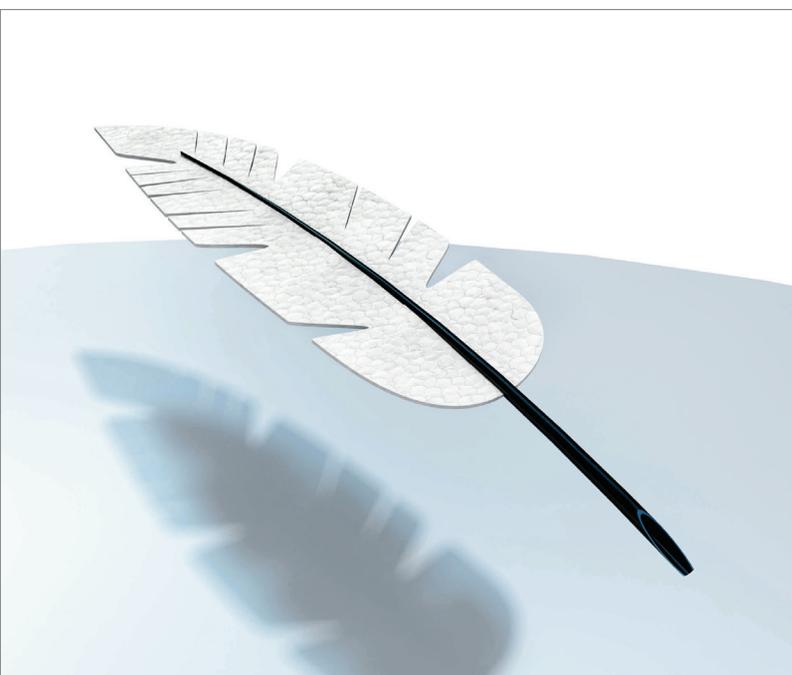
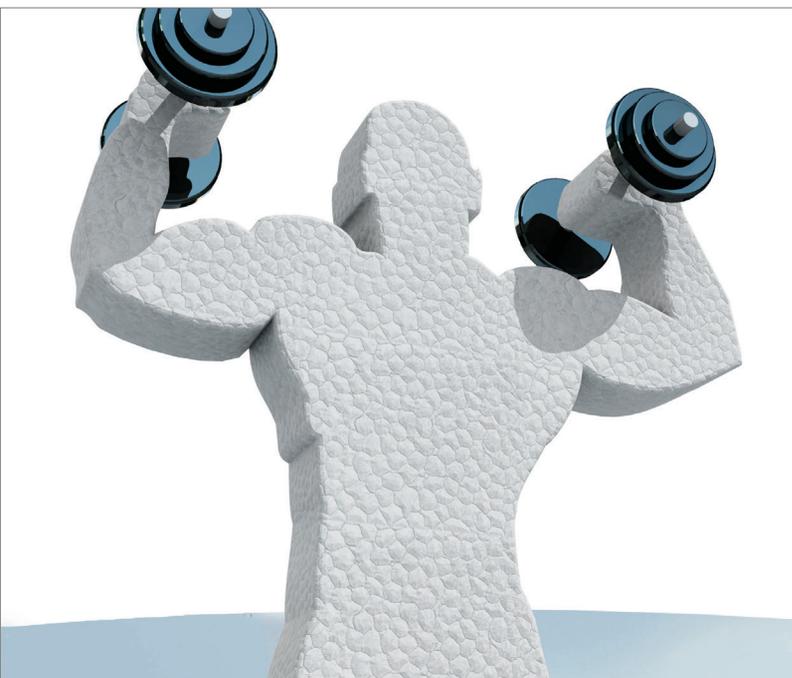


## Kaneka Eperan™-PP & Eperan™

Cutting-edge particle foam technology



# Kaneka Belgium NV

A company that realizes dreams through science

1970 marked the foundation of Kaneka Belgium in Westerlo, Flanders – as the company’s very first subsidiary outside Japan, and the first production site of a Japanese chemical company in Belgium. Since then, Kaneka Belgium has expanded its business and R&D activities to encompass diverse functional and foamed plastics solutions, developing and manufacturing specialty chemicals for applications in industrial, automotive, building & construction, packaging, consumer, DIY, and residential sectors.

## Global network

Our parent company Kaneka Corporation is a leading technology-driven company, with headquarters in Osaka and Tokyo, Japan.

Through world-class science and technology, Kaneka provides innovative products and solutions to diverse markets around the world, responding to the needs of people, society and the global environment, today and tomorrow.

Aligned with the global business strategy, Kaneka focuses its activities on four strategic solutions units: materials, quality of life, health care and nutrition.

## Our mission and vision

Our active network of resources – people, technology, operational excellence and know-how – is the source of Kaneka’s strength, driving our innovation and competitive participation in the global market. We strive to develop, produce and sell innovative and environmentally friendly chemical specialty products. We take pride in assuming responsibility for our employees, customers and stakeholders, and commit to comply with all rules and regulations.

As a mark of our high standards, we are continuously maintaining our management systems according to the latest requirements of ISO 9001 (quality), ISO 14001 (safety and environment) and ISO 50001 (energy).

## Corporate Social Responsibility

Kaneka Belgium believes that being sustainable – as an individual or as a corporation – should be an everyday practice, in which we will always go above and beyond. As a chemical company, we strictly measure our health, safety and environmental performances, in order to continue, to improve and to share our progress with all our stakeholders.

Kaneka Belgium NV, Westerlo



# Quality of life

FOAM & RESIDENTIAL TECHS  
SOLUTIONS VEHICLE

## Foam & residential techs solutions

Kaneka wants to enhance the quality of life through the power of its materials. Energy-efficient solutions enrich our lives behind the scenes. They do this by serving as insulation to keep our houses comfortable, as a core material that makes our vehicles lighter and safer, and as temperature-controlled protective packaging that allows products to be shipped securely and at a constant temperature.

### A well-established force in the foam market

Kaneka is dedicated to designing, developing and producing state-of-the-art technologies, enabling its customers in nearly every industry to meet the current and future needs of society.

A series of high-valued foam technologies have made Kaneka a well-established force in the market. With its well-known polyethylene and polypropylene foam particles technology, Kaneka can highlight a wide array of applications.

### Long-term future vision

Challenges keep Kaneka's creative team busy for a long-term future. They are continually searching for new products to help people all around the world to live a better and safer life and to reduce the environmental impact.



# Kaneka's expanded foam particles

EPERAN™-PP and EPERAN™ are Kaneka's expanded polypropylene and polyethylene foam beads or particles. These particles are used to be molded into various shapes and products whose superior mechanical and outstanding cushioning and energy absorption properties make them ideal materials for the automotive industry, engineering products, returnable containers, housings for HVAC, cushioning and protective packaging, and many more.

## Wide array of applications

Thanks to its high load characteristics, chemical resistance and strength, EPERAN™-PP expanded polypropylene foam is widely used in the automotive and HVAC industry, for technical products and for reusable or multi-trip containers. Its superior properties make it an outstanding product for impact energy absorption and weight reduction. EPERAN™-PP is also extensively used in packaging applications due to its high-temperature resistance and excellent creep characteristics, even at low densities.

## Meeting the specific needs of the customer

Kaneka's innovative EPERAN™-PP and EPERAN™ products are a direct answer to specific needs of the market in general and of its customers in particular. This has led to the development of a multitude of specialty EPERAN™-PP materials based on state-of-the-art technologies, such as dissipative types, halogen-free flame retardant grades and materials with significantly improved insulation properties, which are not only suitable for applications in the areas of construction and HVAC, but also in sectors such as public transport and aerospace.

## Environmentally friendly

The environmentally friendly EPERAN™-PP and EPERAN™ foam particles allow Kaneka to easily meet the high-demanding and continuously increasing market requirements. EPERAN™-PP and EPERAN™ consist of easily recyclable polypropylene and polyethylene.



### EPERAN™-PP

EPERAN™-PP can be easily molded into complex shapes, accommodating a multitude of possible designs, using established steam chest molding techniques. Furthermore, its outstanding mechanical properties enable EPERAN™-PP to provide ideal solutions to a multitude of applications for the automotive industry, engineering products, returnable containers, cushioning and protective packaging and many more. EPERAN™-PP is comprised of polypropylene only, making this thermoplastic material easy to recycle.

### Halogen-free Flame Retardant EPERAN™-PP

By introducing flame retardancy in expanded polypropylene, Kaneka addressed opportunities for several applications and markets. The excellent flame retardant behavior of this 100% halogen-free material and the non-toxic smoke which it generates in case of fire allows its introduction in the field of electronic appliances, construction and HVAC and even supports applications for public transportation and aerospace.

### Dissipative EPERAN™-PP

Its superior electrostatic conductive properties make this material outstandingly suitable, not only for use in ESD protected areas required in the telecom, IT and other electronics businesses, but also to secure and package ESD sensitive products used in the automotive and other industries.

### Colored EPERAN™-PP

EPERAN™-PP is available in various colors, allowing easy visual distinction or the creation of appealing products.

### V-grade EPERAN™-PP

Kaneka was a pioneer in developing beads with a very small diameter, allowing the production of extremely thin-walled products, such as shell-type sunvisors. For any type of molding, these very small beads ensure outstandingly stable dimensional tolerances, shorter impregnation and molding cycles, easy filling and better fusion.

### EPERAN™

EPERAN™ expanded polyethylene foam is well known for its smooth appearance, chemical resistance, strength and flexibility. When subjected to shock resulting from e.g. accidental drop, or to vibration in transit, EPERAN™ can easily absorb stress and will not break or deform in normal use, thus giving excellent protection to sensitive products. Its remarkable softness makes EPERAN™ an outstanding product for safeguarding delicate products from scratches or marks. In general, EPERAN™ is used in packaging, but it is equally suitable for automotive, leisure and other applications.

### Antistatic EPERAN™

This material is especially developed to protect sensitive electronic products from electrostatic discharge or to keep precious products free from dust.

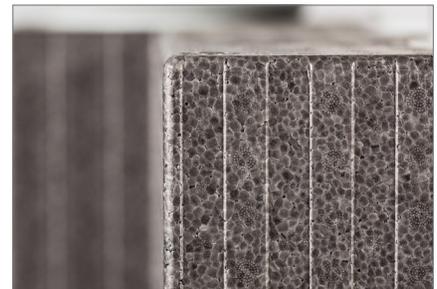
Eperan™-PP (packaging)



Eperan™-PP (automotive)



Halogen-free flame retardant Eperan™-PP



Eperan™-PP (toolbox)



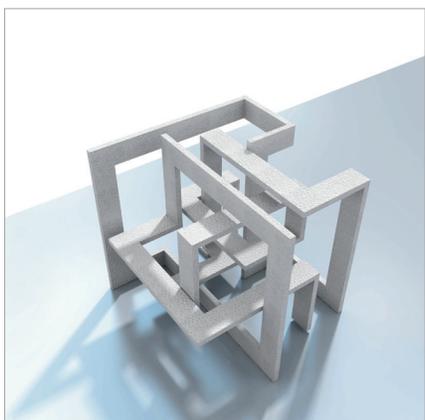
Colored Eperan™-PP



Dissipative Eperan™-PP

# Kaneka Eperan™ features

EPERAN™ -PP and EPERAN™ foam particles offer inherent features that make them suitable for a wide array of applications.



## SHAPE MOLDING

EPERAN™-PP and EPERAN™ can be easily molded into complex shapes, accommodating a multitude of possible designs, using established steam chest molding techniques.



## MULTI-IMPACT

When subjected to shock or vibration in transit, EPERAN™-PP and EPERAN™ can easily absorb stress and will not break or get deformed in normal use.



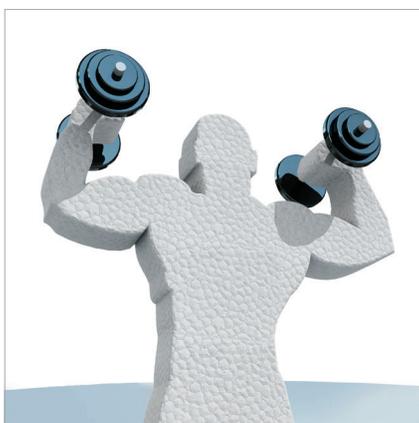
## ENERGY ABSORPTION

EPERAN™-PP and EPERAN™ have outstanding cushioning and energy absorption properties and can, therefore, offer excellent solutions in the field of safety and protection for the automotive and other industries.



## FLEXIBILITY AND RESILIENCE

EPERAN™-PP and EPERAN™ demonstrate outstanding elasticity and strain recovery properties, allowing the foam parts to return to their original shape even after severe bending or compression.



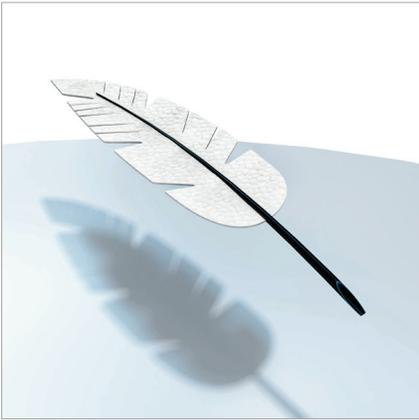
## STRUCTURAL STRENGTH

EPERAN™-PP and EPERAN™ have high load characteristics and strength, high-temperature resistance and excellent creep characteristics – even at low densities.



## DURABILITY

EPERAN™-PP and EPERAN™ have excellent impact strength, strain recovery and flexibility. Moreover they have superior resistance to shock, abrasion and other physical and environmental wear and tear.



### LIGHTWEIGHT

Due to their outstanding cushioning properties, EPERAN™-PP and EPERAN™ can provide exceptional results with a minimum of volume and weight, thereby offering a more cost-effective solution in terms of transport, storage and overall weight reduction.



### BUOYANCY

Thanks to the closed-cell structure, EPERAN™-PP and EPERAN™ have a superior long-term flotation capability, and they are not affected by lengthy exposure to either fresh or salt water.



### THERMAL PROPERTIES

Being closed-cell foams, EPERAN™-PP and EPERAN™ have effective insulation properties and thermo-stability. In specially developed products, thermal insulation properties can reach an even higher level.



### FLAME RETARDANCY

The 100% halogen-free flame retardant grades have self-extinguishing properties in both horizontal and vertical burning conditions. In case of a fire, the heat release rate is low and the generated smoke meets strict aviation requirements.



### CHEMICAL RESISTANCE

EPERAN™-PP and EPERAN™ show little or no degradation when exposed to various oils and chemicals and have excellent weather and moisture resistance, even after severe bending or compression.



### VX-SECONDARY EXPANSION GRADES

The need to reduce transportation and logistics costs and to optimize density control have led Kaneka to develop Eperan™-PP grades especially suited for secondary expansion. They can be expanded more than 3 times in 1 step.



### RECYCLABILITY

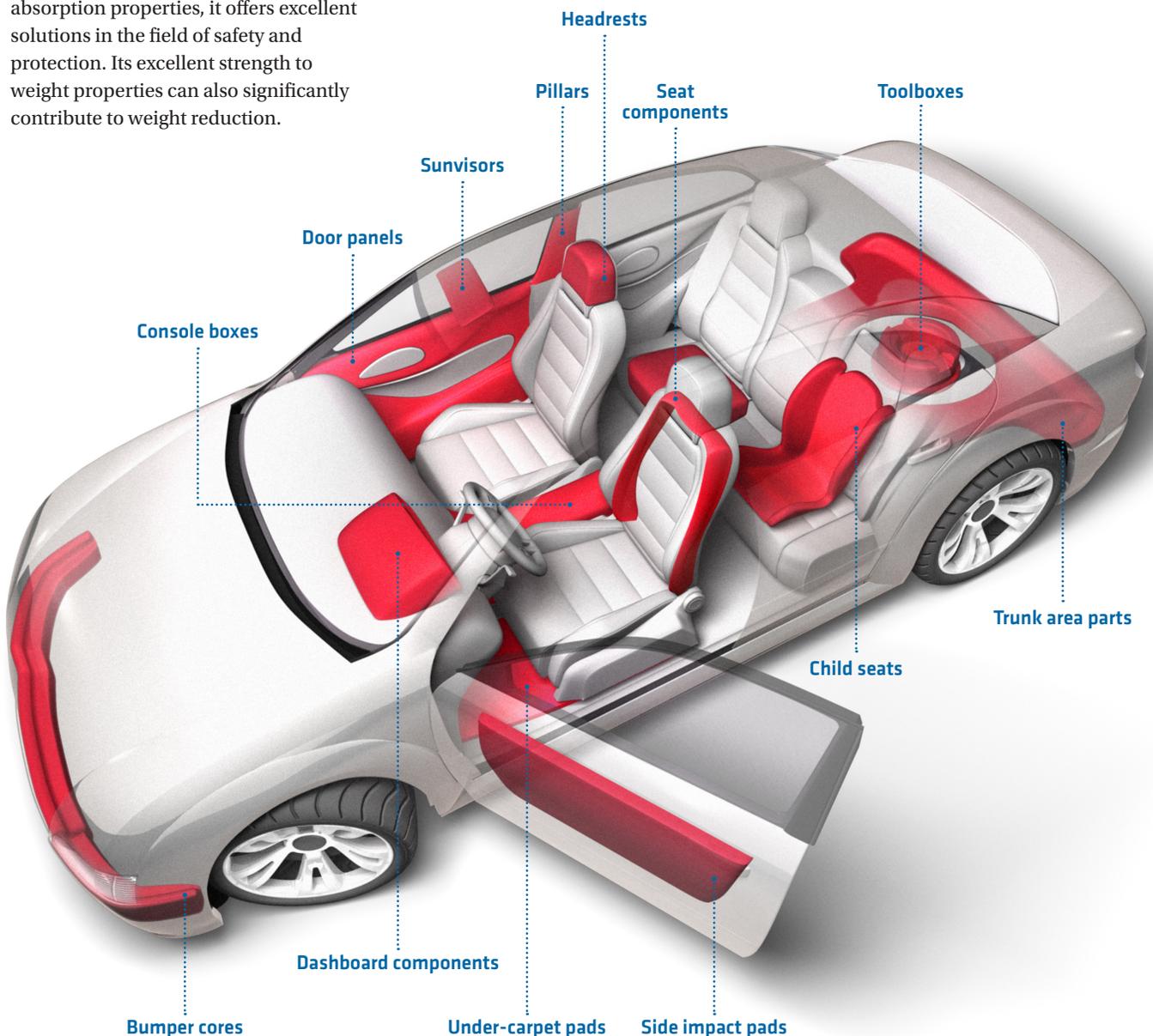
EPERAN™-PP and EPERAN™ consist of easily recyclable polypropylene and polyethylene.

# A wide array of applications

This strong, resilient, chemically resistant closed-cell foam has excellent properties which make EPERAN™-PP and EPERAN™ the material of choice for a multitude of applications, in a variety of industries, from automotive over packaging to recreational – in fact, wherever superior performance is a prerequisite.

## AUTOMOTIVE

EPERAN™-PP is widely used in the automotive industry. Due to its outstanding cushioning and energy absorption properties, it offers excellent solutions in the field of safety and protection. Its excellent strength to weight properties can also significantly contribute to weight reduction.





### RETURNABLE CONTAINERS

A multitude of industries use EPERAN™-PP and EPERAN™ to implement returnable, collapsible tote trays to facilitate material handling and protect delicate parts and finishes. Its structural strength makes EPERAN™-PP and EPERAN™ perfect for reusable and multi-trip applications.



### PROTECTIVE PACKAGING

Excellent cushioning properties and dimensional stability make EPERAN™-PP and EPERAN™ outstanding products for packaging, protecting and safeguarding delicate and fragile items.



### FOODBOXES

Excellent thermal insulative properties help to keep food fresh, hot or cold, or to keep medical and pharmaceutical products at their required temperature. EPERAN™-PP products are easy to clean and do not support microbial growth. Most standard EPERAN™-PP products are compliant with European Food Contact Regulations.



### HVAC

Complex design capability, structural strength and durability, combined with insulative, flame retardant and long-term heat stability properties, make EPERAN™-PP the material of choice for HVAC housing and components.



### LEISURE

The strong, resilient and chemically resistant closed-cell foam has a host of properties which make it the material of choice for a multitude of applications in recreational areas like sports, furniture, shockpads, marine, toys, and many more.



### PUBLIC TRANSPORTATION

By introducing flame retardancy in expanded polypropylene, Kaneka addressed opportunities for several applications and markets. The excellent flame retardant behavior of this 100% halogen-free material, its long term heat stability and insulation properties provide good performance in highly demanding applications.

# Advanced research and technical service

With a focus on innovation, our team specializes in applied research, technical services, and commercialization efforts that extend the brand and impact of Kaneka's Eperan™ products, while serving our molders and end customers alike.

## Testing and quality evaluation

As a qualified technical service team, we understand the market needs and requirements and can assist molders and end users in all areas, from extensive quality control to design and molding.

Quality is paramount at Kaneka Belgium, and we can perform a wide range of tests. Our well-equipped laboratory is continually evolving and expanding to meet our clients' needs.

We take pride in offering our customers an extensive technical service and helping them to select the most suitable material for their applications.

## Research & Development

The spirit of innovation has always been part of Kaneka's DNA. Embedded in Kaneka's corporate culture is the mission to generate added value for our customers through the development of innovative, environment-friendly specialty products.

Kaneka's innovative EPERAN™-PP and EPERAN™ products are a direct answer to specific needs of the market in general and of our customers in particular, based on state-of-the-art technologies.

The EPERAN™ R&D center addresses specific demands and requirements from our customers by providing tailor-made solutions. We cooperate with centers of technology and test institutes all over Europe.

In the true spirit of being a Dreamology Company, Kaneka R&D teams are constantly striving to make dreams and wishes come true through the power of science and technology.

We can provide our customers with a range of services, including:

- **PHYSICAL PROPERTIES**

Determination of material properties is done according to established industrial standards.

- **DROP TESTER**

Verification if all requirements are met by the designed product.

- **XENON TESTER**

Cyclic climate testing.

- **MOLDING**

Extensive know-how and experience in molding.

- **HEAT-FLUX INSTRUMENT**

Determination of thermal conductivity.

- **FLAME RETARDANCY**

In house performance of a multitude of burning tests.



Kaneka is committed to products and processes that don't harm the environment. EPERAN™-PP and EPERAN™ consist of easily recyclable polypropylene and polyethylene.

## Recycling

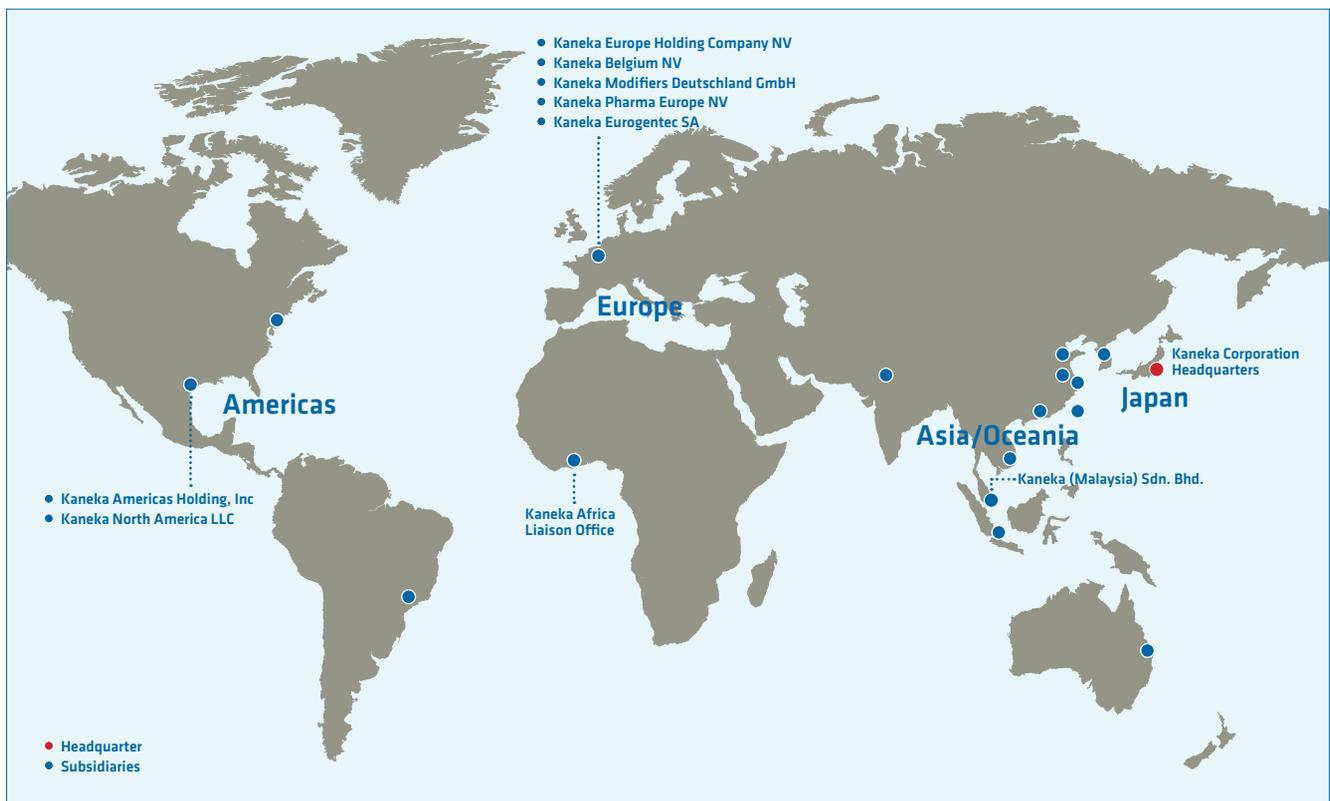
EPERAN™-PP and EPERAN™ do not dissolve, perish or contain toxic substances that can contaminate surface or ground water. Its structural strength makes EPERAN™-PP and EPERAN™ perfectly suited for reusable and multi-trip applications. As they are comprised of more than 90% air, a minimum quantity of raw material is used to make end products. EPERAN™-PP and EPERAN™ consist of easily recyclable polypropylene and polyethylene.

## A healthy and safe environment

Kaneka is fully aware of the ever-increasing necessity for a healthy and safe environment. Always going above and beyond what is required, Kaneka is committed to products and processes that don't harm the environment. Kaneka Belgium's ISO 9001 (quality), ISO 14001 (environment) and ISO 50001 (energy) certificates are both a mark and a reward for our high standards.

Based on our continuous concern for the environment and considering the constant demand for improved quality products, Kaneka's production processes are constantly monitored and improved. This allows Kaneka to develop and produce excellent quality products that easily meet the continuously increasing requirements of the automotive and other industries. This constant innovation process includes, among others, revolutionary expansion techniques that make Kaneka one of the most environmentally friendly producers in the world.

# Kaneka in the world



## Packaging

EPERAN™ -PP and EPERAN™ are available in bigbags and/or in silo deliveries, depending on product type.

## Safety and handling information

Before using EPERAN™ -PP and EPERAN™, always read the Safety Data Sheet, and contact us for recommendations on proper handling and storage.

For further information about our EPERAN™ and EPERAN™-PP portfolio, please contact us. We will forward your request to a regional contact person.

e-mail: [info.eperan@kaneka.be](mailto:info.eperan@kaneka.be)

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<http://www.kaneka.be/products/eperan>

## Disclaimer

All data in this document are for general information purposes only. They are based upon tests performed to our best knowledge and experience, using typical EPP molding equipment under Kaneka's standard conditions. As many properties will depend largely on part shape and size as well as on molding parameters, these data can only be considered as indicative. Any data herein may change without prior notice. While we endeavor to keep the information up to date and correct according to the state of the art, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability or suitability concerning these data. Any reliance you place on this information is, therefore strictly at your own risk. The user itself is responsible for testing the products to find out and to determine whether these are suitable for the application as well as to observe any industrial property rights and existing laws and regulations. In no event will we be liable for any loss or damage (including, without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of profits) arising out of, or in connection with, the use of this information and/or the use, handling, processing or storage of this product.