- 2,300 patents
- R&D project partnerships with Penn State University and MIT (USA)

All data are for 2018.

Shared sustainable value creation



Impact & results

People and organization

- 1.36 workplace Lost-Time Accident frequency rate
- 75% participation rate in "Your Voice" survey in 2017

Environment

- 742 tons equivalent CO₂/€ revenue: down 6% since 2014
- 42% of non-hazardous industrial waste recycled

People and society

- Annual Communication on Progress (CoP) since 2017
- 57 local community relations projects
- Contribution to 9 UN SDGs

Finance

- Net income from current operations: €356.6 m (up 6.5%)
- Investment grade rating: BBB (S&P), Baa2 (Moody's)

Industry

- Applications that contribute key properties to customers' products
- Market leader

R&D and Innovation

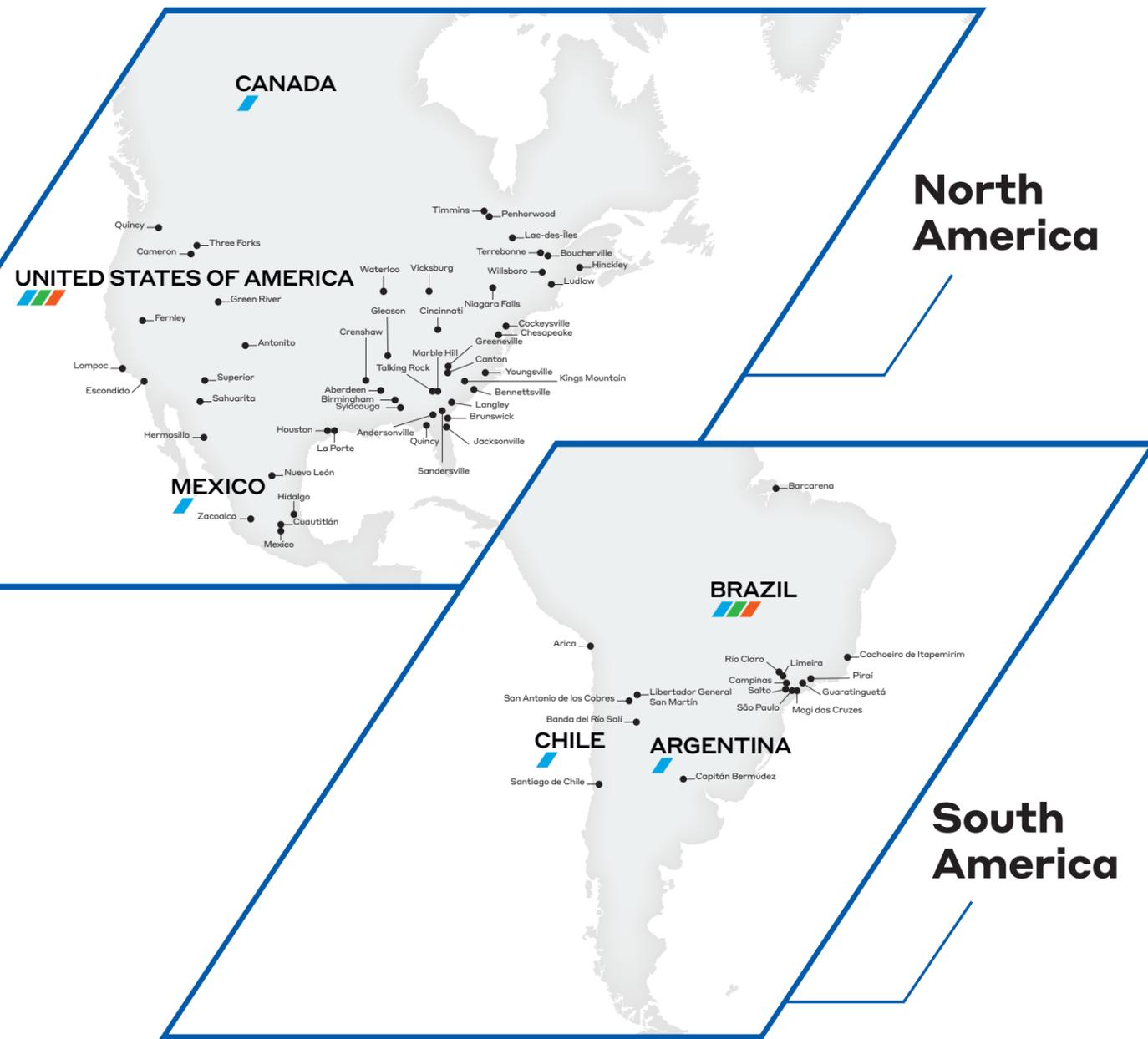
- 100+ new products
- Sustainable, eco-friendly solutions

A leader close to customers

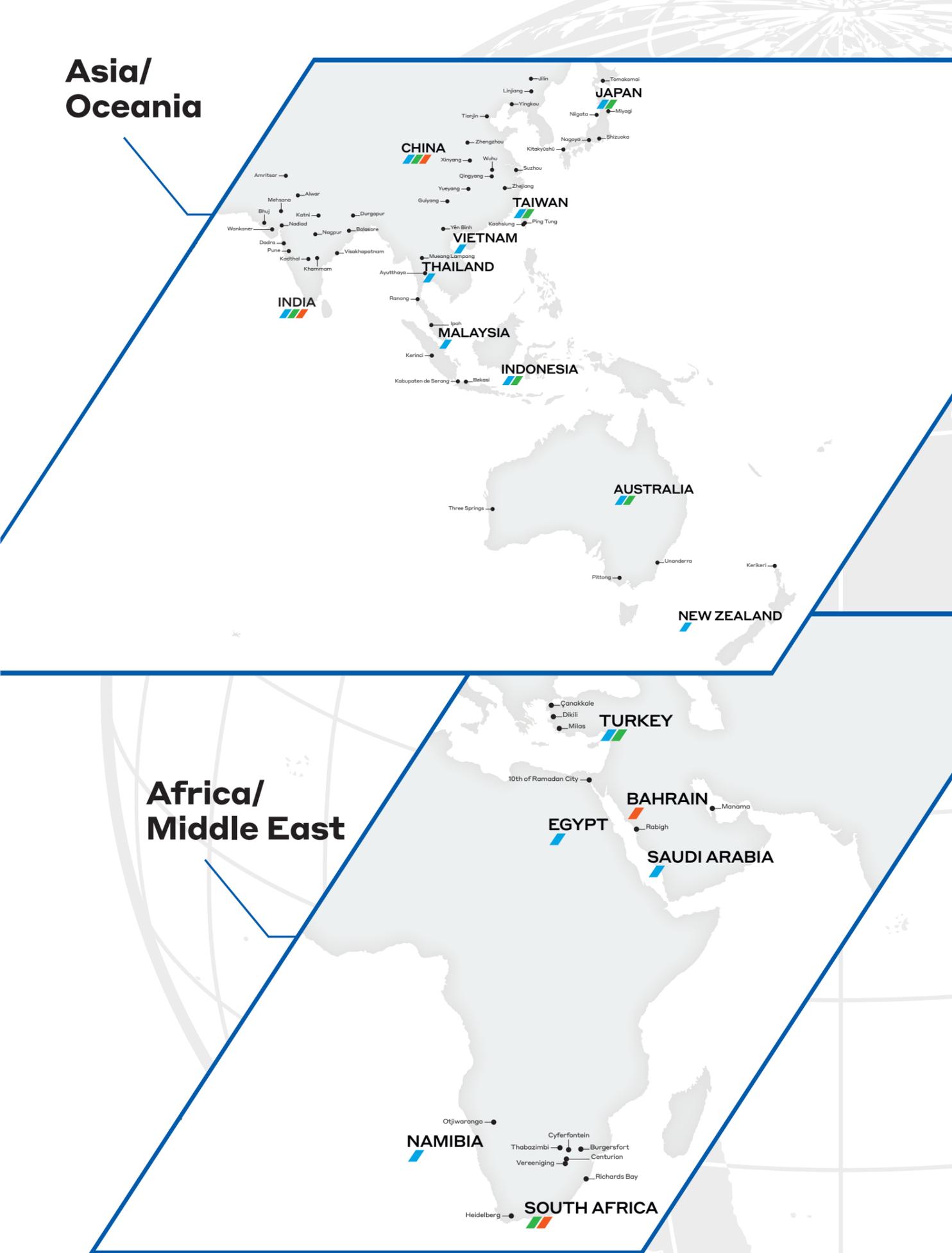
With 230 industrial sites, Imerys operates in 50 countries on five continents, forming an extensive global network of production centers and commercial offices. The Group's products are being used worldwide, and this broad geographic coverage reflects a commitment to operate as closely as possible to its customers.

BUSINESS SEGMENT

PERFORMANCE MINERALS HIGH TEMPERATURE SOLUTIONS REFRACTORY, ABRASIVES & CONSTRUCTION

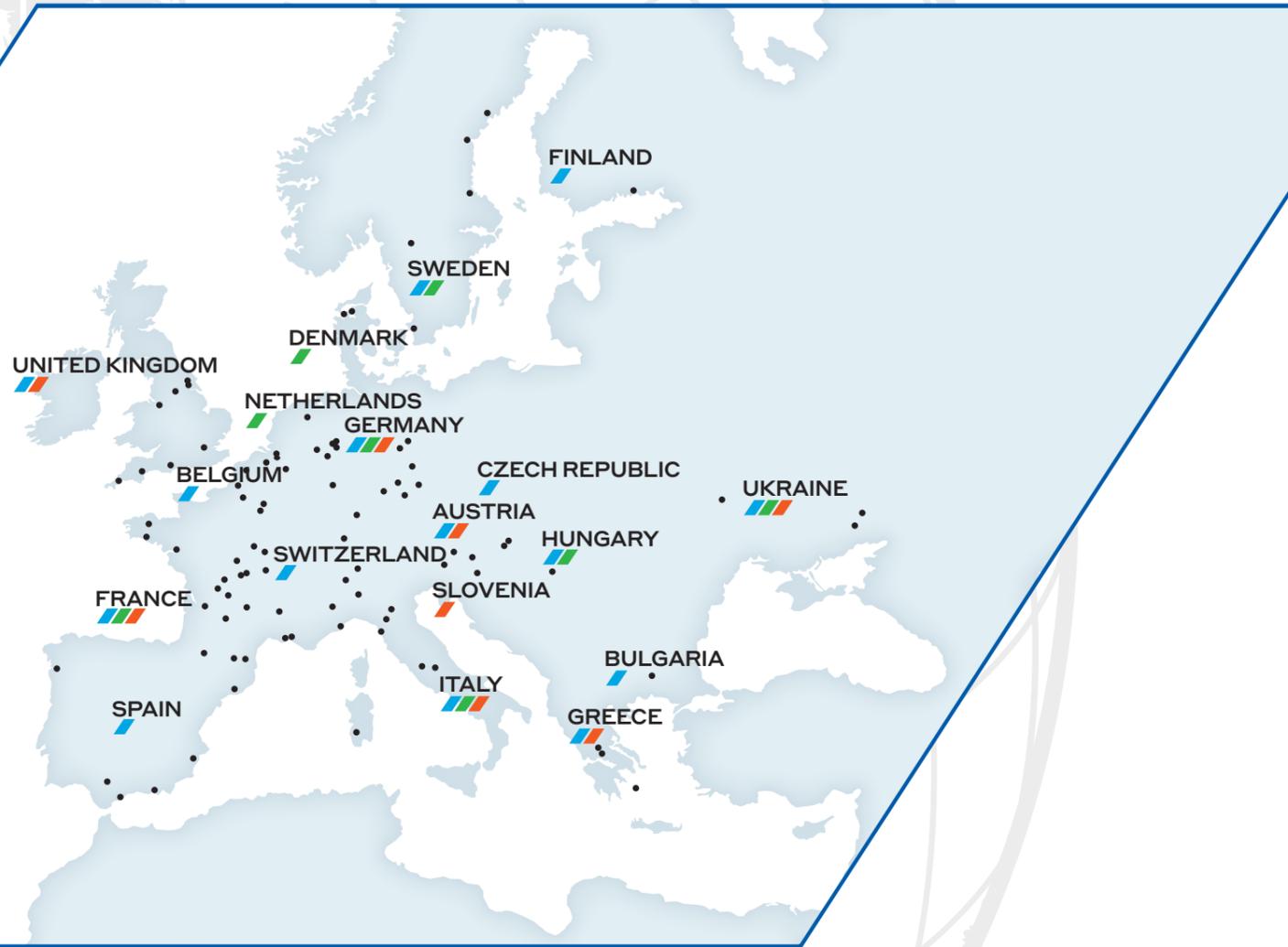


Asia/Oceania



BUSINESS SEGMENT

▬ PERFORMANCE MINERALS
 ▬ HIGH TEMPERATURE SOLUTIONS
 ▬ REFRACTORY, ABRASIVES & CONSTRUCTION



Europe



Worldwide presence

EUROPE

- ▬ Austria
- ▬ Belgium
- ▬ Bulgaria
- ▬ Czech Republic
- ▬ Denmark
- ▬ Finland
- ▬ France
- ▬ Germany
- ▬ Greece
- ▬ Hungary
- ▬ Italy
- ▬ Netherlands
- ▬ Slovenia
- ▬ Spain
- ▬ Sweden
- ▬ Switzerland
- ▬ Ukraine
- ▬ United Kingdom

AMERICAS

- ▬ Argentina
- ▬ Brazil
- ▬ Canada
- ▬ Chile
- ▬ United States of America
- ▬ Mexico

AFRICA/ MIDDLE EAST

- ▬ Bahrain
- ▬ Egypt
- ▬ Namibia
- ▬ Saudi Arabia
- ▬ South Africa
- ▬ Turkey

ASIA/ OCEANIA

- ▬ Australia
- ▬ China
- ▬ India
- ▬ Indonesia
- ▬ Japan
- ▬ Malaysia
- ▬ New Zealand
- ▬ Taiwan
- ▬ Thailand
- ▬ Vietnam

Transform



Bentonite plant,
Milos (Greece)

Imerys has particular expertise in industrial processes – mechanical, heat and chemical treatments – to provide mineral solutions with key properties for customer products and production techniques, making them ideal for a vast range of applications and products touching every aspect of life.

30+

Minerals

- Andalusite
- Ball clay
- Bauxite
- Bentonite
- Calcium carbonate
- Carbon black
- Diatomite
- Feldspar
- Graphite
- Mica
- Moler
- Perlite
- Quartz
- Talc
- Wollastonite
- Zirconia
- ...

2

Segments

- Performance Minerals
- High Temperature Materials & Solutions



Kaolin

To create long-term value

Many End markets

- Automotive
- Construction
- Consumer goods
- Industry
- Iron & Steel
- Paper
- ...

Focus on main applications

- Abrasives
- Building & Infrastructure
- Ceramics
- Filtration
- Foundry
- Iron & Steel
- Mobile energy
- Paints & Coating
- Paper & Board
- Plastics
- Refractories

Abrasives

MINERALS & PRODUCTS

Fused aluminum oxides (also known as corundum), produced by fusing alumina or calcined bauxite, result in superior hardness, mechanical strength, chemical resistance and thermal stability.

Electrofused aluminum oxide (corundum)

Sintered aluminum oxide
Sol Gel aluminum oxide

World #1 in fused minerals for abrasives

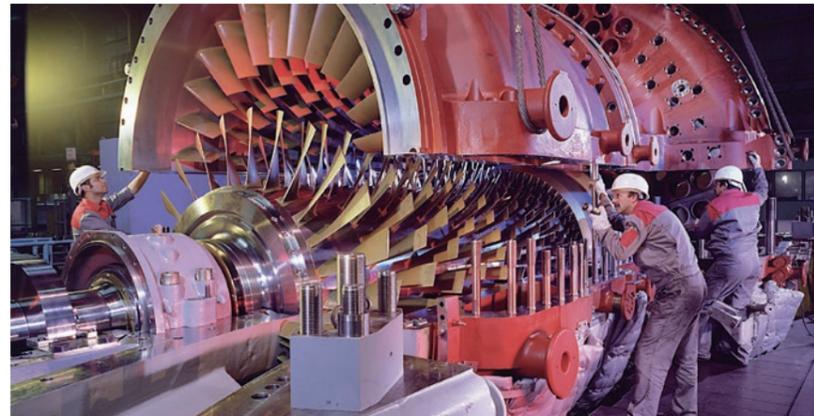
APPLICATIONS

Vitrified and resin-bonded abrasives

MARKETS

Abrasives

As the world's largest producer of fused aluminum oxide based products, Imerys provides the right high-performance macro and micro sized solutions for vitrified, resin-bonded and coated abrasives for all grinding, machining, blasting and cutting applications and for the production of refractory materials. Thanks to their wear resistance and thermal properties, these abrasives are widely used in the form of wheels or stones in the automotive, machinery, metal fabrication, electrical and electronics, building and construction industries.



A GROWING MARKET

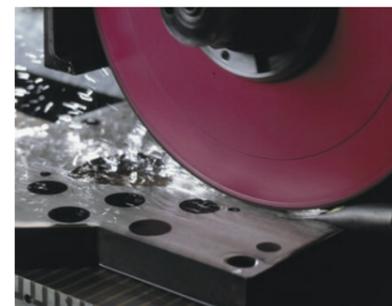
Abrasives are used extensively in a wide variety of end-user industries such as automotive, building and construction, electrical & electronics (E&E) and metal production. The global abrasives market spans all five regions of the globe, but Asia Pacific holds the lion's share, driven by rising urbanization and industrialization in emerging economies such as China and India. The exponential growth of the E&E sector in these regions is also boosting growth of the abrasives market since these materials are increasingly being used in the production of memory disks, fiber optics and semiconductors, amongst others. Imerys is able to offer a wide range of fused aluminum oxides based products, macro- and micro-sized, for all kinds of coated abrasives, as well as the right abrasive for all types of grinding applications.

2,000°C

The temperature required to reach the electro-thermal fusion that generates fused aluminum oxide.

AS HARD AS DIAMONDS

Abrasives used for cutting, polishing, grinding, buffing and many other processes need to be harder than the material being worked on. Common abrasives generally score 7 or higher on the Mohs hardness scale. Imerys' fused aluminum oxides are rated 9, classing them alongside the hardest known substance on Earth: diamonds (Mohs 10). Imerys' fused aluminum oxides confer high hardness, excellent thermal and chemical stability and a high degree of thermal shock resistance. They are widely used for cutting and grinding wheels and discs, sharpening stones, sand blasting media and, in strip form, for sandpaper in a variety of industries including automotive, machinery, metallurgy, E&E and building and construction.



SERVING THE FULL SPECTRUM OF MANUFACTURED ABRASIVES

Manufactured abrasives are essential to modern industry because of the consistent quality and precision they can provide compared to natural abrasives. Imerys offers a full range of macro- and micro-abrasives to serve the three main segments of the manufactured abrasives market: 'bonded', 'coated' and 'precision' products.

Bonded products

Bonded products are abrasive particles bound together using a binder such as clay, ceramic or resin before being shaped into wheels, stones and discs. Imerys supplies a full range of traditional fused aluminum oxide grades for vitrified and resin-bonded abrasives.



Coated products

Coated abrasives are abrasives which are fixed to a backing material such as paper, cloth, rubber, resin, polyester or even metal, many of which are flexible. Sandpaper is the most common coated abrasive.

Precision products

'Super abrasives', or 'precision abrasives', refer to abrasives which demonstrate extraordinary hardness, unparalleled performance, and longevity. Super abrasives are prized for high-speed precision grinding and polishing in high-tech industries such as the aerospace, automotive, medical, electronics, composites and oil industries. The super abrasives market has encountered significant development in recent years and is slated to grow tremendously in forthcoming years.

SINTERED GRADES FOR 'SELF-SHARPENING' END-PRODUCTS

Imerys offers a range of sintered α -aluminum oxides. Sintered aluminum oxide is produced using ceramic technologies such as fine milling, shaping and sintering, enabling the production of sub microcrystalline grades. This microcrystalline structure causes the perpetual liberation of 'micro-cutting edges', i.e., the abrasive grain 'self-sharpens' on a permanent basis, meaning grinding wheels stay constantly sharp. Sintered α -aluminum oxide grinding wheels are cost-effective alternatives to Cubic Boron Nitride (CBN) and diamond precision products.



Imerys' solutions are also used in bio-ceramic applications for polishing prosthesis, in gas or liquid filtration for producing ceramic porous membranes or in automotive for catalyst applications and surface finishing operations.

HIGH ADDED VALUE PROPERTIES

- macro and micro sizes
- very high hardness
- excellent thermal and chemical stability
- high degree of thermal shock resistance
- improved resistance

Building & Infrastructure

MINERALS & PRODUCTS

A range of solutions for all types of applications
Building and infrastructure vary in their forms, requirements and materials. Imerys has developed a range of highly technical solutions addressing the needs of the many applications of building and infrastructure specialists for long lasting performance.

- Bentonite
- Calcium aluminate binders
- Clay
- Kaolin
- Graphite
- Metakaolin
- Perlite
- Talc

World #1 in high performance calcium aluminate-based binders

Key brands: Ciment Fondu®, Fondag®, Peramin®, SewperCoat®, Ternal®

APPLICATIONS

Construction and ceiling insulation | Diaphragm/slurry wall | Horizontal directional drilling | Landfill and sealing liners | Pipe jacking | Pipes & wastewater | Shield tunneling | Technical mortars | Technical concrete

MARKETS

Building chemistry | Civil engineering | Construction



Imerys has developed world-class solutions around the variety of applications, key properties like rapid drying and aesthetics, for the construction and civil engineering industries. Specialty aluminate-based binders, metakaolin, smart fillers and functional additives such as bentonites, perlites and clays are tailored according to end users' performance expectations. These high performance products meet the exacting needs of key applications, including flooring, cement tiles adhesives and grouts, technical mortars, waterproofing, renders, external insulation, sealing liners, pipes and wastewater, as well as heavy duty concrete, tunneling and mining.



HIGH-PERFORMANCE BUILDING CHEMISTRY

Building chemistry requires a combination of the right mineral properties and innovation, with specific needs in terms of consistency, color and reactivity. Years of close relationships with contractors and engineers have created a deep understanding of customers' needs. To meet the demands of its specialty concrete customers in the civil engineering sector, Imerys has innovated heavily, producing a range of calcium aluminates binders, aggregates and technical solutions that are easy to handle and apply, as well as providing aesthetics properties. These products are designed to meet the requirements of high-performance special concrete technology in applications such as surfaces/lining, repair or construction requiring short turnaround times or resistance to aggressive environments. Continually evolving, their technology is constantly improving and raising performance levels.

CALCIUM ALUMINATE BINDERS

Calcium aluminate binders' exceptional properties of resistance to corrosion, abrasion and heat, combined with rapid setting have quickly become extremely value-added solutions for building industry companies. Crushed or screened, they are used as aggregates. Ground into a fine powder, the clinker becomes calcium aluminate cement (CAC) which forms a paste when mixed with water, with the ability to harden within 24 hours. Calcium aluminate cements are also used in combination with other fine components to become hydraulic binders.

They are used for:

- Floor preparation systems
- Adhesives and grouts
- Technical mortars
- Priming and finishing walls and facades

Main references include:

- Peramin®, a range of powder and liquid additives designed to enhance drymix mortars application and performance
- Ternal® and Ciment Fondu® for robust, cost-effective and high-performing solutions that are easy to apply and dry quickly.

-10°C

Calcium aluminate concretes harden in temperatures as cold as this.

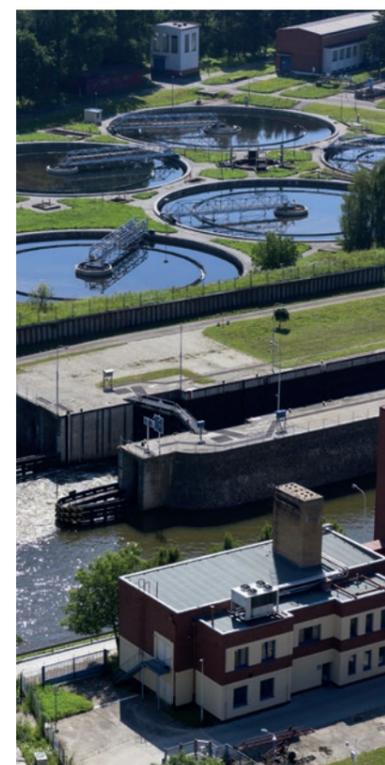


UNIQUE TECHNOLOGY FOR PREVENTING CORROSION IN SEWER AND WASTEWATER SYSTEMS

Pipe durability is a key economic factor for municipal sewage system owners and operators. Protecting or repairing pipes using materials that are resistant to biogenic corrosion and abrasion prevents premature damage and associated costly repairs. Imerys' calcium aluminate concrete and mortars prevent corrosion in sewer systems, considerably lengthening their lifespan and reducing total operating costs for sewage system operators.

BENTONITE-BASED FLUIDS FOR NO-DIG DRILLING

Imerys' bentonite-based fluids perform a number of essential functions during 'No-Dig' horizontal directional drilling projects. These functions include loosening the soil material in front of the drilling head, cooling and lubricating the drill bit and stem, stabilizing the soil around the bore-hole and facilitating removal of material.



DIVERSIFICATION THROUGH NEW PERLITE TECHNOLOGY

A new production line specializing in a high-quality perlite solutions that is set to benefit the construction industry, was inaugurated in Spain in 2018. These specially engineered perlite microspheres, a combination of lightweight and strength, are ideal for external thermal insulation composite systems, such as ready-to-use wall putties and sprayable plaster systems.

NEW KAOLIN SOLUTIONS FOR FIBERGLASS REINFORCEMENT

Fiberglass is an essential component in a range of industries including wastewater treatment, heating and ventilation systems, and fireproofing. Imerys has developed a range of high-alumina, low-iron content kaolin grades for fiberglass reinforcement which enhance resistance to chemical and physical attack.

GRAPHITE & TALC FOR POLYSTYRENE AND FOAM COMPOSITES

With the TIMREX® KL graphite, Imerys has launched a new graphite additive for expanded polystyrene. Graphite containing boards show up to 20% better thermal insulating efficiency than conventional expanded polystyrene. This allows to decrease the insulation board thickness in the thermal insulation of buildings. Mistrocell® is a new talc range, which confers outstanding cell nucleating performance in foam composites for the production of lightweight materials with improved stiffness at lower densities. It helps manufacturers produce high quality foams and reduce material costs. New talc-based foams are also being explored for soil conditioning during tunneling operations.

HIGH ADDED VALUE PROPERTIES

- consistency
- chemical stability
- optimized production cost
- emissions reduction
- improved rheological performance
- improved stiffness at lower densities
- fast hardening
- controlled wet-edge time
- resistance to abrasion, erosion, pitting, impact
- resistance to high temperatures and thermal shock

Ceramics

MINERALS & PRODUCTS

Imerys' tailor-made offering to ceramics manufacturers include: high quality products, laboratories dedicated to ceramic application formulation, state-of-the-art technical service, and on-site production support.

- Ball clay
- Bentonite
- Ceramic bodies and glazes
- Chamotte
- Engobes
- Feldspar
- Fused alumina
- Halloysite
- Kaolin
- Kiln Furniture
- Mica
- Pegmatite
- Quartz
- Talc
- Wollastonite

World #1 in minerals and ceramic bodies for sanitaryware

World #1 in kiln furniture for roof tile production

World #2 in kiln furniture for tableware production

Europe #1 in minerals and ceramic bodies for tableware

APPLICATIONS

Sanitaryware | Tableware | Wall and floor tiles

MARKET

Building & construction | Household goods

From fine dinner plates to stylish bathroom shower trays, the design and quality of ceramics influence many parts of everyone's daily life. This is why tableware, sanitaryware and tile manufacturers demand the highest standards for functionalities such as whiteness, mechanical strength or dimensional stability. Imerys is the world leader in premium minerals for ceramics, prepared bodies and glazes, as well as kiln furniture. The engineered mineral blends are also a key asset for unrivalled quality and high performance products.

SERVING THE MOST PRESTIGIOUS TABLEWARE BRANDS

Imerys is the leading European supplier of mineral solutions for the tableware industry. Tableware manufacturers benefit from a unique product range of ball clays, feldspars, halloysite, kaolins, pegmatites, bodies and glazes. Imerys' minerals are known for their unparalleled consistency and for providing outstanding properties. The very low levels of iron oxide make them ideal for applications requiring exceptional whiteness. With high quality deposits in many countries, Imerys is able to provide specially engineered solutions to optimize the performance of tableware bodies and glazes during the challenging stages of forming. Customers worldwide include the most prestigious brands of porcelain, bone china, hotelware, earthenware and stoneware.



The average porcelain plate contains

55%

kaolin.



A BENCHMARK FOR THE SANITARYWARE MARKET WORLDWIDE

With the largest offer on the market and a strategic presence in Asia, Europe and the Americas, Imerys has the resources to serve sanitaryware manufacturers anywhere in the world: ball clays, including English references, the benchmark for sanitaryware production, fluid kaolins, chamottes, feldspars, talc for demoulding and glaze solutions. Imerys also runs sanitaryware body plants in Italy and Mexico, developing ready-to-use slips for vitreous china and fine fireclay producers. The prepared bodies are custom-made to meet individual manufacturer's specific needs. Technical experts with first-hand experience provide dedicated support to help customers optimize the performance on conventional and high pressure casting process. Imerys is the only supplier to offer the full range of minerals and technical solutions specific to fine fireclay (FFC) to produce bigger, stronger and more complex shapes. To bring a one-stop-shop offer, a team of designers is dedicated to provide specific and optimized kiln furniture systems to maximize the firing efficiency.

TILE MAKERS CREATIVITY ENHANCERS

Plasticity enhancers for tile bodies, whiteness enhancers, mineral solutions for large and thin formats, high quality kaolins for glazes & engobes: Imerys can offer the complete mineral range for tile manufacturing with an unrivalled quality. With blending platforms and technical support from technicians located near the major ceramic clusters, tile manufacturers enjoy the best solutions adapted to their process. Made-to-measure formulations developed in partnership with customers help sustain their development. A dedicated range of products particularly suited to the production of large and white porcelain tiles allow customers to go further on quality and stability.

Imerys launches 3D ceramic printing feedstock

Imerys has recently launched EZ Print 3D™, a range of ready-to-use ceramic feedstocks for 3D printing using Paste Deposition Modeling (PDM), available in a 'plug & play' cartridge and bucket.

HIGH ADDED VALUE PROPERTIES

- lower production costs
- consistency of production
- mechanical strength and plasticity
- exceptional whiteness and translucency
- low iron
- excellent workability
- low residue
- stable rheological properties
- low deformation formulas

Advanced ceramics

ADVANCED CERAMICS SERVING A BROAD RANGE OF INDUSTRIES

Imerys' minerals bring a host of benefits to advanced ceramics based on ceramic, steatite, cordierite or alumina bodies. Depending on the application, they are valuable alternatives to other less robust materials, guaranteeing long service life to parts that are subject to high stress and used in an array of industries:

- **Automotive catalyst system:** in exhaust systems in particular, ceramic cordierite structures are essential components in diesel and gasoline particulate filters where talc and kaolin are used as the main components of cordierite honeycomb supports.
- **Covering the whole range of high voltage insulators (HV to UHV):** engineered to help meet the exacting demands of the downstream market, Imerys' mineral solutions contribute to the safe transfer of the highest levels of electrical power.
- **Technical ceramics to meet industrial challenges:** the finest grades of fused alumina and zirconia are used as ceramic components due to their crystal structure and mechanical strength in applications such as oxygen sensors and solid oxide fuel cells.
- **Electrical & electronics dominate the market:** Imerys' minerals offer an array of electrical properties, including insulation, semi-conducting, superconducting, piezoelectric, and magnetic properties making them invaluable materials for smart technologies.

HIGH ADDED VALUE PROPERTIES

- DIN 40685 standard specifications
- cost savings
- higher production flexibility
- high temperature and wear resistance
- high mechanical and corrosion resistance
- high consistency strength
- high mechanical strength

MINERALS & PRODUCTS

Advanced ceramics are used in demanding applications such as electrical fittings, thermal appliances, automotive, aerospace, military and medical industries. From its unique mineral portfolio and mineral processing capabilities, Imerys has engineered industrial solutions covering the specific requirements of customers for technical porcelains, steatites, cordierites, silicon carbide, mullites and alumina ceramics.

- Ball clay
- Chamotte
- Feldspar
- Fused alumina
- Fused zirconia
- Kaolin
- Mullite
- Silicon carbide
- Talc

- Alumina porcelain bodies
- Cordierite bodies
- Standard prepared bodies
- Steatite bodies
- Technical porcelain bodies

World #1 in fused zirconia

APPLICATIONS

Electronic devices | Electrical porcelain | Industrial ignitors

MARKETS

Automotive | Electronics | Energy and Environment | High and ultra high voltage simulator | Mechanical engineering

Filtration

MINERALS & PRODUCTS

Diatomite and perlite are naturally occurring minerals with exceptional properties such as low density and chemical inertia. They also have high specific surface area and porosity.

Diatomite Perlite

World #1 in diatomite and perlite-based filtration products

APPLICATIONS

Beer filtration | Biodiesel & edible oils filtration | Drinking water filtration | Filtration of chemicals | Filtration of foods | Filtration of liquid waste (Wastewater treatment etc.) | High purity filtration | Juice filtration | Sweeteners filtration | Swimming pool filter aids | Wine filtration

MARKETS

Civil Engineering | Energy | Construction | Food and beverage industries



High quality filtration is critical for many consumer and life science industries: from beer and wine to sweeteners or edible oils, not to forget blood plasma. Imerys' filtration solutions are based on naturally occurring minerals with exceptional properties such as low density, chemical inertia, high specific surface area and a high level of porosity. Together with superior technical service, they offer a unique combination of functionalities to design the right filtration substrates, optimize process costs and asset capacity while achieving demanding specifications.

NATURAL SOLUTIONS FOR FOOD AND BEVERAGE

Innovation and filtration go hand in hand: mineral type, chemistry, particle size and density to transform customers' businesses. Naturally occurring minerals are environment-friendly solutions. Diatomite and expanded perlite have many filtration applications in the food and beverage industries where they are used as process enablers for the filtration of beer, sweeteners, water, wine, juice, tea and edible oils.

Diatomaceous Earth (DE) allows brewers to increase beer production and reduce material volumes and waste. Engineered perlite-based filter aids are designed for optimizing the filtration of wine musts by boosting filtration capacity at reduced dosage. Other solutions include juice filtration aids that don't compromise clarity and prevent the use of arsenic, highly permeable adsorbents for waste-oil biodiesel fuels and high-purity grade diatomite filter aids for the biopharmaceutical industry.

CELITE CYNERGY®: AN ALL-ROUND WINNER

The Celite® diatomite filter range is a favorite with top beer brewers all over the world. Celite Cynergy® is a beer stabilizing diatomite product that filters like diatomaceous earth and cold stabilizes like silica gel, yet performs better than conventional diatomaceous earth and silica gel. Celite Cynergy® allows brewers to increase beer production and reduce material volumes, waste, cleaning time and storage space.

"IMERVIN EFFICACE": HOW TO BOOST WINE FILTRATION

The ImerVin perlite filter range is prized by producers of some of the planet's finest

wines. The outcome of long discussions with oenologists, wine producers and filtration service providers, ImerVin Efficace is an engineered perlite-based filter aid designed for optimized filtration of wine 'musts'. ImerVin Efficace traps must solids much more efficiently, allowing higher filtration capacity at lower powder dosing rates.

IMERPURE™: ACCESS TO CLEAN WATER ANYWHERE FOR EVERYONE

A staggering two billion people lack access to safe drinking water worldwide according to the World Health Organization. Access to potable water is therefore a priority in developing countries the world over. In 2016, Imerys joined the *Springboard Initiative* created by nonprofit global-health leader PATH and funded by the Bill & Melinda Gates Foundation to provide a safe drinking water system. Internal development programs based on filtration expertise led to ImerPure™, a high performance cartridge able to purify highly turbid, contaminated water and reduce water-borne pathogen count. ImerPure™, a cheap, extremely resistant, high-performance solution which meets international standards, is designed for household water treatment and storage system for low income families. The ImerPure™ packs are distributed through partnership with disaster relief organizations, social enterprises, NGOs and household manufacturers.



Fossil-free fuel on the 2018 Route du Rhum transatlantic race

Imerys Clean Energy, skipped by Phil Sharp, raced the 3,550 miles from Saint-Malo to Guadeloupe without a drop of fossil fuel aboard. The improved renewable energy pack showcased a suite of high efficiency renewable energies, including lightweight solar photovoltaic, a hydrogenerator and biodiesel produced with the help of innovative Imerys' filtration technologies. This B100 biodiesel provided by the Renewable Energy Group (REG) acts as a direct renewable replacement to conventional fossil diesel and enabled the boat to be the only one in the *Route du Rhum* to use no fossil fuel. Imerys also provided the abrasives on the solar panels installed on deck which offered anti-slip properties and increased the durability of the panels. Phil Sharp not only took third place in the solo transatlantic race, but was the only participant to skipper a yacht using zero fossil fuel.

HIGH PURITY FILTER SOLUTIONS FOR PHARMACEUTICAL AND MEDICAL APPLICATIONS

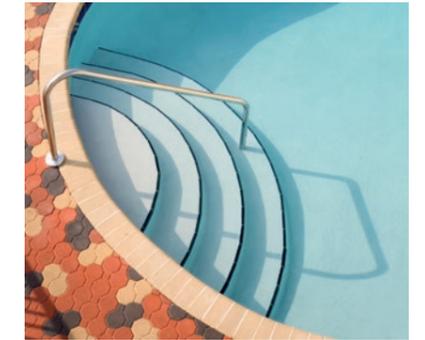
The high purity filter aids supplied by Imerys have been used to produce pharmaceuticals for over 30 years. Today, the specialized filtration solution is produced and shipped from a state-of-the-art plant in Lompoc, California (USA). This fully enclosed, dedicated facility produces USP-NF and high purity grade diatomite filter aids for biopharmaceuticals, pharmaceuticals and medical applications such as blood plasma fractionation.

FILTRATION SOLUTIONS FOR INDUSTRIAL APPLICATIONS

Imerys' products are used in a wide variety of industrial applications. These range from plating wastewater treatment and livestock farm wastewater systems to lube oils for rolling mills and brine completion fluids. CynerSorb® is a highly permeable adsorbent with excellent filtration characteristics; engineered to optimize process costs during the manufacture of aluminium foil and sheets, improving the filtration performance and limiting the losses associated with the recycling of kerosene-based lubricating oils.

CYNERSORB®: BOOSTING WASTE-OIL BIODIESEL PRODUCTION

CynerSorb® adsorbents are proving invaluable, cost-effective refining and purification aids in biofuel production. CynerSorb® diatomite products are highly permeable adsorbents that break down soap molecules and adsorb them together with metals and other polar impurities during purification. CynerSorb® can be used with a number of feedstocks, including used cooking oils, refined vegetable oils and animal fats and tallow.



AQUA-CEL HANDY POOL WATER FILTERS

Imerys produces and markets diatomaceous earth filter aids for swimming pools under its Aqua-Cel brand. Aqua-Cel provides sparkly clear water and filters out the most potentially harmful bacteria, at the drop of a handy water-soluble pouch directly into the skimmer without having to worry about dust (water soluble pouch only available in the USA).

HIGH ADDED VALUE PROPERTIES

- increased production efficiency
- higher flow rates
- low bulk densities
- chill haze reduction
- longer cycle times
- process simplification
- reduction/elimination of hydration times
- low beer soluble iron
- zero crystalline-silica products
- low heavy metal content



We were proud to be able to support Imerys Clean Energy and Phil Sharp in their zero CO₂ emissions transatlantic race, by supplying our B100 biodiesel reference using Imerys' CynerSorb®. Even if the 40 litres were only used for getting out of dock and underway, our contribution demonstrated the interest of biodiesel for the maritime sector. Renewable Energy Group (REG) is committed to developing sustainable solutions including advanced biofuel and biomass-based diesel. //

Troy Shoen, Senior Marketing Manager, Renewable Energy Group

Foundry

MINERALS & PRODUCTS

A wide range of high performance minerals, from bentonite to various types of refractory sands and flours, are used in the foundry moulding process to improve casting accuracy and productivity. Imerys is a leading provider of green moulding sand additives for sand casting, as well as sintered and fused minerals for ceramic moulding. Imerys is also the world's leading producer of calcined products for the refractory industry.

- Andalusite
- Bentonite
- Chamotte
- Fused alumina
- Fused silica
- Fused zirconia-mullite
- Green moulding sand additives
- High alumina
- Metakaolin
- Mica
- Molochite
- Perlite
- Refractory solutions

World #2 in bentonite for metal casting
Europe #1 in monolithic refractories

APPLICATIONS

Fillers for foundry coatings | Investment casting refractory solutions | Sand casting core-making | Sand casting mould

MARKETS

Co based superalloys for medical | Iron foundry | Ni based superalloys for aerospace and powergen | Steel foundry | Titanium and Titanium alloys

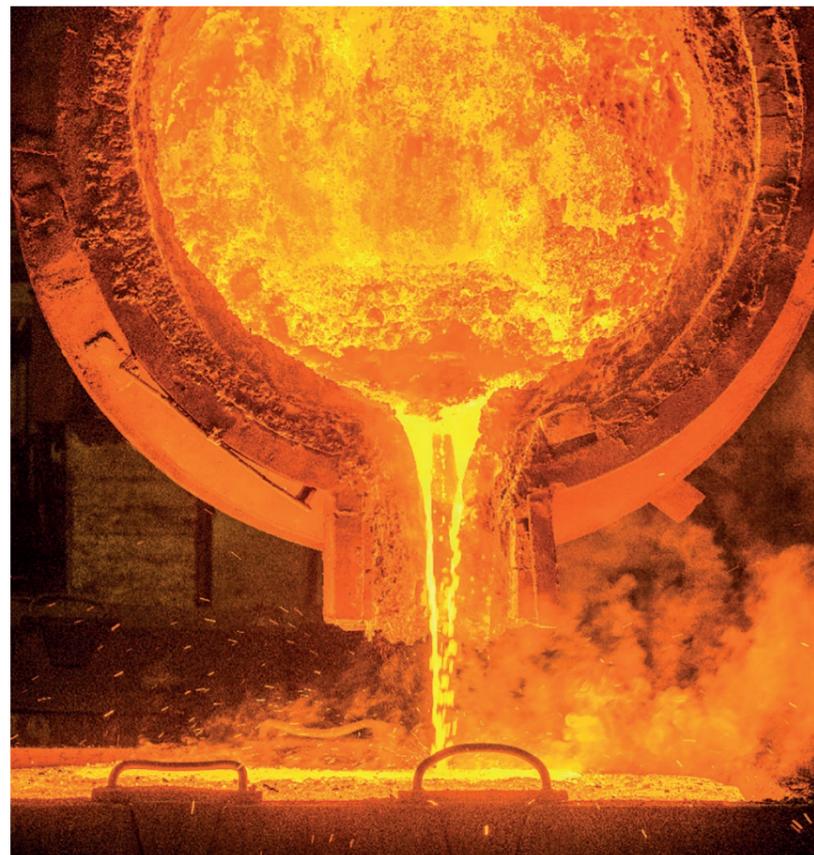
The process of melting metal and pouring castings has a long tradition, with origins dating back at least 5,000 years. Today, moulds made of sand, ceramic or metal are widely used to cast precision parts for manufacturing customers, such as automotive, aerospace, agriculture and many others industrial equipment manufacturers. Imerys supplies the foundry industry with high-performance minerals and innovative solutions for moulds and cores in sand and investment casting as well as refractory solutions for both ferrous and non-ferrous foundries.

THE DELICATE BALANCE OF FOUNDRY TECHNICAL REQUIREMENTS

In an industry focused on quality and productivity, finding the right technical solutions for every application is key. Imerys' solutions answer the requirements for mold stability, thermo-mechanical properties and flexibility to adapt to any type of process and casting. On the other hand, low emission additives and recycling solutions have been developed to address the sustainability issues while reducing the total cost of ownership for the foundries.

INNOVATIVE CUSTOMIZED SOLUTIONS

With a unique mine to market model, ensuring high reliability, quality and product development, Imerys supplies consistent high-quality solutions developed from effective resource management and customer development partnerships. This combination of innovative products, engineering know-how, effective project management, and installation services has made Imerys a flagship in the foundry industry.



Green innovation wins Foundry Award

At the 2018 World Foundry Congress (WFO), gathering 930 foundry experts from 43 countries, Imerys won Best Paper for an innovative solution to reduce the environmental impact of metal casting. The team received the award for their work showing how pre-fused calcium aluminates can work as a greener alternative to calcium carbide in the processing of nodular cast iron.

Envibond® reduces emissions

Foundries are constantly seeking new ways to produce high quality castings whilst complying with increasingly stringent emissions regulations. Envibond®, one of the latest product innovations, can reduce casting emissions and odors by up to 95%, and improve both workplace conditions and employee health.

RIKO® utilizes waste streams

Waste green sand extraction systems frequently contain large quantities of bentonite and coal dust. The RIKO® process utilizes this waste stream as a source of material for green sand molding operations creating a high value and sustainable product. Using RIKO® in the green sand process enhances molding sand properties, improves mold stability, reduces casting defects and mitigates waste disposal costs.



CORE AND MOULD BINDERS, SANDS AND ADDITIVES TO IMPROVE CASTING SURFACE

Due to their low thermal expansion and high refractoriness, Imerys' molding binders, additives and special sands represent state-of-the-art technology. They prevent the formation of cracks and veining in core sand molds, ensuring defect-free core surfaces and the 'as-cast' condition of the final product.



FOUNDRY COATINGS AND INVESTMENT CASTING

Imerys is also the world's leading supplier of fused aluminum oxide, fused mullite and fused zirconia-mullite for foundry coatings and investment casting. Due to their high refractoriness and low thermal expansion, these minerals are ideal for preventing metal-mould reaction as well as thermal shock and cracking in foundry parts.

REFRACTORY SOLUTIONS

Imerys, under the brand Calderys, is the world's leading provider of refractory solutions for both ferrous and non-ferrous foundries, combining innovative products, engineering know-how, project management, and installation services. With secure and consistent access to key raw materials vital for refractories, including a unique quartzite mine in Sweden, foundry owners can rely on quality, service and long-term supply.

105

million tons: worldwide casting production, in 2018.

HIGH ADDED VALUE PROPERTIES

- mold stability
- mechanical properties
- flexibility
- high thermal durability
- strength
- chemical stability
- high resistance to mechanical wear
- low thermal and electric conductivity at high temperatures
- high reduction resistance
- high thermal shock resistance
- high abrasion and corrosion resistance
- consistency
- reliability

Iron & Steel

MINERALS & PRODUCTS

In addition to providing minerals key to both primary and secondary steelmaking processes, and through its steel casting fluxes, Imerys makes a crucial contribution to steelmaking performance, improving quality, cleanliness and consistency.

Bauxite

Calcium aluminate flux
Refractory solutions
Wollastonite

World #1 in continuous flow casting

World #1 in alumino-silicate monolithic refractories

World #1 in calcium aluminates for metallurgical flux

APPLICATIONS

Continuous steel casting |
Finished steel product |
Iron ore pellets | Initial steel casting | Refractory solutions

MARKETS

Ironmaking | Steelmaking



Used in everything from jet engines to surgical instruments and from construction to automotive and building/infrastructure, steel is one of the most versatile materials. Imerys supports the steel industry with a range of minerals, refractory solutions, and services covering all aspects of liquid steel primary and secondary processes. The main applications served range from safety and working lining to continuous flow steel casting fluxes.

SPOTLIGHT ON IRON AND STEEL MINERALS

Minerals used in primary and secondary steelmaking processes include alumina, wollastonite, and bauxite, which contain characteristically high amounts of alumina and iron oxide. Silicon- and graphite-based alkaline mixes and other carbon sources are also used as functional additives for continuous flow steel casting.



TRUSTED SUPPLIER FOR THE IRON AND STEEL INDUSTRIES

Through its brand Calderys, Imerys is considered a reference supplier in the iron and steel making industries, offering value-added solutions based on tailor-made designs and engineering to provide refractory linings and services giving the best possible performance.

Through its brand LDSF®, Imerys has been supplying the secondary metallurgy throughout the world for over 30 years.

Thanks to its special physical and chemical properties, calcium aluminate flux speeds up slag formation and improves steel refining in secondary metallurgy and in the continuous casting tundish. These products are custom-designed for steel-making customers and are modified as steel grade and specification requirements evolve. In addition to casting fluxes, Imerys also markets covering compounds, metallurgically active slags and flux feeders.



1,640
million tons, the estimated global steel output in 2018.



SERVICING THE STEELMAKING INDUSTRY

Steelmakers are constantly seeking superior process efficiency and steel quality. Imerys provides full support to the steel industry through a range of products and services from its manufacturing facilities that cover all aspects of liquid steel casting and ladle metallurgy. Using the thermo-chemical software, 'Factsage', Imerys specialists are able to provide customers with an in-depth view of slag/metal/refractory interactions. Factsage is essentially used for risk reduction and cost optimization purposes but can also be applied to bespoke studies. With competence centers for product development and customer support in all corners of the globe, Imerys is in a unique position to meet the evolving demands of the global steel industry.

CASTING FLUXES FOR HIGH QUALITY STEELS AND PERFORMANCE PROCESSES

Casting fluxes are engineered materials used in the continuous casting and bottom pouring of steel. They are applied to the mold during the casting process and play an important role in end product quality and — very importantly — the safety of the process for steelworkers. Imerys casting flux products are custom-designed according to the operational parameters, steel grade and quality requirements of each customer to provide optimum steel cleanliness, lubrication, thermal insulation, heat transfer control and oxidation prevention.

COVERING MATERIALS FOR STEEL LADLES AND TUNDISHES

Steel ladles are used in the steel industry to receive, transport and cast the steel directly, into ingots, or via a tundish by means of a continuous casting machine.

The tundish serves as a buffer and for flow control between the ladle and casting machine. Imerys has developed a range of covering materials, engineered from various raw materials, designed to prevent 'skull' formation — when the metal solidifies and sticks to the refractory lining — by limiting heat loss in the ladle or tundish. These grades also prevent re-oxidation and absorb unwanted impurities from the steel whilst exerting minimized impact on refractories, thereby increasing their lifespan.

METALLURGICAL FLUX TO ENHANCE STEEL CLEANLINESS

Calcium aluminate flux is used in the refining of liquid steel in both integrated (blast furnace and iron ore) and electric processes. Calcium aluminate flux facilitates the formation of slag and helps optimize its composition, maximizing the steel refining process. Imerys has extended its benchmark calcium aluminate LDSF® range to meet current steel making trends for high-purity products. These new grades improve inclusion removal in all types of production equipment (RH, AOD, VOD, tundish).

PRODUCTS FOR ACTIVE SLAGS

A slag is a by-product formed during the smelting and other combustion processes from impurities in the metals or ores being treated. Slags float on the surface of the molten metal protecting it from oxidation and keeping it clean. Active slags are applied during the secondary metallurgy treatment of the steel in the ladle and as agents on top of the steel in the tundish to achieve de-oxidation, desulfurization, degassing and protection against re-oxidation. Imerys high purity active slags provide low sulfur and low phosphorus concentrations and improve the absorption and dissolution of impurities in the steel.

FLUX FEEDERS

Imerys has been supplying automatic flux feeder systems for the casting of billet, bloom, beam blank, thin slab and slab casters for over 15 years, eliminating the manual addition of flux to the continuous casting mold. In addition to ensuring the flux is delivered in a continuous, seamless manner, for supreme steel quality and process reliability, Imerys flux feeders improve operator safety by enabling

employees to steer clear of hazardous mold areas.

SERVING THE GLOBAL ECONOMY

The iron and steel industry plays an essential role in the global economy, serving as it does the transportation, heavy engineering and construction industries, amongst others. Steel is an extremely versatile material found in everything from machine tools to surgical scalpels. Most modern buildings are supported by steel skeletons. Iron in all its forms (cast, steel and rolled metal) is the most widely used construction material in the world. A world without iron and steel would be a world with no automobiles, ships, electrical appliances, bridges, food cans, etc. Forecasts continue to show growth in iron and steel consumption.



HIGH ADDED VALUE PROPERTIES

- high purity
- thermal insulation
- control of heat transfer
- steel cleanliness
- protection from re-oxidation
- skull formation prevention
- refractory wear prevention
- bridging prevention
- low sulfur and phosphorus concentrations
- minimized downtime
- energy efficient refractory linings

Mobile energy

MINERALS & PRODUCTS

Graphite is used in alkaline batteries, zinc-carbon batteries, and lithium-ion batteries for mobile electronic devices, electric/hybrid vehicles and battery energy storage. It is also found in fuel cells (systems for converting hydrogen to electricity), superconductors, and battery case coatings. Carbon blacks, as well as graphite, are used as conductive additives in the cathodes of lithium-ion batteries, primary lithium batteries and zinc air batteries.

Carbon black Graphite

World #1 in conductive additives for Li-ion batteries
World #1 in graphite for alkaline batteries

APPLICATIONS

Batteries | Rechargeable batteries

MARKETS

Automotive & Transport | Electronic & Electrical equipment | Mobile energy



With a unique portfolio of synthetic and natural graphite powders, conductive carbon blacks and custom-designed dispersions, Imerys is the leader in highly conductive carbon-based solutions for mobile energy. Imerys graphite and carbon black products are consistently the high-performance conductive additives of choice for lithium-ion batteries, alkaline batteries, advanced lead acid batteries, zinc-carbon batteries, fuel cells and battery can coatings.

MEETING NEW-GENERATION ENERGY NEEDS FOR AUTOMOTIVE

With electric cars in more and more garages, high-capacity mobile energy is definitely here to stay. Imerys is pioneering high-tech, high-performance solutions based on engineered carbon materials for rechargeable

batteries and fuel cells. Energy density—i.e. how far a vehicle can run before needing to recharge—is the main parameter, but durability, cycle stability, fast charging and cost containment are also key. In addition to performance, Imerys is particularly attentive to the sustainability of the end product and therefore operates efficient, large-scale and high-yield manufacturing platforms.



Fuel Cells
TIMREX® graphite powders are used to enhance the performance of specific key components in fuel cells. TIMREX® graphite and carbon black products allow higher electrical and thermal conductivity and can prevent corrosion and foster gas and water management.

Lead-acid batteries for micro hybrid cars
Imerys has developed a unique carbon additive used in the negative electrode of advanced lead-acid batteries used in cars equipped with start-stop function and recovery of brake energy (almost standard nowadays) and in micro hybrid cars. Marketed under the brand name, TIMREX® CyPbrid™, the additive combines the hybrid properties of a conductive carbon black and a graphite, resulting in good electrical conductivity and improved life cycle and charge acceptance.

HIGH-PERFORMANCE PORTABLE BATTERIES

The main driver for portable applications such as mobile phones is energy density or battery autonomy. Batteries are becoming thinner and more energy greedy, especially where cell phones are concerned. By offering a unique portfolio of solutions based on carbon black, synthetic and natural graphite, Imerys has developed bespoke solutions for lithium-ion batteries that boost energy density and shorten charging times. Therefore, whilst Imerys carbon black grades can be used in all lithium-ion batteries, they are especially suited for the high-capacity, ultra-thin lithium-ion batteries used in new generation mobile devices, where they improve battery charge.

in research and development and with deposits providing a sustainable supply of high-quality minerals, Imerys is well positioned to meet the technological needs of this rapid-growing market for years to come.

THE FUTURE OF BATTERIES

The 2017 acquisition of the Japanese company Nippon Power Graphite, brought with it critical technology in the realm of mobile energy, marking another step forward for Imerys into the lithium-ion battery market. The facility specializes in coating technologies which add extra performance to graphites and other synthetically produced materials and allows Imerys to address the lithium-ion battery market directly.

ANTICIPATING CUSTOMER NEEDS

Energy storage, conversion and transmission are all key research areas for industries such as consumer electronics and household appliances. Imerys is focusing its research on materials chemistry, electrochemistry and the physics of carbon. The Imerys Technology Center in Bironico, Switzerland, is dedicated to the study of graphite and carbon across a range of applications including mobile energy. The battery application laboratory in Kawasaki, Japan, specializes in high-performance applications for rechargeable batteries and fuel cells using graphites and carbons. Backed by a multi-year investment program



HIGH ADDED VALUE PROPERTIES

- high purity
- electrical and thermal conductivity
- electrolyte absorption
- improved life cycle and charge acceptance

Paints & Coatings

MINERALS & PRODUCTS

Imerys minerals offer numerous properties to enhance the performance of paints and coatings, improve mechanical and optical properties, and provide qualities such as electrical or thermal conductivity.

- Carbonate
- Carbon black
- Diatomite
- Kaolin
- Mica
- Perlite
- Synthetic graphite
- Talc
- Wollastonite
- Zirconium based chemicals

- World #1 in mica for high performance coatings
- World #1 in talc for paints
- World #1 in wollastonite for paints and coatings
- World #1 in perlite for paints and coatings
- European #1 in kaolin for paints and coatings

APPLICATIONS

- Architectural paints |
- Bio paints | Gel coats | Industrial paints | Inks | Powder coatings | Wood coatings

MARKETS

- Aerospace | Automotive paints | Coatings | Coating bases | High heat-resistant coatings | Industrial coatings | Inks | Marine and protective coatings | Special purpose / EM coatings | Traffic paints | Wind turbine coatings

Paints & coatings drive performance through demanding standards of weather durability or corrosion resistance, whilst aesthetics and creating a healthy living environment are of the utmost importance. Mastering the optical, mechanical, and rheological properties of its unique minerals portfolio, Imerys provides producers of architectural paints and industrial coatings the ideal multi-functional extender and fillers in water borne, solvent borne and powder paints and coatings.

COST-EFFECTIVE NATURAL SOLUTIONS FOR DECORATIVE AND INDUSTRIAL PAINTS

Imerys offers a spread of minerals for paints & coatings market to choose from, enabling it to match exactly the right mineral solution to the customer's end requirements. Talc, carbonate, wollastonite, kaolin, mica, perlite and diatomite are cost-effective, natural solutions which improve a host of paint properties in decorative applications, ranging from opacity to cracking, to stain resistance and adhesion. Ultra-platy talcs, wollastonites and leucophyllites offer excellent corrosion resistance, durability and sandability, which are all vital properties for industrial paints such as marine, aerospace and automotive coatings.

MEETING INCREASINGLY STRINGENT VOLATILE ORGANIC COMPOUND (VOC) REGULATIONS

Whether for high-performance coatings or decorative and industrial paints, environmental regulations are increasingly stringent with regards to VOC emissions. Not only do formulators need to meet these

regulations governing emissions, but also their own life-cycle assessment and sustainable development agendas. Imerys platy minerals such as Nyad® wollastonites, Plastorit® and Eco-Phyl® leucophyllites and Mistron® talcs demonstrate very low resin demand allowing paint manufacturers to reduce the amount of solvent they use in the finished product. Manufactured using natural ores, which are simply milled to a specific particle distribution size (no chemical additives are used in production processes), many of these mineral grades meet European Union eco-labeling standards and are excellent natural solutions for bio paints.

TEAMS FOCUSED ON INNOVATION

Imerys has a broad mineral portfolio combined with in-depth knowledge in process transformation, beneficiation processes, and world-class application expertise. The Imerys team of highly experienced coatings specialists — many of whom come from the coatings industry — helps customers improve performance and reduce costs through bespoke solutions, specifically engineered to suit their end-product requirements.



Eco-Phyl® for solvent free paints

Eco-Phyl® is a multi-functional filler for interior and exterior decorative paints and is also ideal for low and zero-VOC systems for industrial coatings. Eco-Phyl® is derived from a unique coalescence of mica, quartz and chlorite, known as leucophyllite, mined at the Kleinfestritz operation in Austria. It has a lamellar particle shape and a unique mineralogy which confer a superior matting effect, while improving the mechanical properties and weather resistance of paints and coatings.

Opacilite™ for TiO₂ replacement
Titanium dioxide (TiO₂), which provides opacity in paints, is one of the most important — but also the most expensive — materials used in paint formulations. Using our Opacilite™ kaolin as a TiO₂ extender allows paint manufacturers to reduce TiO₂ costs by up to 25% for the same opacity performance without altering the paint's other properties.

Nyad® for the aerospace industry

The low oil absorption and unique needle-like morphology of Nyad® wollastonite make it an ideal extender for high-performance. Nyad® improves the mechanical and heat resistance properties of industrial paints, increasing the service life of coatings used for ships, cars, wind-turbines and even the aerospace industry.



At Little Greene, we are committed to the protection of the environment through recycling and local manufacturing. As we produce high-quality paints, including a range of child safe paints for nurseries and toys, we need to source the best ingredients for our formulations. We always seek a reliable supplier who understands our needs, and who can offer good services, along with quality products. We also aim for local partnerships with like-minded industries that are equally committed to our core values. Discovering that Imerys Opacilite™ could provide us with a significant reduction in the loading of titanium dioxide without altering the paint properties was very important to us.

— Little Greene is an independent, British high-quality paint and wallpapers company, working in collaboration with the National Trust to find original colours used in historic buildings across the UK.



HIGH ADDED VALUE PROPERTIES

- anti-cracking
- corrosion resistance
- barrier properties
- opacity, dry hiding and TiO₂ extension
- flattening
- matting or deep-matt
- rheology, settling and applicability
- stain blocking
- weather, scrub, abrasion & UV resistance
- VOC reduction

20-25%
reduction in TiO₂ content with Imerys kaolin.

Paper & Board

MINERALS & PRODUCTS

Imerys minerals serve as fillers in paper pulp as well as being eco-friendly process enablers, providing the right chemical composition, particle size distribution, whiteness and viscosity, and optimizing production processes and quality.

- Bentonite
- Carbonate
- FiberLean™
- Kaolin
- Talc

- World #1 in kaolin
- World #1 in talc
- World #2 in ground calcium carbonate

APPLICATIONS

Deinked pulp - recycled paper | Newsprint | Packaging & Board | Printing & writing paper | Specialty papers | Tissue paper | Virgin pulp

MARKETS

Coated mechanical (Groundwood) papers | Coated woodfree papers | Newsprint | Specialty papers of all varieties | Uncoated mechanical and Supercalendered papers | Uncoated woodfree papers



Improving productivity, surface and print quality is a main concern of the pulp, paper and board industries. Polymer-free barrier coating is also an emerging trend which will allow paper and board to offer sustainable innovative applications. Imerys offers a unique set of solutions to optimize the paper and board manufacturing process with high-quality and environment-friendly solutions. Its leading positions in all key mineral formulations allow to deliver the properties required by paper and board manufacturers: brightness, gloss, opacity and printability.

ADDING VALUE TO WRITING AND SPECIALTY PAPERS

Imerys kaolins, calcium carbonates and talcs make excellent fillers and coating pigments for printing and writing papers, improving the quality and surface of coated and calendared papers for the rotogravure and matte offset printing process. Used as fillers, high brightness white minerals are cost-effective titanium dioxide extenders that can partially replace fresh fiber. As coating agents, they improve printability and deliver superior optical properties such as brightness, gloss and opacity. In specialty papers such as labels and colored papers, minerals reduce dye demand and improve color intensity.



Innovative minerals for energy-efficient processes
LinerMAX™ is an engineered kaolin designed for linerboard production. When added as a 3-5% filler, LinerMAX™ maintains the mechanical properties of the board's outer layers whilst reducing the amount of energy needed to produce the board. Used as a partial replacement of organic components in the linerboard, LinerMAX™ enables producers to dry the board using less steam than with conventional formulations.

FiberLean™ MFC
FiberLean™ MFC is a mineral/micro-fibrillated cellulose (MFC) composite which is produced using a patented, innovative manufacturing technology. This new product has great potential in the paper and packaging markets, where it allows paper and packaging producers to improve the quality and/or increase the mineral filler loading in the sheet leading to significant productivity gains and reduced costs. The product is proving highly successful for high-end wood free papers used for magazine production.



FULL RANGE OF SUPPORT SERVICES

Working at international research centers and regional laboratories, Imerys Science & Technology teams can reproduce all aspects of the paper production and printing process for customers and even run full-scale runnability trials at the client's own plant and mill.



GLOBAL TRENDS: CLEANER GREENER PULP AND PAPER

Today's paper mills are under increasing pressure not only to keep down costs but to reduce their water consumption and the amount of waste going to effluent systems. Imerys talc- and bentonite-based solutions are environment-friendly deposit control agents that can be used in place of chemical deposit control systems traditionally used to keep water circuits clean. These inert minerals enable paper mills to work with closed water circuits, reducing river pollution and water consumption. Imerys deposit control solutions are effective in virgin pulp, de-inked recycled pulp, paperboard, packaging, newsprint and tissue paper production, where they provide a cost-effective, eco-friendly solution for cleaner pulp, higher quality paper, and higher production levels. In addition they remain in the finished product as cost-effective, infinitely recyclable fillers.

EASY-TO-RECYCLE PACKAGING

The recent EU ban on single-use plastic packaging often used for foodstuffs has spurred packaging producers to look for alternative, easily recyclable or compostable solutions with the same durability properties as plastic. However, common fiberboard alternatives used for food packaging are generally coated with wax or resin coatings making them just as difficult to recycle. Working closely with leading packaging converters, Imerys has developed a range of ready-to use, water-based barrier coatings which render the packaging easily recyclable as well as enhancing the surface, printability and quality of the end product.

An average sheet of A4 paper contains

20%
carbonates.



HIGH ADDED VALUE PROPERTIES

- high whiteness, brightness & opacity
- adaptable rheology
- improved printability
- easily recyclable barrier coatings
- pitch & stickies control

Plastics

MINERALS & PRODUCTS

Minerals are also used as antiblocking agents in polyethylene, they restore mechanical properties to recycled plastics and are ideal nucleating agents in biopolymers and semi-crystalline polymers; in engineering thermoplastics, carbon black is used for its conductivity.

- Carbonate
- Carbon black
- Diatomite
- Expanded graphite
- Graphite
- Kaolin
- Mica
- Talc
- Wollastonite

- World #1 in minerals for breathable polymer films
- World #1 in talc for plastics
- World #1 in wollastonite for plastics

APPLICATIONS

- Automotive parts |
- Domestic appliances | Films & bags |
- Flooring | Pipes |
- Rigid packaging (bottles, containers, trays...) |
- Window frames | Wires & cables |
- Wood plastic composites

MARKETS

- Agriculture | Automotive |
- Building & Construction |
- Electrical & Electronic components |
- Household goods



Imerys' broad mineral portfolio offers a one stop shop to make daily life plastics stronger, lighter and cost effective. Thanks to their shape, color, particle size and purity, Imerys plastic solutions make excellent reinforcing additives and foaming agents for the production of lightweight automotive parts, domestic appliances, electronic components, PVC pipes and profiles or food packaging. Supporting sustainable lifestyles, mineral solutions allow for longer life and lower fuel consumption for tires or lighter vehicles. The carbon-based solutions are used for their exceptional thermal or electrical conductivity, accompanying the electrification of vehicles.

STRONGER, LIGHTER VEHICLES

Automotive manufacturers are constantly seeking new ways to produce lighter hence less fuel-greedy vehicles. Lightweight, talc-reinforced polypropylene (PP) is increasingly used to replace traditionally metal auto parts. Imerys' ultrafine Jetfine® and high aspect ratio HAR® talcs improve the stiffness and impact strength of PP auto parts such as bumpers, tailgates and interior trim allowing manufacturers to substantially reduce the part weight for the same performance. HAR® 3G (high aspect-ratio, 3rd generation) is a product benchmark that allows car manufacturers to produce lighter vehicles using less fuel. Used as a nucleating agent, Mistrocell® talc also improves the mechanical properties of inherently lightweight foamed plastics used for auto dashboards for example. Less weight means greater fuel economy and lower fuel consumption, which means lower CO₂ emissions. Today's cars contain an average 13 kilos of talc.



SOLUTIONS FOR RECYCLED PLASTICS

Imerys is spearheading the development of new recycled polymer products that solve compatibility issues in recycled plastics, opening up new horizons for plastics recycling. By employing the latest blending and compounding technologies and through the use of a unique mineral additive which solves feedstock miscibility issues, Imerys is able to produce mixed polyolefin compounds that behave like virgin resins. ImerLink™ is the specialty mineral additive unique to Imerys that help recyclers and compounders boost performance. Using ImerLink™ allows manufacturers to move from expensive, highly sorted recycled polymers to a more cost effective solution utilizing the mixed waste fraction. ImerLink™ extends the number of useful sources of recycled plastics and allows a higher recycling rate.



REDUCING THE CO₂ FOOTPRINT OF THE END PRODUCT

The FiberLink® family of engineered calcium carbonate allows customers to replace a percentage of polymer resin in the manufacture of fibers and nonwovens used to produce hospital masks and gowns for example. FiberLink® is not only a cost-effective solution which imparts favorable properties such as softness and opacity, it has a much lower carbon footprint than polymers used in fiber and nonwoven production. Likewise, the FilmLink™ range of ultrafine calcium carbonates for the breathable film market, designed to enhance breathability in polymer films used in nappies and medical and hygiene products, also allows manufacturers to displace polyolefin resin, reducing the carbon footprint of the end product considerably.

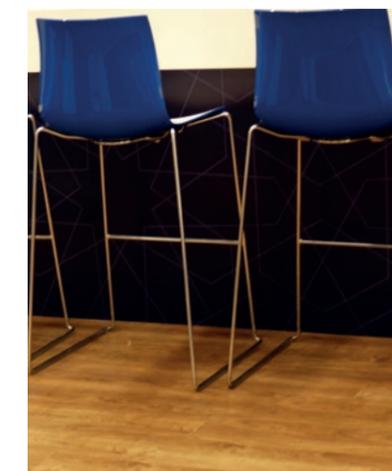
European Union Directive 94/62/EC will require European states to recycle

50%
of plastic packaging by end 2025.



FROM PACKAGING TO CONSTRUCTION, A VARIETY OF APPLICATIONS

Calcium carbonates contribute to a series of increasingly technical properties to plastics, films and polymer packaging, including opacity, mechanical strength and thermal conductivity. Ground calcium carbonate maintain blend uniformity in PVC systems, whereas precipitated calcium carbonates confer impact strength, better gellation, excellent surface gloss and good nucleation in foams. The ReMined® range is 100% pre-consumer recycled calcium carbonate used in flooring solutions, meeting customer commitments to sustainability.



HIGH ADDED VALUE PROPERTIES

- euCertPlast certification
- virgin resin replacement
- end-use specific mechanical properties
- high-level impact resistance
- batch consistency
- improved productivity

Refractories

MINERALS & PRODUCTS

From high quality minerals to high-performance binders, Imerys leads the industry worldwide in products for refractories and is particularly well positioned with solutions for sensitive stages in the production process.

- Andalusite
- Calcium aluminate binders
- Chamotte
- Clay
- Fused aluminum oxides
- Fused zirconia
- Graphite
- Molochite
- Mullite

World #1 in high performance calcium aluminate-based binders for refractory applications

World #1 in alumino-silicate minerals for refractories

APPLICATIONS

Construction

MARKETS

Aluminum | Boilers & Incinerators | Cement | Foundry | Ironmaking | Reheat furnaces | Refining & Petrochemicals | Steel making

Each refractory application is unique and requires the right solution to face extreme temperatures and harsh physical and chemical conditions. Working in close collaboration with refractory producers, Imerys develops minerals, binders, additives that meet continuous improvement requirements in steelmaking, power generation plants, incinerators, biomass boilers, glass, cement and petrochemicals industries.



A WIDE RANGE OF MINERALS TO MEET GLOBAL DEMAND

In the face of growing demand, refractories producers need to have access to a broad range of solutions. Imerys offers an extensive portfolio of high-quality minerals with different functional properties, making it a privileged partner for the refractories industry.

Imerys is the leading producer of andalusite and calcined clays and for the refractories industry. Andalusite-based products are popular in Europe and Asia for the production of fired and unfired refractories. They are particularly prized for the production of castables. Predictable thermal expansion, excellent creep resistance and refractoriness under load, high thermal shock resistance as well as terrific resistance to chemical attack, slag and metal penetration

come together in andalusite, a naturally occurring crystal. Pioneered commercially at the Glomel plant, France, and supported by a South African product range, the Kerphalite™, Durandal™, Purusite™ and Randalusite™ references are unmatched on the market. The chamotte range for general purpose refractory applications is comprised of the well-known Mulcoa®, Clayrac™ and CHK™ lines.

Imerys fused alumina and zirconia, both of which have high thermal resistance and chemical inertia properties, are used as binders in furnace linings for the steel, glass and aluminum industries, as well as in investment casting. Imerys silico-aluminous refractory solutions are used in acidic or neutral environments, and at high temperatures. Fused silicas are prized in continuous steel casting and glass roll production for their high insulation properties and good thermal resistance.



WHERE THERE IS HEAT...

High temperatures also present a risk of thermal shock, abrasion and impact. Imerys has engineered various solutions based on calcium aluminum cement concrete coupled with a synthetic calcium aluminate aggregate that successfully mitigate these risks. In addition to extreme heat resistance, these binders confer key properties to refractory concretes such as controlled fluidity, rapid setting, self-leveling, waterproofing, extended wear and abrasion resistance. Imerys is the number one supplier of high-performance calcium aluminate-based binders for refractory cements. Refractory cements are used for construction in industrial facilities which are subjected to intense heat such as foundry floors, as well as for brick and stone fireplaces, chimney flues and barbecues.

Refractory products offer resistance to extreme temperatures.

≥1,800°C



Nancy Bunt Mentor awarded for her contribution to the sector

In 2018, blazing a trail for diversity, Nancy Bunt, North American Commercial Director for High Temperature Industries, was the first woman to be awarded the St. Louis Section Theodore J. Planje Award in the Annual Refractories Symposium's 54-year history. As a mentor, Nancy inspires, teaches, trains, and develops leaders. She urges women to show their contribution to the sector, saying that she has been guided throughout her life and career by men and women, not least her mother.

HIGH ADDED VALUE PROPERTIES

- predictable thermal expansion
- creep resistance and refractoriness under load
- high thermal shock resistance
- volume stability
- chemical inertia properties
- low thermal conductivity
- oxidation resistance
- abrasion resistance

Rubber

MINERALS & PRODUCTS

Talc is a partitioning agent in rubber processing, and has many applications in the rubber industry (seals, hoses, membranes, cables, tires, etc.) to improve chemical resistance, barrier effects, whiteness and mechanical properties. Calcium carbonates facilitate processing and contribute permeability, chemical resistance, barrier properties, whiteness and mechanical properties. Chemically inert and with low heavy metal content properties, calcined kaolin is used in pharmaceutical stoppers and in high and medium voltage cables. Ball clay and kaolins offer semi-reinforcing properties. Diatomite also brings better oil resistance in silicone gaskets.

- Ball clay
- Carbonate
- Diatomite
- Kaolin
- Mica
- Talc
- Wollastonite

World #1 in talc for the rubber industry

APPLICATIONS

Cables | Floor coverings | Gloves | Hoses | Membranes | Pharmaceutical closures | Seals | Shoe soles | Tires

MARKETS

Automotive | Building & Construction | Household goods | Pharmaceuticals

Imerys offers many functional additives primarily derived from ball clay, calcium carbonate, diatomite, kaolin, mica, talc and wollastonite for rubber applications. Utilized in intermediate and finished products to improve performance and facilitate processing, mineral solutions reduce products' total manufacturing cost. They are essential components in cables, hoses, membranes, seals and tires used in the automotive, building & construction, medical as well as household goods industries.

IMPROVING PROPERTIES AND PERFORMANCE OF AUTOMOTIVE COMPONENTS

Automotive applications include exposure to some of the toughest environments rubber parts have to endure. Using Imerys minerals as processing aids and multifunctional fillers in rubber automotive components helps them meet stringent design specifications and stand the test of time. Used as cost-effective and environmentally friendly partial substitutes to carbon black, Imerys minerals improve processing while offering good mechanical properties and superior performance for tires, under-the-hood and hydraulics parts, hoses, seals, sleeves, dampers, gaskets, grommets, O-rings, profiles and weather seals. Natural and environmentally friendly solutions, Imerys talcs and wollastonites, particularly the finest grades, with the highest surface area (BET) :

- improve mechanical properties of rubber automotive components such as tear strength, abrasion resistance and tensile strength
- are effective processing aids, lowering compound viscosity and improving rubber compound flow

- improve barrier properties hence impermeability
- diminish plasticizer evaporation, giving better thermal resistance and extending service life
- provide good thermal, UV and weathering resistance, extending service life

HIGH ASPECT RATIO TALCS ENHANCE IMPERMEABILITY OF TIRE INNER LINERS

Imerys high aspect ratio talcs are the perfect solution for Low Rolling Resistance (LRR) tires as they improve the impermeability of inner liners, lowering rolling resistance, enabling downgauging and contributing to better fuel efficiency.

Engineered talcs, such as the Mistron HAR® are ideal for high impermeability applications such as tire inner liners. Developed using a unique, patented delamination process, Mistron HAR® has a higher aspect ratio than standard micronized talcs and provides improved barrier properties without impairing the mechanical performance and flowability of the compound. LRR tires generate fuel savings and reduce CO₂ emissions.

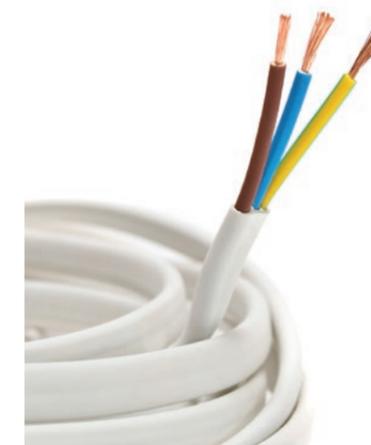


SAFE MEDICAL DEVICES

In pharmaceutical closures, Imerys talcs and calcined kaolin provide the barrier properties and durability critical to prevent substances contained in bottles from oxidizing. Meeting strict design specifications regarding contact of vulcanized rubbers with pharmaceuticals, minerals are chemically inert and do not react with medical substances. Natural rubber is the most important product to be obtained from Latex, and has a wide range of applications. Calcium carbonate is mainly used for surgical gloves to produce its required flexibility. Mainly used as a filler to save cost – 15-40% loading amount – calcium carbonate also provides reinforcement properties for the natural rubber gloves market.

FIRE RESISTANT WIRE & CABLE

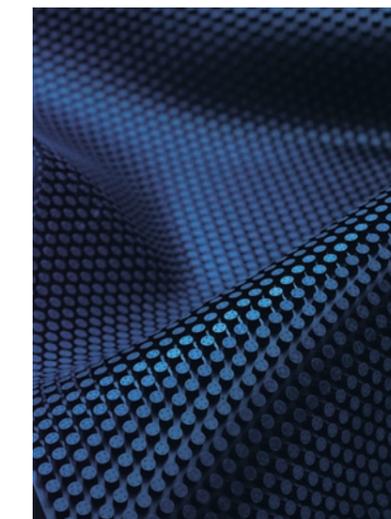
Imerys talcs and micas act in synergy with flame retardant fillers and additives, creating a physical barrier to fire, reducing combustion rate, improving char strength and decreasing smoke quantity and rate of emission. Talc's hydrophobic and electrically neutral platelets make it an ideal insulator for Ethylene Vinyl Acetate (EVA) wire and cables. A natural, environmentally friendly solution, it also works in synergy with metal hydrates for outstanding fire resistance. In cable sheathing applications, talcs also improve a host of other parameter such as: abrasion resistance in heavy-duty cables, fluid resistance for cables in contact with water, compound extrudability and surface finishing. Talc is also an ideal carbon black extender and internal lubricant reducing the viscosity of compounds. Micas are excellent flame retardant extenders.



15-40%
of calcium carbonate
in natural rubber gloves.

compression and tension set, they also improve fatigue growth, crack resistance, barrier properties, and minimize wear on extruder screws and dies.

In household appliances, Imerys talcs, wollastonites and micas make excellent multifunctional, reinforcement fillers for conventional or thermoplastic rubber products such as hoses, washers, seals, stoppers, flappers, gaskets, o-rings, grommets and cables used in household appliances such as washing machines and tumble dryers. Offering more reinforcement than kaolin, ball clays give excellent compression set and abrasion resistance. A common application for ball clays and calcium carbonate are in the shoe soles and rubber floor mat industries. Kaolin is used for clothing rubber bands; calcium carbonate in swim caps.



IMPROVING PERFORMANCE AND DURABILITY OF INDUSTRIAL APPLICATIONS AND DOMESTIC APPLIANCES

Used as multifunctional fillers and processing aids, Imerys minerals improve the performance and durability of molded and extruded profiles, seals and gaskets used for industrial applications. They are ideal reinforcing agents improving mechanical properties of rubber compounds such as tensile strength, modulus and tear resistance. They are efficient processing aids, lowering rubber compound viscosities and improving extrusion flow. Reducing rubber compound nerve, improving

HIGH ADDED VALUE PROPERTIES

- barrier effect
- chemical resistance
- extending service life
- fire resistance
- mechanical properties
- multifunctional filler
- processing & partitioning aid
- reinforcement properties
- thermal resistance

Perform



**With safe
and efficient
processes**

Imerys prioritizes high performance and excellence for its products, operations, and its people. Safety and health are core commitments which, combined with a strong program of continuous operational excellence improvement, are key strengths to deliver long-term value for all stakeholders and to meet market demands, expectations, and challenges.

42%
of 2018 training
hours dedicated
to EHS

3
Safety
Summits



Ball clay

175
sites deployed
Imerys Industrial
Improvement "I-Cube"
Program

119
safety visits
by Executive
Committee

In 2018

Committed to safety

Increasing the Group's focus on ensuring the safety and health of its people and partners is an unyielding commitment. To meet this challenge, Imerys develops and maintains an active culture around these issues, involving management, employees, contractors, suppliers, and the communities in which it operates. The Group's actions to develop a proactive safety and health culture is outlined in its Health and Safety Charter, a framework for continuous improvement through a set of standards that apply to all employees, contractors, and visitors.



Ongoing investment in safety training and technology has helped lower injury rates to well below those of peer companies. An essential contributor is a proactive culture encouraging the personal involvement of each individual in achieving an incident-free workplace. The ultimate goal is zero injuries. To achieve its safety goals, Imerys also focuses on the health and safety of its contractors, sub-contractors, partners and the communities in which it operates.

LEADING BY EXAMPLE

Senior management plays a pivotal role in the Group safety culture by engaging employees in continually improving safety performance and leading by example. Employee behavior is the foundation of a sustainable safety culture. Given the importance of Behavior-Based Safety (BBS), Imerys' operations also implement specialized BBS programs and integrate behavioral factors into regular safety inspections. This culture promotes bottom-up ownership of safety.

TRAINING IS A PRIORITY

Safety training is paramount to guarantee the right behaviors across the Group, across all functions. Dedicated training tools and systems include safety summits, the Imerys Safety University (ISU), online seminars, online training courses, Safety Toolbox meetings, induction seminars for new managers, and safety information communication campaigns. In 2018, a new "Slips, trips and falls" prevention campaign was launched to keep increasing awareness on how some behaviors can impact both professional and personal lives, sometimes with life changing consequences.

Every year in June, events are organized on the dedicated Safety Connect Day across the entire Group. With a different theme each year, these events require all employee active participation. Activities are adapted to the local context and environment.

To consolidate its safety culture, Safety Culture Improvement Team (SCIT) events are held worldwide. In 2018, an awareness and training campaign regarding the Serious

Seven critical safety compliance initiative was made mandatory for all Imerys employees. Other tools include the "Take 5 - Think before you act" program and the "Visible Felt" safety leadership program. In October, the Group launched a major training campaign on the "Serious 7", life saving rules. Shop floor employees around the world received classroom training while supervisors and managers had to go through an interactive online training. The initiative extended into first quarter of 2019 and involved more than 93 percent of employees.

SAFE AND HEALTHY

Occupational health protocols are equally important and cover such areas as airborne contaminants, vibration and noise. They are systematically reviewed for improvement, simplification and standardization. In 2018, the Group appointed a new Industrial Hygienist, and a detailed Group occupational health roadmap will be formalized in 2019.



Award-winning innovation improves mining safety

The American National Institute for Occupational Safety and Health (NIOSH), a division of the Center for Disease Control (CDC), recognized Imerys' achievement in mine safety, awarding Imerys the National Minerals Award for the development of a moisture-tolerant rock dust.

Rock dust is used in underground coal mining to reduce the chance of fire propagation in mine shafts. When regular rock dust becomes wet, it dries into a cake form that will not disperse with a puff of air, making it ineffective or less effective.

The Imerys product, ImerCoal™ is a unique and patented calcium carbonate-based rock dust that is moisture tolerant and still as effective as existing products in its ability to prevent explosions. ImerCoal™, a cost-saving solution as it does not need to be reapplied as frequently as other rock dust, is applied in the same way as conventional rock dust, so operators do not need to buy new equipment.



We have rules that will keep us safe if we respect them diligently. We implement safe conditions in the workplace but this is not enough to make sure we stay injury-free. It is up to each of us to act and help to address the risks we encounter on our workplace. A safe workplace does not come for free.

— Alexander Kristen, Director for Industrial Health and Safety

30 Safety Culture Improvement Team events conducted in 2018.

300 participants in special sessions of Imerys Safety University.

1.36 lost-time accidents per million hours worked.



Updated Personal Protective Equipment protocol

Employee well-being includes being protected and as comfortable as possible. Imerys' updated Personal Protective Equipment (PPE) protocol introduces personalized safety wear such as prescription safety glasses and hearing protection molded to the shape of each individual's ear. Personalizing PPE also makes it more effective. Across Imerys, there is a strong culture of health and safety, and good discipline in the use of PPE.



Safety Connect Day

The second annual Safety Connect Day, held in June 2018, echoed the messages of the Group's Health and Safety policies, calling upon employees to get personally involved in making positive changes. The theme "My Personal Commitment to Safety" urged all Imerys' sites around the world to make a safety pledge, and events promoted the message that each individual effort adds up to a collective commitment to stay safe across the entire Group.

Operational excellence

Excellence is at the heart of Imerys' value proposition. High operational standards in terms of quality, service, local presence and innovation guide the Group's customer-focused culture, and a structured approach to continuous improvement strengthens performance at all levels. Mining and process expertise are key assets to optimize resource efficiency in adapting the right process to each application's requirements.



Engaged in a permanent quest for excellence in its products, its production resources, its people and their safety, Imerys introduced a program to continuously improve its industrial processes and performance in 2014. Known as Imerys Industrial Improvement, or I-Cube for short, it has two central aims: improve the work conditions and the empowerment of employees as well as

improve facilities performance through an annual performance cycle; this is done through defining shared standards and indicators, and also through sharing of best practice. From safety to production, energy efficiency, resource management and waste recovery and recycling, continuous improvement is as essential as empowering employees to deliver that improvement.



Continuous improvement is the road to top-of-the-line operations, innovation, profitability and attractiveness. We must keep raising the bar.

— Jean François Claver, Chief Industrial Officer

I-Cube program rolled out across

175

sites, including 39 in 2018.

RAISING THE BAR AND SPEEDING-UP TOGETHER IMPROVEMENT CULTURE (STIC)

Operations are key to remaining innovative, profitable and attractive, and the Group calls on everyone, from managers to operators, to attain high standards on this path to excellence. As part of this effort, Raise the Bar, a new I-Cube maturity matrix, was released in 2018 to support the new Speed-up Together Improvement Culture (STIC) process.

This process is being used to evaluate the level of I-Cube culture in different plants. It introduces the Raise the Bar philosophy and increases expectations from industrial teams. The goal of STIC is to identify the main strengths and improvement opportunities for each area in order to accelerate benchmarking within Imerys. The full roll-out of the STIC program is planned for 2019.



SPOTLIGHT ON TRAINING

To embed safety and continuous improvement into management concepts and tools, a training and development plan was rolled out in Operations. A one-day training session, based on the ADKAR model (Awareness, Desire, Knowledge, Action, Reinforcement), was held during a seminar in February, to help Operations managers lead change. Induction sessions targeting new plant managers are designed to help them better understand the Group's approach to continuous improvement. In 2018, 19 new plant managers from more than 10 nationalities gathered over 3 days to learn about the Operations processes, the I-Cube program as well as finance, human resources, corporate social responsibility, etc. A special training for supervisors, Lead My Team, has also been developed to improve the management skills of shift leaders (first level of management). These skills are improved through Group case studies taken from safety or continuous improvement situations.

Imerys sites that have implemented I-Cube are encouraged to share their successes. Seminars and benchmarking allow sites to compare and improve their operational excellence progress.

IMPROVING ENERGY MANAGEMENT

Imerys is improving energy management and driving excellence through the I-Cube Program. Since 2016, the Group has been focusing on energy management of 12 key industrial sites, which represent approximately 30% of the Group's total energy consumption. Specific energy efficiency improvements projects at these sites within the I-Cube program generated 74% of the energy saved by the Group in 2018.

76%

of all Imerys' sites are implementing the operational excellence program, covering 84% of gross margin.

Over **100**

energy saving projects were identified and initiated in 2018 within the I-Cube Program.

42%

non-hazardous industrial waste recycled in 2018.

-5%

total energy consumption/revenue since 2014.



State-of-the-art production facility committed to diversification

In the summer of 2018, the Rubi site in northern Spain, near Barcelona, opened a new production line for specially engineered perlite microspheres of natural origin as an environmentally friendly alternative to plastic beads. The full project took over 2 years, from conception, engineering and construction, involving more than 10,000 hours of engineering, 20 different contractors and 15,000 construction man hours. The actual erection of the plant took 9 months. Independent from the rest of the plant and hosted in a new building, this new line is entirely dedicated to the new product range focused on personal care, mainly Imercare P-Scrub and ImerScrub. New packing lines and a dedicated storage and quality control areas were also integrated. Conveniently located near Barcelona port, the Rubi plant is Imerys' most advanced perlite processing platform.

Respect



Casa Imerys, Brazil

To support sustainable growth

Corporate Social Responsibility (CSR) is key to Imerys' long-term strategy, supporting growth and value creation, and underpinning constructive relationships with stakeholders across the globe. The Group's business growth and transformation includes contributing to sustainable development through systematic continuous improvement of non-financial performance across the entire Group. In 2018, Imerys launched a new CSR program, SustainAgility, structured around three key areas: "Empowering our people," "Caring for our planet," "Building for the future." This program builds on existing systems and initiatives and will help the Group to go towards a program fully aligned with the United Nations' Global Compact and Sustainable Development Goals (SDGs).

+62
projects
for local
stakeholders
in 2018

75%
loyalty on
Employee
Engagement
survey
in 2018



Feldspar

Contribution to
9
United Nations
Sustainability
Goals (SDGs)

- Good health and well-being (SDG 3)
- Quality education (SDG 4)
- Gender equality (SDG 5)
- Clean water and sanitation (SDG 6)
- Decent work and economic growth (SDG 8)
- Responsible consumption and production (SDG 12)
- Climate action (SDG 13)
- Life on land (SDG 15)
- Peace, justice and strong institutions (SDG 16)

-6%
total CO₂
emissions /
revenue
since 2014

Empowering our people

“Empowering our people” is one of the primary ambitions of the Group’s corporate responsibility program which focuses on making sure employees stay healthy and safe, nurturing talent, promoting diversity and inclusion, ensuring open social dialog, and safeguarding human rights and labor practices.



Human capital is at the heart of Imerys’ business. This means providing the best possible working conditions and developing a proactive health and safety culture across all levels of the business and the value chain (see page 44-45). Furthermore, employee development is a key element of growth. Human Resources policies and practices are based on fairness, openness and mutual respect, allowing employees to develop through varied and fulfilling careers across the Group.

DEVELOPING TALENT

Talent and skill management is essential to maintain an innovative, engaged, and motivated workforce and to ensure long-term growth. The Group strives to continually improve Human Resources processes, to attract new and highly experienced managers, and likewise to focus on developing the Group managers of the future. In 2018, Imerys welcomed 24 graduates from 8 different

nationalities in its Graduate Program, an initiative designed to foster diverse talent with an international mindset.

Imerys Leadership Behaviors, which were rolled out in 2016, have become an integral part of the entire talent management cycle, from recruitment through to succession plans. Furthermore, a global onboarding program was deployed in 2018 based on best practices from across the Group and ensuring that all new employees receive key messages and information directly after arrival.

DOUBLING TRAINING CAPACITY

In recent years, the Group has put a great amount of effort into bringing together a large variety of training courses to address specific development needs of Imerys’ employees. IM-Pulse, the Group learning solution, provides a constantly evolving training offer for managers and employees.

Sustainable Development Challenge develops talent
Fostering positive changes, the Group Sustainable Development Challenge provides a space for all Imerys’ employees around the world to share best practices in responsible operations. In 2018, a total of 18 new projects, out of 143 submissions, focused on talent and skill development. A winning example involved the Ceramics Academy, which set up a technical training path to ensure a smooth transfer of knowledge between experienced managers and the sales & operations population.



Safety Trainings, Inclusion Starts with Me, Operations & Me, Reporting & Consolidation Campus are only some examples of training that were developed, along with dedicated sessions to support transversal projects. In 2018, IM-Pulse doubled its capacity, making it possible to reach more people and support their development. The solution also added a mobile version with an offline My Learning app, allowing employees to learn anywhere and on any device.

ENCOURAGING DIALOG

With its wide variety of diverse profiles, Imerys recognizes that managing relations with employees is critical to creating an environment in which everyone can excel. Constructive, open dialog, communication campaigns, a collaborative social platform, welcome sessions and collective bargaining agreements are all part of the Group’s commitment to having a positive impact through employment practices.

Employee commitment and diversity represent a considerable strength for the Group.

— Vincent Lecerf,
Chief Human Resources Officer

13,636
employees trained.

508,356
hours of training.

40%
of external recruits for senior management positions were women.

Data for 2018.



Committed to diversity and inclusion

Imerys’ Diversity and Inclusion Charter was updated in 2018 and translated into 23 languages, clearly articulating a shared commitment to achieving greater diversity and inclusion across the Group. Programs are deployed at global and local levels and include the promotion of non-discrimination and equal opportunity, in particular with regards to human resources management. To this effect, in 2018, the Group recruitment and mobility policies and practices were updated to reinforce diversity. In 2018, as a result of these policy updates, which required a broader pool of equally qualified candidates to be presented in the selection process, 40% of external recruits for senior management positions were women. Also, a dedicated section on diversity and inclusion within the IM-Pulse e-learning platform was enriched to provide a wider range of practical resources and tools for training and awareness campaigns related to inclusion. The 2018 Sustainable Development Challenge gave greater visibility to diversity and inclusion commitments by adding a new award category.

Caring for our planet

“Caring for our planet” at Imerys includes protecting the environment, promoting resource efficiency, preserving biodiversity, and acting on climate change. The Group is committed to the responsible environmental stewardship of its industrial sites and to reduce the environmental footprint of its production process.



Environmental stewardship rests upon the implementation of robust Environmental Management Systems (EMS), a key factor to improve operating efficiency while reducing impacts. Imerys requires each operation to have an effective EMS. In 2018, the Group began the pilot roll-out of a new integrated solution to manage environmental legal compliance and regulatory monitoring.

USING RESOURCES EFFICIENTLY

The Group is constantly developing ways to create a more sustainable value chain while producing high-performance end products for customers. The technological know-how of Imerys enables the Group to improve the yield on materials of its operations. An example of this approach is demonstrated by the “R3” project developed in India, which revolves around reducing the use of virgin raw materials, reusing the downgrades from processing and recycling consumed refractory or

industrial waste that would otherwise end up in landfills. This project, launched in all three plants dedicated to the production of monolithic refractories, has permitted the partial substitution of 25 raw materials to date. Imerys also aims to reduce its water footprint by recycling water and working towards innovative ways to reduce the amount of water being removed from natural habitats and by developing innovative ways for recycling water within its operations. For instance, the plant at the port of Barcarena in northern Brazil, has introduced a new system to re-use some of the steam released in the kaolin evaporation process, so far saving 23% of water normally drawn from wells.

BIODIVERSITY

Given the serious global threat to biodiversity, Imerys is deeply committed to respecting the ecosystems surrounding its operations and preserving biodiversity

throughout the life of its mines, in alignment with the main goals of the Convention on Biological Diversity (CBD) and the general commitments of the act4nature initiative. Rehabilitation is integrated into the Life of Mine (LOM) plan and considered throughout project execution during mining operations until mine closure.

Imerys also formed a scientific partnership for the period 2018-2021 with the UMS Patrimoine Naturel, a French natural heritage umbrella bringing together the National Museum of Natural History, the French Agency for Biodiversity and the National Center for Scientific Research (CNRS). With this scientific support, the Group launched an analysis of the impact of its activities, based on the environmental sensitivity mapping of its sites and an inventory of biodiversity practices. To date, pilots have been launched on Group sites in France, Greece and Brazil to test tools and methodologies.

Imerys is also committed to the act4nature initiative that has been launched by Entreprises pour l'Environnement (EpE) and other partners with the aim of mobilizing businesses to protect biodiversity. For Imerys, this is an opportunity to contribute further to this new dynamic, with existing and new solutions. Goals include deploying a continuous improvement approach, conducting studies, developing pilot projects, and raising awareness of both internal and external stakeholders.



CLEANER ENERGY MAKES FINANCIAL AND ENVIRONMENTAL SENSE

Imerys currently has 17 renewable energy installations producing 52MW of solar, wind, district heating and hydroelectric power. Renewables on site reduce electricity costs and provide an opportunity to make the most out of unused surface. Rehabilitated mine surfaces offer perfect opportunities to host solar panels for clean energy production.



Bee conservation success story goes Group-wide

Founded in 2016 with the support of the French National Beekeepers Association and other local associations, the Imerbees initiative now has more than 50 beehives located in Europe, the US and New Zealand. The honey is distributed free of charge to Imerys employees and/or donated for local community programs. Employees and site managers are excited to support this initiative and proud that the Group is now extending the program to all its sites.

€120,000

estimated annual revenue from 1MW of wind power installed.

52 MW

of renewable energy installed across 17 Imerys sites.



Saving rare seedlings

Thousands of rare seedlings are being grown and planted to protect and enhance the biodiversity of the Aegean island of Milos. The local entity formulated an ambitious plan to save six rare native species from extinction receiving a 2018 SD Challenge Award.

Combating climate change

Climate change is a major global challenge. In 2017, on the occasion of the International One Planet Summit, Imerys became a signatory of the French Business Climate Pledge, affirming its engagement to contribute to the collective efforts to take urgent action to combat climate change and its impacts. As such, Imerys has pledged to define its Climate Change strategy to align its emission targets and trajectory to a 2°C scenario. In September 2018, the Group committed to the Science Based Targets initiative (SBTi), which aims to support companies and ensure reduction targets for greenhouse gas emissions are in line with international objectives.

≈ €5,000

average annual revenue from solar power per hectare of land.

Sustainability award goes to energy system

In an example of how operations can be proactive on environmental topics, the Imerys processing plant in Tsigrado, Milos, Greece, developed a system to reduce energy consumption. The FLU-ACE system cuts consumption of heavy fuel oil by 8%, while simultaneously producing industrial water. At Greece's 2018 Bravo Sustainability Awards, organized by the QualityNet Foundation, the system stood out among the top 100 nominees, receiving the highest score from the 9,250 active citizens and 130 social partners forming the evaluation committees, coming out on top of the Bravo Market category. The Bravo Awards set out to develop a dialog on sustainable development through case studies from businesses, local authorities, civil society, and schools.



Building for the future

As a company with 17,800 employees across 50 countries, Imerys is committed to be a responsible business and a force for positive change. This means behaving ethically, operating fairly, and ensuring a responsible supply chain. It also means engaging with communities and promoting innovative sustainable products and technologies.



Imerys believes that maintaining high standards of social and environmental behavior across all its activities is essential to achieve its financial and non-financial goals. To do so, it combines strong corporate governance and a Code of Business Conduct and Ethics that spells out the Group's commitments. In 2018, the Group launched a new, updated Code, available in 23 languages. A key tool for employees and management, the Code also applies to all business partners, including joint ventures, suppliers, and agents. The Group also launched a new alert system, operated by an independent qualified third-party and open to all employees and external parties.

COMMUNITY ENGAGEMENT

The Group actively encourages sites and employees to contribute to their respective communities. Identifying and understanding stakeholder needs and expectations is key, as is actively sharing talents and skills and supporting initiatives that create shared value for local communities. In the 2018 Sustainable Development Challenge, over 40% of the 143 initiatives competing were

linked to community engagement projects launched by Imerys sites in 23 countries across the world. Community engagement initiatives take many forms. For example, in Hat Som Paen, a touristic village of the Mueang Ranong district in Thailand, Imerys supported small business opportunities by providing technical training. In Kadthal, India, Imerys provided antivenom for snakebites in eight remote rural communities, saving 54 lives in 2018.

Imerys is committed to supporting education, promoting equal opportunities and focusing its actions towards young adults, women and girls, and people in socially fragile situations. In 2018, several local projects focused on contributing to improve school facilities in Zacoalco (Mexico), Ipoh (Malaysia), Bronkhorstspuit and Limpopo (South Africa), Yên Binh District (Vietnam), Ping Tung (Taiwan) and Sarapaka (India). Imerys also created opportunities for students through sponsorships in Ontario (Canada) and Milos (Greece), vocational orientation in Ranong (Thailand), as well as apprenticeships and first job experiences in Barcarena (Brazil), Bekasi (Indonesia), Three Springs (Australia),

and Cornwall (United Kingdom). Additionally, Imerys ensured that more children with disabilities have the opportunity to attend school through contributions to different educational institutions in Ilion (Greece), Lac-des-îles (Canada), and in Silvassa (India).

PRODUCT SUSTAINABILITY

Imerys is committed to developing products and expertise to deliver relevant and innovative market-driven solutions to support the growth of the Group while at the same time deliver solutions to society. In 2018, Imerys launched an assessment tool in line with the World Business Council for Sustainable Development (WBCSD) framework for Portfolio Sustainability Assessments (PSA), so as to objectively measure the sustainability of Imerys products and quantify their environmental and social footprints. In parallel, Imerys has continued to calculate products' environmental impacts from "cradle-to-gate," using a Life Cycle Assessment (LCA) methodology compliant with the requirements of ISO 14040 & ISO 14044. A total of 14 new LCAs were completed for Group products in 2018.

Imerys signs the United Way Alliance Manifesto

Committed to creating value through education, Imerys has supported *L'Alliance pour l'Éducation* for several years. When the organization merged with United Way, a non-profit with over 130 years of history and active in 41 countries, Imerys signed the United Way Alliance manifesto in November 2018. The organization aims to ensure that every child gets a strong start in life, that teenagers have the tools to learn and grow, and that young adults thrive in the job market.



Delivering sustainable solutions

Newly developed applications make it possible to transform low-grade materials, tailings and wastes into marketable resources. The Imerys ReMined® solutions produced from calcitic white marble, are 100% certified as pre-consumer recycled materials and eligible for various green building credits in the United States.

Over **40%** of the 143 initiatives competing were linked to community engagement projects launched in 23 countries across the world.

Highlighting industrial minerals

From November 12 to 16, Imerys attended EU Raw Materials Week. The event brought together industry stakeholders, including members of the European Commission, representatives from universities and research organizations, and experts in innovation and the development of raw materials policies. Deeba Ansari, Science and Technology Director within Performance Minerals EMEA, spoke at the event about aligning raw materials production with the United Nations' Sustainable Development Goals (SDGs). Many attendees were impressed by the work Imerys is doing, particularly with local communities. Being at these events strengthens industrial ties and links in with the work Imerys is doing around corporate social responsibility.

Key partnerships to create tomorrow's products

In 2018, the Group partnered with the Massachusetts Institute of Technology's (MIT's) Industrial Liaison Program (ILP) and Pennsylvania State University, to review megatrends' impact on customers current and future applications. Universities and leading research centers have always been partners of choice for technical developments.

Partnering with NGOs

For Imerys, engaging in local communities includes helping out in times of need, with such actions as providing high-performing ImerPure™ gravity water filters to non-governmental organizations responding to natural disasters, such as the October 2018 flood that hit Kerala, India.



Innovations for the future

Annually, nearly 450,000 people die from malaria. While insecticides have helped reduce this figure in recent years, mosquitoes are becoming resistant to these treatments. With this in mind, Imerys' Innovation team developed an award-winning product that could help the Group break into a tightly controlled sector. Imergard WP is a wettable powder that can be sprayed on walls, killing mosquitoes that land on it. The new-to-the-world, perlite-based mechanical insecticide demonstrated distinct advantages over traditional chemical insecticides used in the industry. On October 4, 2018, and for the third time in a row, Imerys received the Industrial Minerals Association (IMA) award for Innovation for Imergard™ WP. Imerys already received the IMA award in 2016 for its product ImerCare P-Scrub, an environmentally friendly perlite-based alternative to plastic microbeads.



Main events

2019

JANUARY

27/01 – 1/02 • Advanced Automotive Battery Conference
Strasbourg, France

18-20 • IFEX
Delhi, India

FEBRUARY

28/02 – 3/03 • Delphi Economic Forum
Delphi, Greece

27 - 01/03 • Indian Ceramics & Ceramics Asia
Gandhinagar, India

27/02 – 1/03 • Battery Japan
Tokyo, Japan

26-28 • Middle East Coatings Show
Dubai, UAE

24-27 • SPE Polyolefins
Houston, USA

13 • Imerys 2018 Annual results
Paris, France

MARCH

19-21 • European Coatings Show
Nuremberg, Germany

16-19 • Keramika
Jakarta, Indonesia

5-9 • AOCS Annual Meeting & Expo
St-Louis, USA

APRIL

21-24 • Chinaplas
Guangzhou, China

21-23 • EuroBrake
Dresden, Germany

15-18 • FIPA
Bélem, Brazil

10 • Imerys Shareholder's General Meeting
Paris, France

7-9 • The Battery Show Europe
Stuttgart, Germany

6 • Imerys 2019 First Quarter Results
Paris, France

5-6 • Ceramics Expo USA
Cleveland, USA

27-30 • AFS CastExpo
Atlanta, USA

10-11 • Graphene & 2D Materials
Berlin, Germany

9-11 • Powertech/Partech 2019
Nuremberg, Germany

8-12 • Feiplastic
São Paulo, Brazil

2-4 • In cosmetics
Paris, France

OCTOBER

29 • Imerys 9 months 2019 results
Paris, France

16-23 • K Show
Düsseldorf, Germany

13-16 • UNITECR 19
Yokohama, Japan

10-12 • 2019 China International Paper Technology Exhibition and Conference (CIPTe)
Shanghai, China

6-9 • SPE Auto Conference Detroit
Troy, USA

1-3 • Abrafati
São Paulo, Brazil

JULY
AUGUST

28-30/08 • Asean Ceramics
Bangkok, Thailand

25 • Imerys 2019 Half Year Results
Paris, France

10-11 • Ceramics UK
Telford, UK



JUNE

15-19 • Conference of the European Ceramics Society (ECerS)
Torino, Italy

14 • Imerys Imerys Safety Connect Day

13 • Imerys Capital Market Day
London, UK

11-13 • Forn&Cer
Santa Gertrudes, Brazil

4-5 • Compounding World Congress
Cologne, Germany

NOVEMBER
DECEMBER

5-7/12 • Ceramics Expo Bangladesh
Dhaka, Bangladesh

24-25 • ICCX Middle East
Sharjah, UAE

21-23 • ICS Egypt
Cairo, Egypt

13-15 • 60th Battery Symposium
Kyoto, Japan

26-27 • ICR Aachen International Colloquium on Refractories
Aachen, Germany

16-20 • 2019 International Congress on the Chemistry of Cement (ICCC)
Praha, Czech Republic

SEPTEMBER

25-29 • METEC
Düsseldorf, Germany

25-29 • GIFA
Düsseldorf, Germany

24-26 • ILCCC 2019 – Innovation In Low Carbon Cement & Concrete Technology
London, UK

23-27 • JiCable
Versailles, France

18-21 • Ceramics China
Guangzhou, China

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