



Biocides

Protecting our health and our environment





Applying our best knowledge for the benefit of all

The relentless attacks of microorganisms and pests force us to be creative in our defence. Biocides represent a diverse and highly specialised industry, with specialised and essential uses that provide enormous benefits to us, each day, many of which we take for granted.

Biocides are strictly regulated by the Biocidal Products Directive (BPD). The BPD aims to provide for the highest degree of protection for man and the environment and will establish a harmonised regulatory framework in the EU Member States. All biocidal products placed on the market in Europe must be subject to the same scrutiny by regulatory authorities.

Responsible implementation and strict enforcement of the BPD in all Member States should reduce risks to man and the environment equally across the European Community. A harmonised EU market would be established with a competitive biocides industry for the future. This in turn will provide incentives for producers to develop novel and highly effective products with even lower risks and a smaller environmental footprint.

In order to ensure a long-term future for European manufacturers and continued progress in terms of effectiveness and environmental protection, it is vital to preserve a robust, competitive base for manufacturing as well as research and development in Europe.

The European biocides industry is committed to developing and formulating effective biocides that safeguard public health and hygiene while respecting the environment.

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Biocides – beneficial and essential

For millennia mankind has sought protection against pests and other organisms which threaten our health, our food, our environment and the places in which we live and work.

Our principal defences against these agents of disease and destruction are known as 'biocides'. Early biocides included natural pyrethrum (from *Chrysanthemum* flowers), bitumen, camphor, vinegar and rose water.

In the modern definition, a biocide is a formulation containing one or more active substances that will – at very small doses – repel, control or destroy harmful organisms.

Biocides are essential in our everyday lives for the purposes of prevention and protection. They are subject to their own set of regulations and should not be confused with medicinal drugs, used to treat the human body, or with plant protection products, used directly on crops.

Biocides have numerous applications with enormous benefits for all of us. In this brochure, we provide you with a few examples.



Keeping drinking water clean – saves thousands of lives

Thankfully, the massive outbreaks of typhoid, cholera, dysentery and gastro-enteritis, which were so destructive in Europe during the Middle Ages, are history.

Today, the biocides used in water treatment plants throughout Europe are essential tools that ensure our water supplies remain fit for drinking.

But we must not be complacent. According to the World Health Organisation, millions of people in developing countries, most of them children, continue to die every year from diseases due to the lack of safe, clean drinking water. Indeed, European travellers visiting such countries add water purification tablets to their drinking water – they are in fact treating the water with biocides.



Keeping insect-borne diseases at bay – put your health first

Insects can carry life-threatening diseases, and can attack wooden structures and fabrics. All of these negative impacts on human existence are preventable by using specific tailor-made biocides. Climate change and global trade are contributing to the spread of disease-carrying insects. Mild winters associated with climate change are causing tick populations to thrive in Europe, increasing the occurrence of tick-borne diseases such as encephalitis and Lyme disease.

The Asian tiger mosquito is an emerging threat which carries the risk of exposing more and more Europeans to the potentially deadly chikungunya virus. Used car tyres and pot plants (e.g. lucky bamboo) carrying mosquito eggs, are imported into Europe. Indeed concerns have arisen recently in the media about the serious public health threats posed by this mosquito.

Malaria and dengue fever are major public health concerns on a global scale. Many health professionals expect these diseases to gain a foothold in Europe as infected mosquitoes spread north from the more traditional tropical environments. Mosquitoes capable of carrying the malaria parasite are already present in most European countries. A very disturbing fact, when you consider that malaria already kills 1 to 3 million people each year. Insecticide products are needed to provide individuals and local authorities with a comprehensive range of options to prevent or address mosquito-borne diseases in Europe.



Hospital, home and shopping hygiene – protecting the young and the not-so-young

How often do we find communicable diseases and food poisoning featured in the evening news? Pathogens, such as bacteria, viruses and fungi, can be found in homes, restaurants, hospitals, farms, the food industry, shop floors, supermarkets and elsewhere. These organisms continue to do what comes naturally, - staying alive and reproducing - but as a consequence, they can cause disease.

In hospitals and nursing homes biocides protect patients, medical staff and visitors from cross-contamination: it is vital that infections are not passed on from person to person. Biocides formulated in cleaning products keep domestic kitchens and bathrooms clean and safe.

We all have a right to enjoy a healthy meal without contracting food-poisoning. In the restaurant, hotel and catering sector, disinfectants are essential tools that help to prevent food-poisoning. They maintain germ-free conditions in places where food and drink products are prepared, processed and distributed.



Controlling urban pests – city kids can breathe easily

Asthma is a chronic condition affecting ~22% of children living in urban areas. Exposure to urban pests (e.g. cockroaches and dust mites) is one of the main factors responsible for the rise in asthma. Other urban pests such as rats, mice and flies can spread diseases and cause illness. An integrated approach to pest management is essential. The help provided by appropriate active substances in biocidal products is a key component of a comprehensive pest-control policy.

“The European biocides industry is committed to developing and formulating biocides for the protection of public health and the environment.”



Making products better and longer-lasting – sustainable production

In many consumer products, the use of biocides avoids spoilage and bio-deterioration.

Take paints for example. They are more environmentally-friendly today because many are now water-based. But this beneficial feature requires the addition of small quantities of biocides to avoid rapid spoilage while cans sit on the shelf. For the same reason - preserving commercial formulations - most detergents, adhesives and glues require the addition of small quantities of specialised biocides.

Likewise, biocides are used in a wide range of industrial products and applications to protect formulations against deterioration and to keep them fully functional. Consider polymers such as sealing silicones, inks, insulating polyurethanes, fabrics, concrete products, petroleum derivatives and cooling systems. Without a little help from appropriate biocides, we would consume far greater amounts of natural resources. The net result is that biocides support sustainable production and consumption.



Keeping ships' hulls clean of marine organisms – helps the environment

90% of the world's goods are transported by sea. Ships are among the safest and most environmentally-friendly means of transport available today. However, if the ship's hull is not protected with an effective antifouling paint, marine organisms will settle on the hull increasing drag and leading to a potential increase in fuel consumption and thus CO₂ emissions by up to 60%.

The use of antifouling coatings, containing biocides, controls the unwanted growth of marine organisms on ships' hulls leading to lower carbon footprints for this mode of transport.

Furthermore, a significant concern in the marine environment is the translocation of species from one continent to another. Often organisms use the surface of ships' hulls as a 'hiding place' which allows them to translocate from one region to another. Here they may multiply and disturb the natural balance of organisms already established in this new location. The use of antifouling coatings helps prevent such imbalance.



Preserving wood – is protecting forests

Wooden structures provide an attractive habitat for wood-eating insects and fungi, from the Longhorn beetle to the dry-rot fungus. Selective biocides can help protect wood from such attack. Wooden furniture and timber present in everything from window frames, wooden panelling to the very structure of our homes, last much longer because they are preserved with biocides - which means fewer trees are chopped down and helps ensure more sustainable forestry management.

Termites remain among the most destructive pests on the planet. In the U.S., termites do more damage to buildings and homes than forest fires and tropical storms combined. Wood preservative biocides are the only effective weapons to combat these wood-eating insects. Europe has been largely free from this pest – but here too, change might come: until the 1980s, termites were mainly a problem in France. This is not the case anymore: termite colonies have spread from south-western France to Paris, and have been reported in Spain, Germany, Belgium, Switzerland, Luxembourg and the UK.



Cefic - The European Chemical Industry Council

Chemistry making a world of difference

Cefic is the Brussels-based organisation representing national chemical federations and chemical companies in Europe. Cefic represents, directly or indirectly, around 27,000 large, medium and small companies in Europe, which employ about 1.2 million people and account for more than 29% of world chemicals production.

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