chemsec
INTERNATIONAL CHEMICAL SECRETARIAT

HAZARD VERSUS RISK

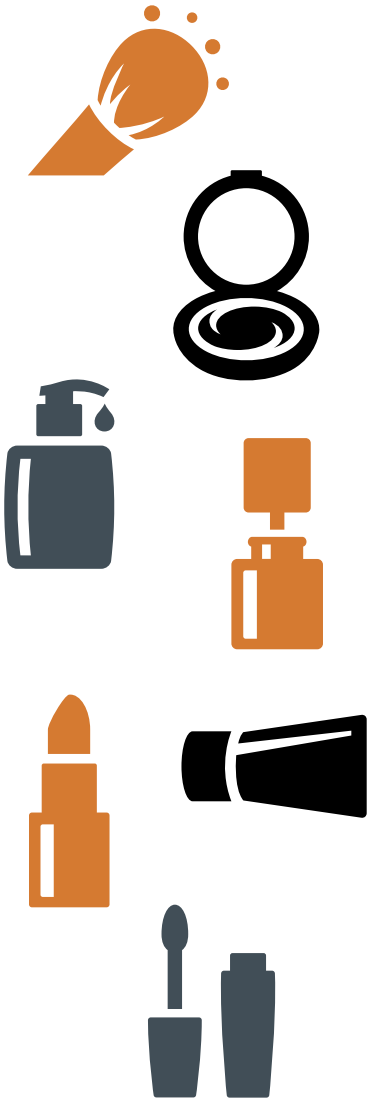
THE CONCEPT OF HAZARD AND RISK is central to chemicals legislation; it provides the entire foundation for how to approach the regulation of chemicals.

The EU chemicals regulation REACH builds on eliminating hazards, while allowing a certain risk under specific circumstances. In the first step, chemicals are identified as "Substances of Very High Concern" based purely on their hazardous properties. The message is that these hazardous chemicals should be avoided as far as possible. In cases where it is not yet possible to replace them, and where the benefits of continuous use outweigh the risks, authorisation for specific uses can be granted.

However, parts of industry continue to put pressure on policy makers to abandon the hazard-based approach and reintroduce legislation based solely on risk assessments – a system that was deemed ineffective by a broad majority almost two decades ago. **A change like this would be a fundamental deviation from how Europe protects its citizens from toxic chemicals today.**

Putting some make-up on it

An example often used by advocates of both sides is the cosmetics industry. In the US, where chemical legislation is based on risk, about 11* cosmetic substances are regulated. In the EU, where legislation is a mix of risk and hazard, 1379* substances are regulated. Advocates of the hazard-based approach say this is proof that the system is working, as there are clear reasons for protecting consumers and the environment by regulating these chemicals. Advocates of the risk-based approach, on the other hand, claim this is a perfect example of how legislation has gone nuts, banning substances left and right. Decide for yourself who you think is right and what level of precaution and safety you prefer in the products that you apply to your body, and the bodies of your loved ones. But before you do, ask yourself if you think cosmetics are less readily available in the EU compared to USA? Do Europeans use less make-up? And if cosmetic legislation in the EU is so burdensome, why are many of the biggest producers based in Europe?



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Current chemicals legislation versus a more risk-based system: Who benefits?

	BENEFITS FROM A RISK-BASED SYSTEM	BENEFITS FROM CURRENT SYSTEM
Consumers		✔
Regulators		✔
Producers of consumer products		✔
Public procurers		✔
Recycling industry		✔
Workers		✔
Innovators of safe alternatives		✔
Producers of hazardous chemicals	✔	

Questions & Answers

1. Why limit the hazard-based approach to chemicals alone? Many other things are hazardous, cars, and even water, for example. Traffic kills thousands and many people drown each year.

Of course it is not really relevant to compare products such as cars with individual chemicals, which constitute only parts of products. ChemSec wants to replace hazardous chemicals that meet the criteria for Substances of Very High Concern, SVHCs, in products with safer ones. ChemSec do not want to ban entire product categories.

The example of water illustrates the difference between intrinsic hazardous properties and other types of risks. Drowning is the result of a lack of oxygen, rather than the presence of water.

2. A hazard-based approach leads to more restriction of chemicals. Aren't we just obstructing our own industries by making their business more complicated?

Business is also part of this planet. Most companies today realise this and have agendas to limit their impact on health and environment. This is good for the planet, for them as people, and it is good for business. In the short term, yes, environmental regulation can be seen as an obstruction to business. However, when we look at the countries and regions in the world where environmental legislation is strong, we see that these are also the areas with the highest innovation rate and flourishing businesses.

3. Ok, this chemical is hazardous. But we are only using a very small amount of it. Why shouldn't that be allowed?

In some cases there are no possibilities but to use a hazardous chemical. It could be due to that there are no viable alternatives or that the socio-economic benefits outweigh the risk. This exception to the rule is already built in into REACH, it's called the authorisation process, and it is not something ChemSec oppose. On the contrary, ChemSec considers a well functioning authorisation process to be a very important piece in EU chemicals law. ChemSec is just concerned about granting authorisation to use hazardous chemicals when safe alternatives are available.

4. If we can manage the risk, then there is no risk – like putting a lion in a cage. So why do we need to look at hazard?

Risk management is an important tool for avoiding exposure to hazardous substances, in the workplace for example. However, risk assessments build on assumptions and can therefore never provide total protection. Even though uncertainty factors are built into the equation, they can never fully protect us from the unexpected, for example a leak, an unexpected exposure or an accident, or an unintended or unexpected use. It is impossible to foresee all the possible uses of a product throughout its lifecycle. An obvious example is that children tend to play with anything around them, not just items labelled "toys". And in our positive efforts to recycle more and more we now have old car tyres turned into playgrounds or used as bins for growing vegetables. The risk assessment for tyres never considered the possibility that they might be used as planters for vegetables.

Under a hazard-based approach, the most hazardous substances are instead removed from the economy, so that we do not need to try to predict all exposure scenarios and we can feel free to use recycled materials as a valuable resource.

5. The risk-based approach sounds more logical and easier to use. Wouldn't regulation be more effective if we used it to a larger extent?

The problem is that the risk-based approach, even though very logical in theory, is quite complex in practice. It requires a lot of data that in many cases is unavailable, so decisions based on risk assessments tend to take a lot of time and resources, while the outcome still holds uncertainties. And in the end the decision to use a chemical is always a policy decision and not a scientific "truth". Which risks are we willing to take? How many cancer cases are we willing to accept in order to keep on using chromium-plated cosmetic containers? If the answer is zero, there is no need for the time-consuming risk assessment; instead we can ban this substance based solely on its intrinsic carcinogenic hazard.

ADVOCATES OF THE RISK-BASED APPROACH argue that if you limit the exposure to a toxic chemical it doesn't pose a problem. And in a sealed-off environment, sure, it is possible. But the global marketplace is far from a sealed-off environment. It is extremely challenging to accurately estimate possible exposures to a chemical throughout its lifecycle, from workers involved in production, users exposed to a product throughout its lifetime, all the way through to waste and recycling. So since risk assessments are very complex and require a lot of resources they do not provide an efficient approach for use in regulation. They will never tell the whole story about the risks a chemical poses.

THE HAZARD APPROACH, on the other hand, not only does a better job of protecting humans and the environment. It is also a very effective driver of innovation of new and safer chemicals. Time and time again we see how anticipation of the upcoming regulation of chemicals creates a demand for safe alternatives in the marketplace, which innovative chemical producers then meet.

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