

HAZARD VS. RISK



General explanation of hazard / risk (/ exposure)

Risk assessment is a very important and complex part of the regulatory process. To better understand this evaluation process, it is important to understand the difference between a hazard and a risk, and the role of exposure in the equation.

In short, a hazard is the possibility of harm or adverse effects, while a risk is the probability of the occurrence of a harmful event.

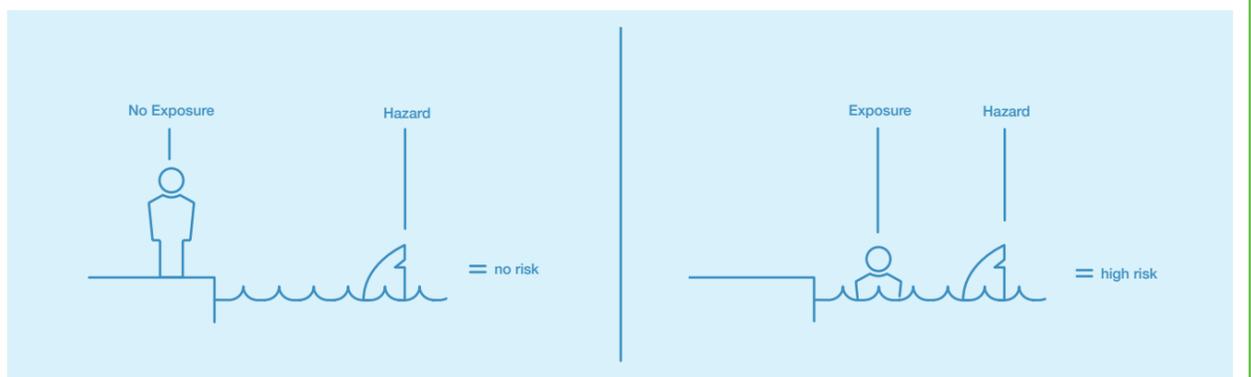
The most important factor in risk assessment is the exposure, meaning the extent to which someone is subjected to a hazard. The following examples demonstrate the interdependency:

Definitions for Plant Protection Products:

Hazard: The potential for a chemical to cause harm or adverse effects to human health or the environment.

Risk: The likelihood that harm or an adverse effect will occur when exposed to a chemical.

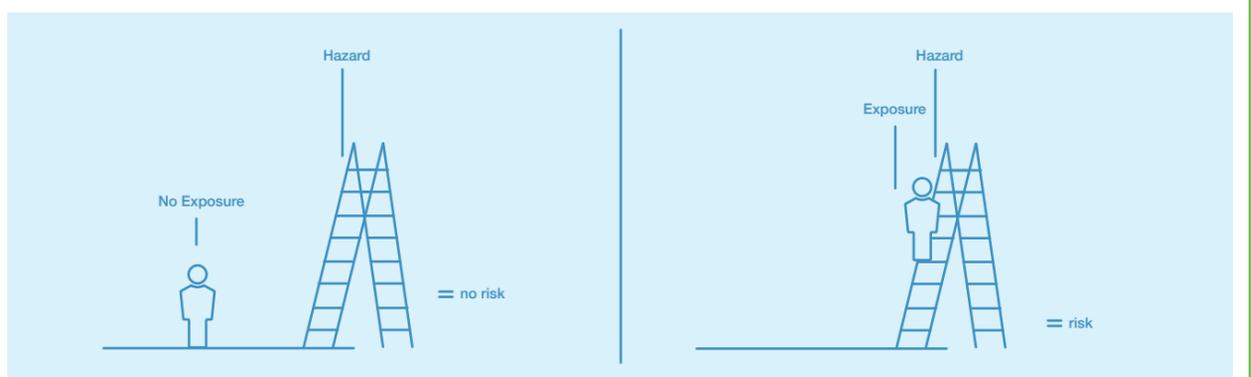
1. A SHARK IN THE SEA



A shark in the water is a potential hazard. But the person is standing safely ashore, so there is no exposure to the hazard – as a result, there is no risk.

On this side, it's different: now that the person is in the water, it is directly exposed to the hazard – accordingly, there is a high risk.

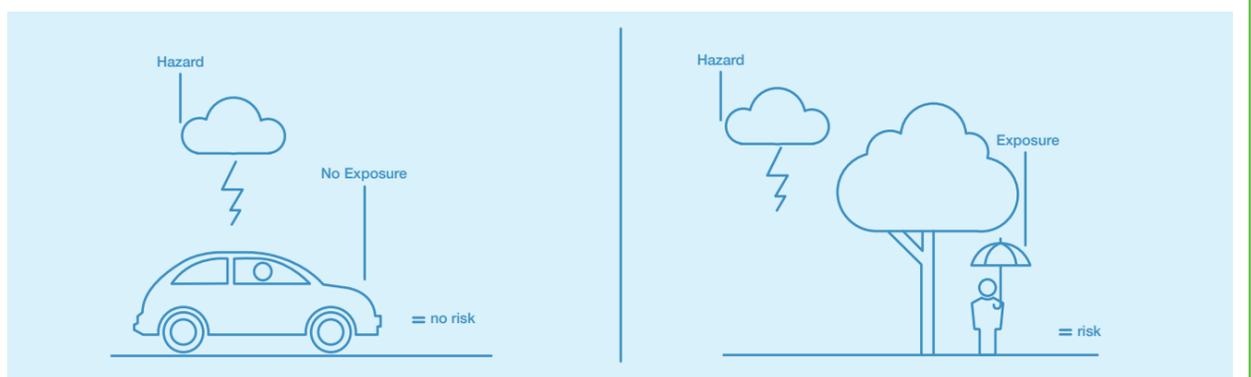
2. LADDER FALLING



A ladder is also a potential hazard as you could easily fall off and get hurt. But the person is not on the ladder, so there is no exposure to the hazard – as a result, there is no risk.

On this side, it's different: now that the person is climbing the ladder, it is directly exposed to the hazard – accordingly, there is a risk.

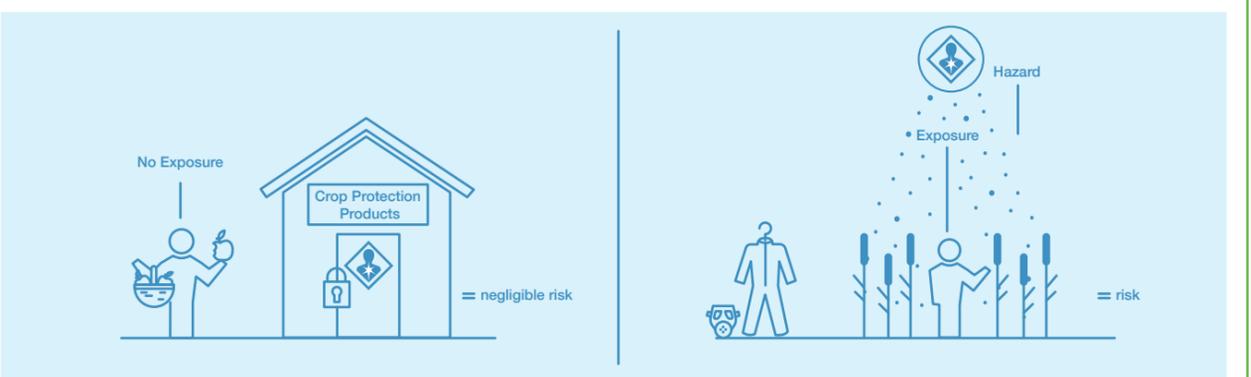
3. LIGHTNING STRIKE



A lightning strike is a potential hazard – but the person is sitting safely inside a car, so there is no exposure to the hazard – as a result, there is no risk.

On this side, it's very different: the person is standing next to a tree, thus being very exposed to the hazard – accordingly, there is a risk.

4. CROP PROTECTION PRODUCT



A crop protection product as a pure chemical is a potential hazard – but it has been applied to the apples according to the label instructions and the residues left in and on the apples (the exposure) are far below the established limit proven to be safe (i.e. causing no effects) – as a result, there is negligible risk.

On this side, it's very different: now that the person is using the crop protection product without the necessary protective clothes it is directly exposed to the hazard – accordingly, there is a risk.

Of course, it is not always black or white. The amount of exposure can vary and even though a person is exposed to a hazard, it doesn't necessarily mean that they will experience any harm whatsoever. It is one of the challenges of risk assessment to evaluate all factors and possibilities in order to ensure that use of crop protection products is as safe as possible.