Mineral Solutions for Electrical Porcelain Insulators

Imerys Ceramics, your partner from low to ultra high voltage AC & DC porcelain insulators

As the international market leader for industrial minerals, ceramic bodies and glazes, Imerys Ceramics uses its unrivalled product portfolio, commercial and technical expertise to offer mineral solutions to the global electrical porcelain industry.

Imerys Ceramics’ guaranteed consistent minerals help you to maintain constant high yields during the production of insulators.

Our mineral solutions contribute to the high performance of your electrical porcelain insulators to safely maintain and distribute energy and power in all environments.

VALUE-ADDED PRODUCTS

Ceramics expertise applied to Electrical Porcelain Insulators

From its mines and processing plants, Imerys Ceramics has engineered a range of mineral and prepared body solutions dedicated to the needs of the electrical porcelain industry. Our solutions are developed to provide high yields during the production of insulators, and ensure excellent performance in service.

Imerys Ceramics’ mineral solutions have a number of unique properties:

- very high consistency
- very high levels of plasticity
- high mechanical strength
- high alumina content
- low iron and carbon contents

The right mineral for the right process

The plasticity and consistency of our ball clays make them ideal for the shaping of complex pieces and large insulators currently produced by the state-of-the-art technology for ratings up to 1200 kV AC and 800 kV DC. Our product portfolio also allows for different firing cycles and temperatures. Our solutions are suited to all electrical porcelain forming techniques.

Ball clays

Suited for all voltage insulators including the latest generation up to 1200 kV AC and 800 kV DC, our selected ball clays have the following properties:

- consistency
- high plasticity to allow the shaping of complex pieces
- high unfired strength to minimize breakage that can occur from shaping, handling, and during drying phase
- low organic content to minimize the risks of bloating, black coring and voids formation arising from burnout.

They also allow faster firing cycles, in both oxidation and a reducing atmosphere that would not be achievable with another more carbonaceous product.

- low residue to limit sieving wastes

Prepared bodies

Imerys Ceramics offers tailor-made electrical porcelain bodies for different firing temperatures and atmospheres. Our prepared bodies help manufacturers meet the relevant sections of the industry IEC 60672 standards.

Engineered at one of our European ceramic preparation plants, our prepared bodies have a significant impact on our customers’ production throughput improvement:

- enhanced consistency
- reduced maintenance costs
- ensure highest yields along the production process

Kaolins

Selected for their high alumina content and low pyroplastic deformation, these kaolins are particularly suited for large piece insulators. Their main characteristics are:

- low free quartz particles
- a range of particle size distributions to allow optimized particle packing

Feldspars

Suitable for all insulators up to UHV, these feldspars are:

- high in $K_2O$: resulting in low pyroplastic deformation
- low in $Na_2O$: maximising dielectric properties
- low $Fe_2O_3$ & $TiO_2$: benefiting fired colour
FULL EXPERTISE

Covering the whole range of HV to UHV insulators
Engineered to help you meet the exacting demands of your downstream market (electricity producers, TSO/DSO and transformers’ manufacturers), our mineral solutions contribute to the safe transfer of the highest levels of electrical flow.

Imerys Ceramics’ products are suited for the manufacture of high and ultra-high voltage insulator types: bushings, long rods, line-posts, discs...

Unparalleled quality and technical services worldwide
Thanks to a comprehensive understanding of the challenges faced by electrical porcelain producers, Imerys Ceramics constantly strives to supply the highest level of products and services:

- selected product portfolio
- global sales network ensuring local customer support
- minerals, formulation and technical expertises
- technology centres in France, Germany, Thailand and the UK

At our Imerys Ceramics Technolog Centres in Europe and Asia, our activities include developing cost effective and innovative solutions adapted to electrical porcelain producers’ needs:

- mineral technology
- product development
- customer technical partnerships

TAILORED SERVICES

Imerys Ceramics stands for high quality products, technical and process experts, logistics solutions and production support to bring its customers the best possible value. With clients in India, China, South East Asia, Japan, Europe, North Africa, Brazil, Colombia, Mexico and the US, the electrical porcelain engineered solutions from Imerys Ceramics have a proven and long track record.

The partnerships we develop with our clients enable them to be market leaders in their industries.

Electrical porcelain insulator manufacturer’s success story
A manufacturer of electrical porcelain insulators approached Imerys Ceramics for assistance in reducing its level of production losses.

After the evaluation of the raw materials used and the manufacturing process, Imerys Ceramics R&D technicians developed a new body formulation that included both Imerys ball clay and kaolin. Successful laboratory tests were subsequently confirmed by factory trials. The new formula was implemented in full scale production. Imerys Ceramics’ modifications resulted in:

- increased green strength & plasticity
- reduced carbon content
- superior drying performance

This reformulation proved to be the optimum balance of the high performance of Imerys Ceramics’ solutions and the use of local raw materials for:

- easier shaping for larger & more complex insulators
- firing time reduction
- superior drying performance
- less distortion
- lower production losses

Teams dedicated to electrical porcelain insulators worldwide
Imerys Ceramics has regional hubs in Asia, Europe, Africa, North and South America. Thanks to a global network of production sites across several continents, we have a large and varied portfolio. Our integrated logistics network offers customers the benefits of reliable supply chain services.

Serving customers worldwide

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