

Hazard symbols and their important risk meanings

The skull and crossbones symbol



has 8 meanings in all. We found them in 2 different grades with four different types of risk:

very toxic	toxic
carcinogenic (group 1)	carcinogenic (group 2)
changes genotypes (group 1)	changes genotypes (group 2)
damages reproduction / damages development (group 1)	damages reproduction / damages development (group 2)




The list for carcinogenic, mutagenic and reproduction toxicity substance contains three types of graded risks.

The substances of group 1 are known to be dangerous for human beings.




Group 2 contains all substances that have been shown to be dangerous for animals. These substances are also assumed to be dangerous for human beings. Because similar experiments cannot be carried out on human beings, far fewer substances are listed in group 1.

Substances for which limited data suggests that they may be dangerous, are listed in group 3 and marked with the hazard cross Xn. The type of risk is specified with the relevant R maxim.




Hazard symbols and their important risk meanings for poison substances

Very Toxic T⁺		R 28: Very toxic if swallowed. R 27: Very toxic in contact with skin. R 26: Very toxic by inhalation. R 39: Danger of very serious irreversible effects.
Toxic T		R 25: Toxic if swallowed. R 24: Toxic in contact with skin. R 23: Toxic by inhalation. R 39: Danger of very serious irreversible effects. R 48: Danger of serious damage to health by prolonged exposure.
Harmful Xn		R 22: Harmful if swallowed. R 21: Harmful in contact with skin. R 20: Harmful by inhalation. R 40: Possible risks of irreversible effects. R 48: Danger of serious damage to health by prolonged exposure.




Hazard symbols and their important risk meanings for carcinogenic substances

Carcinogenic (group 1) T⁺		R 45: May cause cancer. R 49: May cause cancer by inhalation.
Carcinogenic (group 2) T		R 45: May cause cancer. R 49: May cause cancer by inhalation.
Carcinogenic (group 3) Xn		R 40: Possible risks of irreversible effects.








Hazard symbols and their important risk meanings for mutagenic substances

Mutagenic (group 1) T⁺		R 46: May cause heritable genetic damage.
Mutagenic (group 2) T		R 46: May cause heritable genetic damage.
Mutagenic (group 3) Xn		R 40: Possible risks of irreversible effects.

Hazard symbols and their important risk meanings for reproduction toxicity substances

Reproduction toxicity (group 1) (reproduction/ developmental) T⁺		R 60: May impair fertility. R 61: May cause harm to the unborn child.
Reproduction toxicity (group 2) (reproduction/ developmental) T		R 60: May impair fertility. R 61: May cause harm to the unborn child.
Reproduction toxicity (group 3) (reproduction/ developmental) Xn		R 62: Possible risk of impaired fertility. R 63: Possible risk of harm to the unborn child.

Other Hazard symbols and their important risk meanings

Explosive E		R 3: Extreme risk of explosion by shock, friction, fire or other sources of ignition. R 2: Risk of explosion by shock, friction, fire or other sources of ignition. R 1: Explosive when dry.
Extremely flammable F⁺		R 12: Extremely flammable.
Highly flammable F		R 11: Highly flammable.
Oxydizing O		R 9: Explosive when mixed with combustible material. R 8: Contact with combustible material may cause fire.
Corrosive C		R 35: Causes severe burns. R 34: Causes burns.
Irritant Xi		R 38: Irritating to skin R 37: Irritating to respiratory systems. R 36: Irritating to eyes.
Dangerous for the environment N		R 50: Very toxic to aquatic organisms R 51: Toxic to aquatic organisms.