










Hazard Symbols

Explosive	 E	Hazard: This symbol designates substances which may explode under certain conditions. Caution: Avoid shock, friction, sparks and heat.
Oxidizing	 O	Hazard: Oxidizing substances can ignite combustible material or worsen existing fires and thus make fire-fighting more difficult. Caution: Keep away from combustible material.
Extremely flammable	 F+	Hazard: 1. Liquids with flash points below 0° C and a boiling point/initial boiling point of max. 35° C. Caution: Avoid all contact with all sources of ignition. Hazard: 2. Gaseous substances which are flammable in contact with air at ambient temperature and pressure. Caution: Avoid formation of flammable gas-air mixtures and keep away from sources of ignition.
Highly flammable	 F	Hazard: 1. Spontaneously flammable substances. Chemicals igniting in air. Caution: Avoid contact with air. Hazard: 2. Substances sensitive to moisture. Chemicals which readily form flammable gases on contact with water. Caution: Avoid contact with moisture or water. Hazard: 3. Liquids with a flash point below 21° C. Caution: Keep away from open fires, sources of heat and sparks. Hazard: 4. Solid substances which ignite easily after a short-term effect of a source of ignition. Caution: Avoid all contact with all sources of ignition.
Very toxic Toxic	 T+ T	Hazard: The substances are very hazardous to health when breathed, swallowed or in contact with the skin and may even lead to death. Non-recurring, recurring or lengthy exposure to these substances may result in irreversible damage. Caution: Avoid contact with the human body and immediately consult a doctor in cases of malaise.
Harmful	 Xn	Hazard: Inhalation and ingestion of, or skin penetration by these substances is harmful to one's health. Non-recurring, recurring or lengthy exposure to these substances may result in irreversible damage. Caution: Avoid contact with the human body, including inhalation of the vapours and in cases of malaise consult a doctor.
Corrosive	 C	Hazard: Living tissue as well as equipment are destroyed on contact with these chemicals. Caution: Do not breathe vapours and avoid contact with skin, eyes and clothing.
Irritant	 Xi	Hazard: This symbol designates substances which may have an irritant effect on skin, eyes and respiratory organs. Caution: Do not breathe vapours and avoid contact with skin and eyes.
Dangerous for the environment	 N	Hazard: Substances which are harmful to the aquatic (aquatic organisms, waters), as well as the non-aquatic environment (fauna, flora, atmosphere) or which have a detrimental effect at longer term. Caution: Avoid release to the environment.

Risk Phrases

- R 1 Explosive when dry.
- R 2 Risk of explosion by shock, friction, fire or other sources of ignition.
- R 3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R 4 Forms very sensitive explosive metallic compounds.
- R 5 Heating may cause an explosion.
- R 6 Explosive with or without contact with air.
- R 7 May cause fire.
- R 8 Contact with combustible material may cause fire.
- R 9 Explosive when mixed with combustible material.
- R10 Flammable.
- R11 Highly flammable.
- R12 Extremely flammable.
- R14 Reacts violently with water.
- R15 Contact with water liberates extremely flammable gases.
- R16 Explosive when mixed with oxidizing substances.
- R17 Spontaneously flammable in air.
- R18 In use, may form flammable/explosive vapour-air mixture.
- R19 May form explosive peroxides.
- R20 Harmful by inhalation.
- R21 Harmful in contact with skin.
- R22 Harmful if swallowed.
- R23 Toxic by inhalation.
- R24 Toxic in contact with skin.
- R25 Toxic if swallowed.
- R26 Very toxic by inhalation.
- R27 Very toxic in contact with skin.
- R28 Very toxic if swallowed.
- R29 Contact with water liberates toxic gas.
- R30 Can become highly flammable in use.
- R31 Contact with acids liberates toxic gas.
- R32 Contact with acids liberates very toxic gas.
- R33 Danger of cumulative effects.
- R34 Causes burns.
- R35 Causes severe burns.
- R36 Irritating to eyes.
- R37 Irritating to respiratory system.
- R38 Irritating to skin.
- R39 Danger of very serious irreversible effects.
- R40 Limited evidence of a carcinogenic effect.
- R41 Risk of serious damage to eyes.
- R42 May cause sensitization by inhalation.
- R43 May cause sensitization by skin contact.
- R44 Risk of explosion if heated under confinement.
- R45 May cause cancer.
- R46 May cause heritable genetic damage.
- R48 Danger of serious damage to health by prolonged exposure.
- R49 May cause cancer by inhalation.
- R50 Very toxic to aquatic organisms.
- R51 Toxic to aquatic organisms.
- R52 Harmful to aquatic organisms.
- R53 May cause long-term adverse effects in the aquatic environment.
- R54 Toxic to flora.
- R55 Toxic to fauna.
- R56 Toxic to soil organisms.
- R57 Toxic to bees.
- R58 May cause long-term adverse effects in the environment.
- R59 Dangerous for the ozone layer.
- R60 May impair fertility.
- R61 May cause harm to the unborn child.
- R62 Possible risk of impaired fertility.
- R63 Possible risk of harm to the unborn child.
- R64 May cause harm to breastfed babies.
- R65 Harmful: may cause lung damage if swallowed.

- R66 Repeated exposure may cause skin dryness or cracking.
- R67 Vapours may cause drowsiness and dizziness.
- R68 Possible risk of irreversible effects.

Combination Risk Phrases

- R14/15 Reacts violently with water liberating extremely flammable gases.
- R15/29 Contact with water liberates toxic, extremely flammable gas.
- R20/21 Harmful by inhalation and in contact with skin.
- R20/22 Harmful by inhalation and if swallowed.
- R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- R21/22 Harmful in contact with skin and if swallowed.
- R23/24 Toxic by inhalation and in contact with skin.
- R23/25 Toxic by inhalation and if swallowed.
- R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R24/25 Toxic in contact with skin and if swallowed.
- R26/27 Very toxic by inhalation and in contact with skin.
- R26/28 Very toxic by inhalation and if swallowed.
- R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
- R27/28 Very toxic in contact with skin and if swallowed.
- R36/37 Irritating to eyes and respiratory system.
- R36/38 Irritating to eyes and skin.
- R36/37/38 Irritating to eyes, respiratory system and skin.
- R37/38 Irritating to respiratory system and skin.
- R39/23 Toxic: danger of very serious irreversible effects through inhalation.
- R39/24 Toxic: danger of very serious irreversible effects in contact with skin.
- R39/25 Toxic: danger of very serious irreversible effects if swallowed.
- R39/23/24 Toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
- R39/23/25 Toxic: danger of very serious irreversible effects through inhalation and if swallowed.
- R39/24/25 Toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
- R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R39/26 Very toxic: danger of very serious irreversible effects through inhalation.
- R39/27 Very toxic: danger of very serious irreversible effects in contact with skin.
- R39/28 Very toxic: danger of very serious irreversible effects if swallowed.
- R39/26/27 Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin.
- R39/26/28 Very toxic: danger of very serious irreversible effects through inhalation and if swallowed.
- R39/27/28 Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed.
- R39/26/27/28 Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R42/43 May cause sensitization by inhalation and skin contact.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
- R48/20/21 Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
- R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R48/21/22 Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
- R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- R48/24 Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.
- R48/23/24 Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.
- R48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- R48/24/25 Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.
- R48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R68/20 Harmful: possible risk of irreversible effects through inhalation.
- R68/21 Harmful: possible risk of irreversible effects in contact with skin.
- R68/22 Harmful: possible risk of irreversible effects if swallowed.
- R68/20/21 Harmful: possible risk of irreversible effects through inhalation and in contact with skin.
- R68/20/22 Harmful: possible risk of irreversible effects through inhalation and if swallowed.
- R68/21/22 Harmful: possible risk of irreversible effects in contact with skin and if swallowed.
- R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

R phrases which need to be preceded by the word «Also» according to the Nota E of Annex I of the directive 67/548/EC are marked with xx.1 (e.g. R23.1: Also toxic by inhalation).

Safety Phrases

- S 1 Keep locked up.
- S 2 Keep out of the reach of children.
- S 3 Keep in a cool place.
- S 4 Keep away from living quarters.
- S 5 Keep contents under ...
 - 1 kerosene
 - 2 paraffin oil
 - 3 water
 - 4 methanol
 - 5 protective liquid
 - 6 white spirit
- S 6 Keep under ...
 - 1 gas
 - 2 nitrogen
 - 3 argon
- S 7 Keep container tightly closed.
- S 8 Keep container dry.
- S 9 Keep container in a well-ventilated place.
- S12 Do not keep the container sealed.
- S13 Keep away from food, drink and animal feedingstuffs.
- S14 Keep away from ...
 - 1 combustible material
 - 2 strong acids and bases
 - 3 acids
 - 4 bases
 - 5 strong acids, alkalis, salts of heavy metals and reductants
- S15 Keep away from heat.
- S16 Keep away from sources of ignition – No smoking.
- S17 Keep away from combustible material.
- S18 Handle and open container with care.
- S20 When using do not eat or drink.
- S21 When using do not smoke.
- S22 Do not breathe dust.
- S23 Do not breathe vapour.
 - 1 gas
 - 2 fumes
 - 3 spray
- S24 Avoid contact with skin.
- S25 Avoid contact with eyes.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S27 Take off immediately all contaminated clothing.
- S28 After contact with skin, wash immediately with plenty of soap-suds.
 - 1 water
 - 2 polyethylene glycol 400
 - 3 water and soap
 - 4 ethanol
 - 5 copper sulfate solution 2%
 - 6 polyethylene glycol/ethanol (1:1)
- S29 Do not empty into drains.
- S30 Never add water to this product.
- S33 Take precautionary measures against static discharges.
- S35 This material and its container must be disposed of in a safe way.
- S36 Wear suitable protective clothing.
- S37 Wear suitable gloves.
- S38 In case of insufficient ventilation, wear suitable respiratory equipment.
- S39 Wear eye/face protection.
- S40 To clean the floor and all objects contaminated by this material, use...
 - 1 charcoal iodized
- S41 In case of fire and/or explosion do not breathe fumes.
- S42 During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer)
- S43 In case of fire, use ... extinguisher.
 - 1 dry chemical
 - 2 special powder for metal fire
 - 3 dry sand
 - 4 never use water
 - 5 water

- 11 dry chemical
Never use water.
- 12 special powder for metal fire
Never use water.
- 13 dry sand
Never use water.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S46 If swallowed, seek medical advice immediately and show this container or label.
- S47 Keep at temperature not exceeding ...°C.
 - 0 0°C
 - 1 10°C
 - 5 50°C
- S48 Keep wet with ...
 - 1 water
 - 2 ethyl alcohol
 - 3 isopropyl alcohol
 - 4 1,1,2-trichloroethane
- S49 Keep only in the original container.
- S50 Do not mix with ...
 - 1 acids and amines
 - 2 acids and bases
 - 3 acids
- S51 Use only in well-ventilated areas.
- S52 Not recommended for interior use on large surface areas.
- S53 Avoid exposure – obtain special instructions before use.
 - 1 Restricted to professional users.
- S56 Dispose of this material and its container to hazardous or special waste collection point.
- S57 Use appropriate container to avoid environmental contamination.
- S59 Refer to manufacturer/supplier for information on recovery/recycling.
- S60 This material and its container must be disposed of as hazardous waste.
- S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
- S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
- S63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- S64 If swallowed, rinse mouth with water (only if the person is conscious).

Combination Safety Phrases

- S1/2 Keep locked up and out of the reach of children.
- S3/7 Keep container tightly closed in a cool place.
- S3/9/14 Keep in a cool, well-ventilated place away from ...
 - 1 acids and bases
- S3/9/14/49 Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer).
- S3/9/49 Keep only in the original container in a cool well-ventilated place.
- S3/14 Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer).
- S7/8 Keep container tightly closed and dry.
- S7/9 Keep container tightly closed and in a well-ventilated place.
- S7/47 Keep container tightly closed and at a temperature not exceeding ...°C (to be specified by the manufacturer).
- S20/21 When using do not eat, drink or smoke.
- S24/25 Avoid contact with skin and eyes.

- S27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer).
- S29/35 Do not empty into drains; dispose of this material and its container in a safe way.
- S29/56 Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.
- S36/37 Wear suitable protective clothing and gloves.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S36/39 Wear suitable protective clothing and eye/face protection.
- S37/39 Wear suitable gloves and eye/face protection.
- S47/49 Keep only in the original container at a temperature not exceeding ...°C (to be specified by the manufacturer).