



IMERCARE[®]

Natural. Mineral. Beautiful.

ImerCare[®] VitalSkin

Natural mineral antipollution agent
for make-up powders

- Shield against pollution
- Unique patented technology
- Natural, Cosmos approved
- INCI: Diatomaceous earth



IMERYS



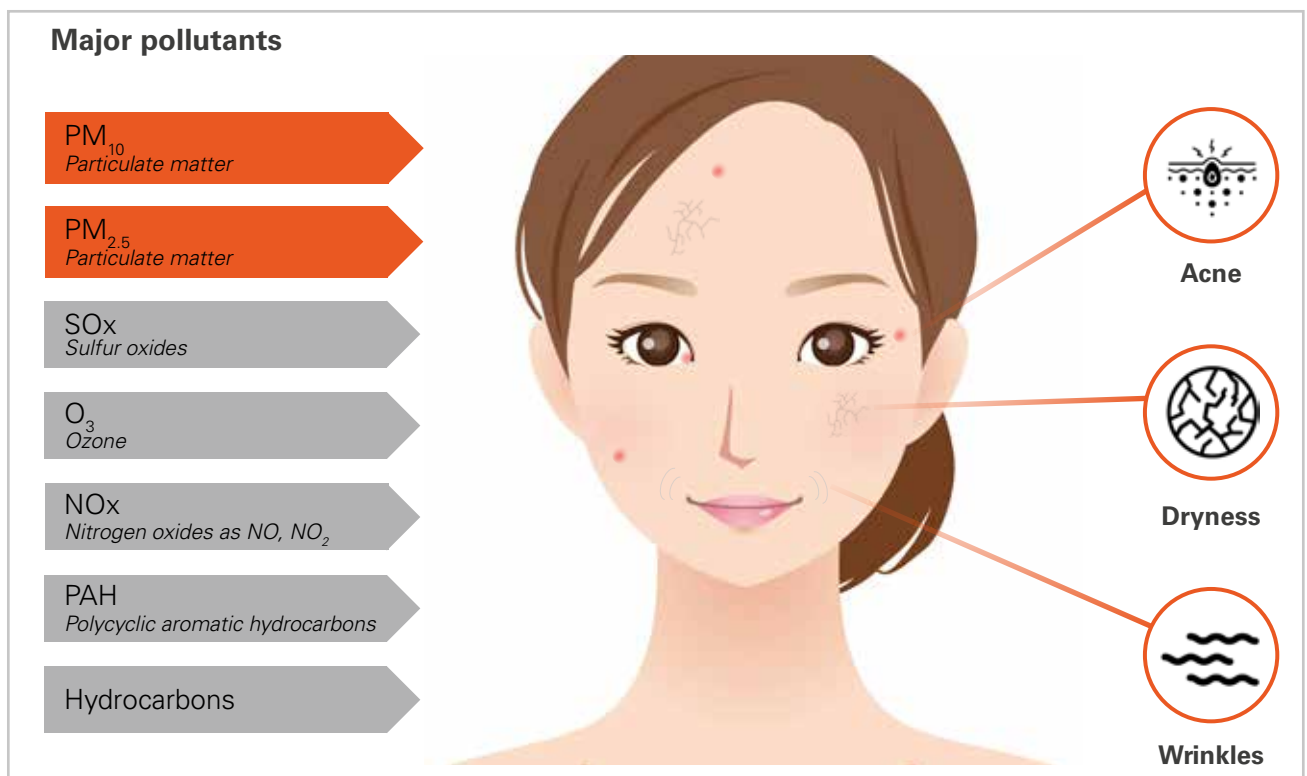
Did you know?

Air pollution is on the rise worldwide with over 90% of the world's population living in areas where air quality doesn't meet World Health Organization (WHO) air quality guidelines (source: WHO/2018).

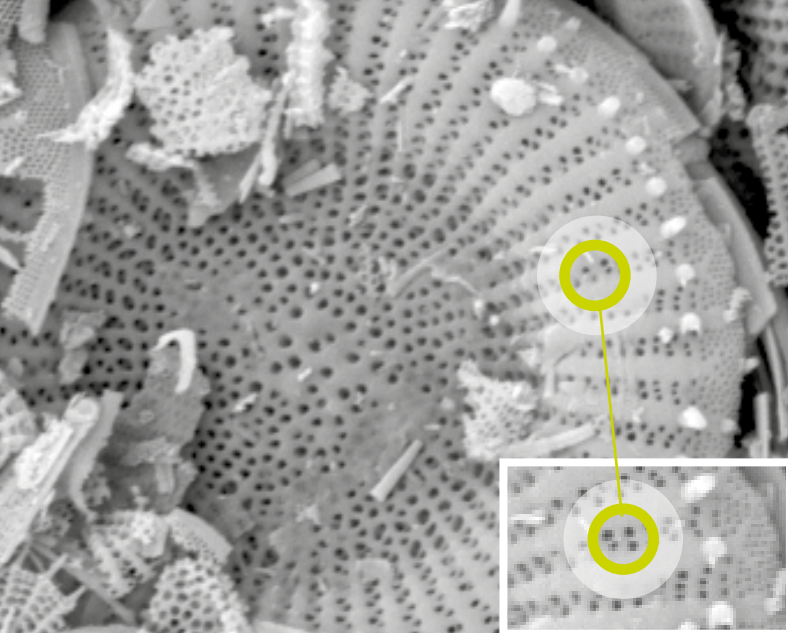
Air pollution – a major health issue and bad news for skin

People living in urban areas are the most exposed to air pollution and its hazardous repercussions on health and skin vitality. Those issues are caused by miniscule pollution particles entering the body via skin pores generating oxidation and inflammation—and even affecting our DNA. The skin's barrier function is weakened causing heightened sensitivity, premature and accelerated ageing and elastosis.

Visible negative effects of the major pollutants on skin



- Skin barrier alteration
- Oxidative stress and inflammation
- Collagen degradation



To introduce **ImerCare® VitalSkin**, discover the mineral at its source: diatomaceous earth.

Diatomaceous earth is composed of microporous siliceous fossilized skeletal remains from aquatic algae known as diatoms.

Due to its microporous structure, diatomaceous earth offers high absorbency power for personal care products.

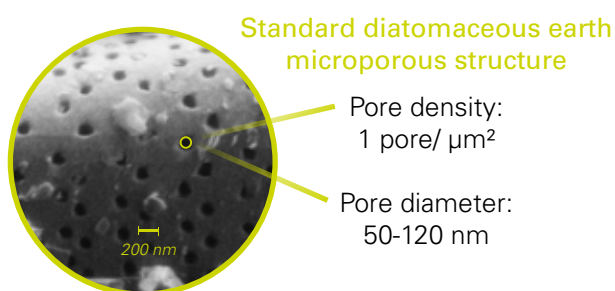
ImerCare® VitalSkin: the preventive & patented solution against pollutants

ImerCare® VitalSkin is based on diatomaceous earth and has been specially engineered to respond to specific needs such as antipollution properties in make-up. When integrated into make-up powders, ImerCare® VitalSkin has an absorption mechanism which shields the skin, unlike conventional antioxidant skincare products which majoritarly repair damage after the event. ImerCare® VitalSkin stops particles from penetrating the skin in the first place, preventing skin alteration and protecting precious DNA.

The ImerCare® VitalSkin is patented for its superior porosity compared to standard Diatomaceous earth, providing a larger available surface area to trap pollutants, even the smallest particles.

TECHNICAL PERFORMANCE

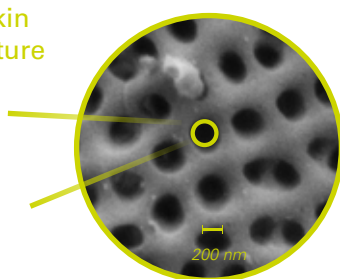
- **Patented solution**
- **Preventive action**
- **Effective on the most common pollutants**
- **6 time less skin DNA lesions**
- **In vitro and ex vivo study**



ImerCare® VitalSkin microporous structure

Pore density: 9 pores/ μm^2

Pore diameter: 100-300 nm



PROMOTIONAL CLAIMS

- **INCI:** diatomaceous earth
- **Cosmos approved**
- **Microbio control** via heat treatment
- Meets demand for:
 - **natural and clean beauty products**
 - **make-up with skincare benefits**
- **Sustainable solution**
- According to **ISO 16128-2:2017 Standard**

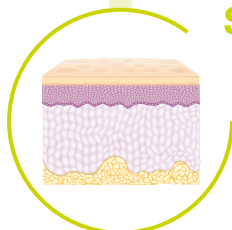


ImerCare® VitalSkin - Proven efficacy

The effectiveness of ImerCare® VitalSkin has been demonstrated by an ex vivo laboratory study, comparing the performance in terms of antipollution properties of pressed powders containing 10% ImerCare® VitalSkin (formulation 1) versus the reference formulation. The formulations were applied onto skin explants to be confronted to cigarette smoke, a major source of pollutants. This technique has been chosen to highlight the efficacy of ImerCare® VitalSkin.

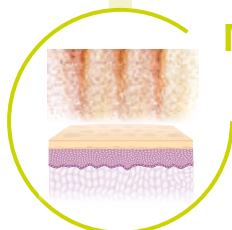
The ex-vivo laboratory study step by step

Skin explant



Skin explants come from skin biopsy which is bathed in a solid and nourishing matrix while its epidermal surface is kept in contact with the air. The skin biopsy is firmly anchored in the matrix and sealed to prevent lateral diffusion of formulation intended for topical application.

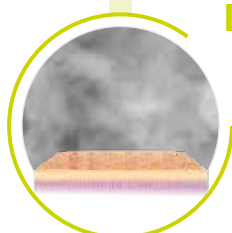
Make-up application



The pressed powder is then applied on skin explant at 2mg/cm², to simulate a representative amount put by consumers in their daily life

Phase	Ingredient	Function	Reference (%)	Formula 1 (%)
A	Standard Talc	Bulking agent	88.0	78.0
	ImerCare® VitalSkin	Antipollution agent	0.0	10.0
B	Iron oxides	Pigment	4.0	4.0
C	Dimethicone	Binder	8.0	8.0

Exposure to pollution



Skin explants are directly exposed to cigarette smoke (8 cigarettes), taken as a model because:

- It contains all the major classes of pollutants including PM
- Its high concentration is in contact with face skin
- It has the advantage of being easily handled in the laboratory.

Results



To observe the effects on the skin under a microscope, the sections obtained are marked by:

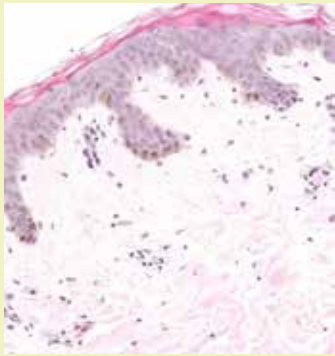
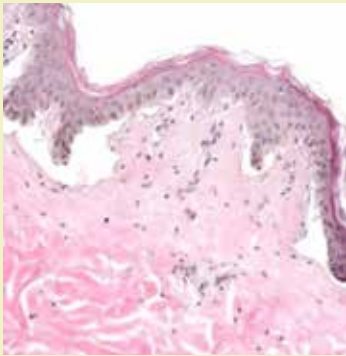
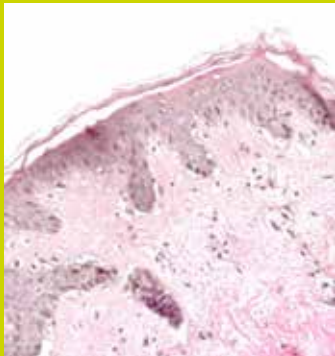
- HE staining (Hematoxylin- Eosin) in order to distinguish the different structures of the skin and analyze the morphology of the skin
- γH2AX marker to detect DNA lesions.

Results of the ex-vivo study

The results of this ex-vivo study on skin explants demonstrate two things :

- Skin explants treated with ImerCare® VitalSkin indicate a preserved skin morphology.
- Skin explants treated with the reference formula shows disrupts of the basal layer and DNA lesions caused by cigarette smoke.

Exposure of skin explants to cigarette smoke

Smoke exposure	Non exposed	Exposed to 8 cigarettes	Exposed to 8 cigarettes
Treatment with formulation	Not treated	Treated with reference formula	Treated with ImerCare® VitalSkin
Skin section with HE staining			
Comments on skin morphology	Reference: dermal-epidermal cohesion ensured by the basal keratinocytes of the epidermis and the fibroblasts of the dermis.	Separation between the dermis and the epidermis revealing destabilization of the dermo-epidermal junction.	Morphology of the skin preserved

Going further into analysis with the study of quantitative results, the **antipollution formulation is six times more effective than the reference formulation** when considering the preventive effect on DNA. In fact, ImerCare® VitalSkin considerably reduces skin damages of the dermal-epidermis and protects from DNA lesions.

DNA lesions analysis

Smoke exposure	Non exposed	Exposed to 8 cigarettes	Exposed to 8 cigarettes
Treatment with formulation	Not treated	Treated with reference	Treated with ImerCare® VitalSkin
Number of DNA lesions	0	23	4
Skin section with γH2AX staining			

ImerCare® VitalSkin is a unique patented mineral technology, used as a natural antipollution agent for make-up powders. The efficacy of ImerCare® VitalSkin has been demonstrated by in vitro and ex vivo tests, showing that the new diatomaceous earth grade has a preventive action on skin, blocking the penetration of polluting particles, even the smallest ones thanks to its superior porosity.

Unlike most antipollution solutions which offer to repair damages, ImerCare® VitalSkin has key preventive actions on the skin by:

- Protecting the DNA
- Preserving its barrier function thanks to the cohesion of the dermoepidermal junction



About Imerys

The world leader in mineral-based specialty solutions for industry, Imerys delivers high value-added, functional solutions to a diversified set of industrial sectors, from processing industries to consumer goods. The Group draws on its knowledge of applications, technological expertise and its material science know-how to deliver solutions based on beneficiation of its mineral resources, synthetic minerals and formulations. These contribute essential properties to customers' products and performance. Imerys is determined to develop responsibly, in particular by fostering the emergence of environmentally-friendly products and processes.

Our Expertise

With over two hundred years' experience in the minerals business, Imerys refines and engineers its minerals through various—often proprietary—processes that influence their concentration, size, shape, structure and surface chemistry to obtain the properties our customers require and to the highest standards of quality, consistency and reliability.

Our Personal Care team has in-depth knowledge of how minerals interact in cosmetic applications and a proven track record for developing new, value-added solutions for customers.

Our applications laboratories are equipped with a full range of analytical and cosmetics-specific equipment, enabling us to provide customers with bespoke formulation services and technical support.



About ImerCare®

ImerCare® minerals benefit from all the experience and expertise of Imerys group.

The ImerCare® product range is derived from 100% natural kaolin, perlite, mica, diatomaceous earth and talc grades which have been engineered to provide exactly the right properties in terms of exfoliation, matting, transparency, coverage, rheology, absorption, and skin feel.

ImerCare® minerals are ideal for use in skin care, make-up, toiletries, hair care and oral care.

All ImerCare® grades are natural, chemically inert and can be used in bio cosmetics. They are processed so as to provide specific functional benefits in cosmetic formulations.

Integrating Sustainable Development into all we do



At Imerys, we respect the world in which we operate. We are committed to our role in society, to meeting our obligations to the countries and communities in which we do business, as well as to acting as responsible environmental stewards.

Our Corporate Social Responsibility policy is built upon three mainstays:

Empowering our people

- **Ensuring that health and safety come first** by developing and continually improving our health and safety culture and systems so as to achieve an injury-free workplace.
- **Developing our human capital** by respecting internationally recognized human rights and labor practices as set out in our Code of Business Conduct and Ethics; investing in the talent and skills of our employees; engaging in constructive social dialogue, and fostering a culture of workplace diversity and inclusion based on mutual respect.

Caring for our planet

- **Acting as responsible environmental stewards** by assessing environmental risks and continually improving control measures to reduce adverse environmental impacts; maximizing the efficient use of natural resources, and preserving biodiversity.

- **Reducing the impact of climate change** through the implementation of a long-term climate change strategy in line with the COP21 2°C trajectory as well as developing innovative solutions at the service of a low-carbon economy.

Building for the future

- **Ensuring exemplary Business Conduct** by maintaining the highest standard of corporate governance; respecting and implementing fair operating practices and ensuring a responsible supply-chain with all our partners; and engaging with local communities to create shared value in particular through education and skills development.
- **Ensuring that our products are safe** for people and the environment and developing sustainable solutions that make positive contributions to society from both life cycle assessment as well as long term sustainability perspectives.



More information about our sustainable development policies and practices can be found on:

www.imerys.com

Compliance

All Imerys cosmetic products are natural and chemically inert. These attributes enable them to be used in cosmetic products that comply with European cosmetic directive (EC) n°1223/2009.

Cosmos

ImerCare® VitalSkin complies with industry microbiological standards without resorting to irradiation. It is not treated with chemicals during processing. It is Cosmos approved. This accreditation underscores the naturalness of the minerals selected and produced by Imerys for the cosmetics industry.



**COSMOS
APPROVED**



www.imerys.com

¹ OECD Guideline N°439 (July 2010) for testing chemicals in vitro skin irritation. Reconstructed human epidermis test method. (Certificate available upon request)


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