

## R-phrases

- R1 - Explosive when dry.
- R2 - Risk of explosion by shock, friction, fire or other sources of ignition.
- R3 - Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R4 - Forms very sensitive explosive metallic compounds.
- R5 - Heating may cause an explosion.
- R6 - Explosive with or without contact with air.
- R7 - May cause fire.
- R8 - Contact with combustible material may cause fire.
- R9 - 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 sensitisation 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.

R 14/15 - Reacts violently with water, liberating extremely flammable gases.

R 15/29 - Contact with water liberates toxic, extremely flammable gas.

R 20/21 - Harmful by inhalation and in contact with skin.

R 20/22 - Harmful by inhalation and if swallowed.

R 21/22 - Harmful in contact with skin and if swallowed.

R 20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.

R 23/24 - Toxic by inhalation and in contact with skin.

R 24/25 - Toxic in contact with skin and if swallowed.

R 23/25 - Toxic by inhalation and if swallowed.

R 23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.

R 26/27 - Very toxic by inhalation and in contact with skin.

R 26/28 - Very toxic by inhalation and if swallowed.

R 26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.

R 27/28 - Very toxic in contact with skin and if swallowed.

R 36/37 - Irritating to eyes and respiratory system.

R 36/38 - Irritating to eyes and skin.

R 37/38 - Irritating to respiratory system and skin.

R 36/37/38 - Irritating to eyes, respiratory system and skin.

R 39/23 - Toxic: danger of very serious irreversible effects through inhalation.

R 39/24 - Toxic: danger of very serious irreversible effects in contact with skin.

R 39/25 - Toxic: danger of very serious irreversible effects if swallowed.

R 39/32/24 - Toxic: danger of very serious irreversible effects through inhalation and in contact with skin.

R 39/23/25 - Toxic: danger of very serious irreversible effects through inhalation and if swallowed.

R 39/24/25 - Toxic: danger of very serious irreversible effects in contact with skin and if swallowed.

R 39/23/24/25 - Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

R 39/26 - Very toxic: danger of very serious irreversible effects through inhalation.

R 39/26/27 - Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin.

R 39/27 - Very toxic: danger of very serious irreversible effects in contact with skin.

R 39/28 - Very toxic: danger of very serious irreversible effects if swallowed.

R 39/26/28 - Very toxic: danger of very serious irreversible effects through inhalation and if swallowed.

R 39/27/28 - Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed.

R 39/26/27/28 - Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

R 68/20 - Harmful: possible risk of irreversible effects through inhalation.

R 68/21 - Harmful: possible risk of irreversible effects in contact with skin.

R 68/22 - Harmful: possible risk of irreversible effects if swallowed.

R 68/20/21 - Harmful: possible risk of irreversible effects through inhalation and in contact with skin.

R 68/20/22 - Harmful: possible risk of irreversible effects through inhalation and if swallowed.

R 68/21/22 - Harmful: possible risk of irreversible effects in contact with skin and if swallowed.

R 68/20/21/22 - Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

R 42/43 - May cause sensitization by inhalation and skin contact.

R 48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R 48/21 - Harmful: danger of serious damage to health by prolonged exposure in contact with skin.

R 48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed.

R 48/20/21 - Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.

R 48/20/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R 48/21/22 - Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.

R 48/20/21/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R 48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R 48/24 - Toxic: danger of serious damage to health by prolonged exposure in contact with skin.

R 48/25 - Toxic: danger of serious damage to health by prolonged exposure if swallowed.

R 48/23/24 - Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin.

R 48/23/25 - Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R 48/24/25 - Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed.

R 48/23/24/25 - Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R 50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## S-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 ... (appropriate liquid to be specified by the manufacturer)
- S 6 - Keep under ... (inert gas to be specified by the manufacturer)
- S 7 - Keep container tightly closed
- S 8 - Keep container dry
- S 9 - Keep container in a well-ventilated place
- S 12 - Do not keep the container sealed
- S 13 - Keep away from food, drink and animal feedingstuffs
- S 14 - Keep away from ... (incompatible materials to be indicated by the manufacturer)
- S 15 - Keep away from heat
- S 16 - Keep away from sources of ignition – No smoking
- S 17 - Keep away from combustible material
- S 18 - Handle and open container with care
- S 20 - When using do not eat or drink
- S 21 - When using do not smoke
- S 22 - Do not breathe dust
- S 23 - Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)
- S 24 - Avoid contact with skin
- S 25 - Avoid contact with eyes
- S 26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S 27 - Take off immediately all contaminated clothing
- S 28 - After contact with skin, wash immediately with plenty of (to be specified by the manufacturer)
- S 29 - Do not empty into drains
- S 30 - Never add water to this product
- S 33 - Take precautionary measures against static discharges
- S 35 - This material and its container must be disposed of in a safe way
- S 36 - Wear suitable protective clothing
- S 37 - Wear suitable gloves
- S 38 - In case of insufficient ventilation wear suitable respiratory equipment
- S 39 - Wear eye/face protection
- S 40 - To clean the floor and all objects contaminated by this material use ... (to be specified by the manufacturer)
- S 41 - In case of fire and/or explosion do not breathe fumes
- S 42 - During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer)
- S 43 - In case of fire use ... (indicate in the space the precise type of fire-fighting equipment. If water increases the risk add: Never use water)
- S 45 - In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
- S 46 - If swallowed, seek medical advice immediately and show this container or label
- S 47 - Keep at temperature not exceeding ...°C (to be specified by the manufacturer)
- S 48 - Keep wetted with ... (appropriate material to be specified by the manufacturer)
- S 49 - Keep only in the original container
- S 50 - Do not mix with ... (to be specified by the manufacturer)
- S 51 - Use only in well-ventilated areas
- S 52 - Not recommended for interior use on large surface areas
- S 53 - Avoid exposure – Obtain special instructions before use

S 56 - Dispose of this material and its container to hazardous or special waste collection point  
S 57 - Use appropriate containment to avoid environmental contamination  
S 59 - Refer to manufacturer/supplier for information on recovery/recycling  
S 60 - This material and its container must be disposed of as hazardous waste  
S 61 - Avoid release to the environment. Refer to special instructions/safety data sheet  
S 62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label  
S 63 - In case of accident by inhalation: remove casualty to fresh air and keep at rest  
S 64 - If swallowed, rinse mouth with water (only if the person is conscious)  
S 1/2 - Keep locked up and out of the reach of children.  
S 3/7 - Keep container tightly closed in a cool place.  
S 3/9/14 - Keep in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer).  
S 3/9/49 - Keep only in the original container in a cool, well-ventilated place.  
S 3/9/14/49 - Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer).  
S 3/14 - Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer).  
S 7/8 - Keep container tightly closed and dry.  
S 7/9 - Keep container tightly closed and in a well-ventilated place.  
S 7/47 - Keep container tightly closed and at a temperature not exceeding ... °C (to be specified by the manufacturer).  
S 20/21 - When using do not eat, drink or smoke.  
S 24/25 - Avoid contact with skin and eyes.  
S 27/28 - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer).  
S 29/35 - Do not empty into drains; dispose of this material and its container in a safe way.  
S 29/56 - Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
S 36/37 - Wear suitable protective clothing and gloves.  
S 36/39 - Wear suitable protective clothing and eye/face protection.  
S 37/39 - Wear suitable gloves and eye/face protection.  
S 36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.  
S 47/49 - Keep only in the original container at a temperature not exceeding ... °C (to be specified by the manufacturer).

[http://www.msds-europe.com/id-485-r\\_s\\_phrases.html](http://www.msds-europe.com/id-485-r_s_phrases.html)