R- a S- věty v angličtině používané v bezpečnostních listech

Single 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
R13 (obsolet): Extremely flammable liquid gas
(This R-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
R14: Reacts violently with water.
R15: Contact with water liberates extremely flammable gases.
R15.1 (Merck) Contact with acid 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.
Riedel-de Haen R23K: Also toxic by inhalation.
R24: Toxic in contact with skin.
Riedel-de Haen R24K: Also toxic in contact with skin.
R25: Toxic if swallowed.
*Riedel-de Haen R25K*: Also toxic if swallowed.
R26: Very toxic by inhalation.
*Riedel-de Haen R26K*: Also very toxic by inhalation.
R27: Very toxic in contact with skin
*Riedel-de Haen R27A*: Very toxic in contact with eyes.
*Riedel-de Haen R27K*: Also very toxic in contact with skin.
*Riedel-de Haen R27AK*: Also very toxic in contact with eyes.
R28: Very toxic if swallowed.
*Riedel-de Haen R28K*: Also 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.
*R31.1 (Merck)* Contact with alkalies 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.
*Riedel-de Haen R36A*: Lacrimating
R37: Irritating to respiratory system.
R38: Irritating to skin.
R39: Danger of very serious irreversible effects.
R40: Possible risk of cancer.

**CAUTION:** Until 2001 this R-phrase was used for possible mutagenic or teratogenic risks as well. These risks are now labelled with R68!

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.
R47 (obsolet): May cause deformities.
(This R-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
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 risks of irreversible effects.
Rnings of R-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.
R21/22: Harmful in contact with skin and if swallowed.
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.
R24/25: Toxic in contact with skin and if swallowed.
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.
R27/28: Very toxic in contact with skin and if swallowed.
R26/28: Very toxic by inhalation and if swallowed.
R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
R36/37: Irritating to eyes and respiratory system.
R37/38: Irritating to respiratory system and skin.
R36/38: Irritating to eyes and skin.
R36/37/38: Irritating to eyes, 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.
**R- a S- věty v angličtině používané v bezpečnostních listech**

- **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.
- **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.
Single S-Phrases

S1: Keep locked up.
S2: Keep out of the reach of children.
S3: Keep in a cool place.
S4: Keep away from living quarters.
S5: Keep contents under ... (appropriate liquid to be specified by the manufacturer).
Merck S5.1: Keep contents under water.
Merck S5.2: Keep contents under petroleum.
Merck S5.3: Keep contents under paraffin oil.
Riedel-de Haen S5A: Keep contents under paraffin oil.
Riedel-de Haen S5B: Keep contents under petroleum.
Riedel-de Haen S5C: Keep contents under protecting liquid.
S6: Keep contents under ... (appropriate gas to be specified by the manufacturer).
Merck S6.1: Keep contents under nitrogen.
Merck S6.2: Keep contents under argon.
Merck S6.3: Keep contents under carbon dioxide.
Riedel-de Haen S6A: Keep contents under protecting gas.
Riedel-de Haen S6B: Keep contents under argon.
Riedel-de Haen S6C: Keep contents under argon.
S7: Keep container tightly closed.
S8: Keep container dry.
S9: Keep container in a well-ventilated place.
S10 (obsolete): Keep content wet.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
S11 (obsolete): Avoid contact with air.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
S12: Do not keep the container sealed.
S13: Keep away from food, drink and animal feedingstuffs.
S14: Keep away from ... (incompatible materials to be indicated by the manufacturer)
Merck S14.1: Keep away from reducing agents, heavy metal compounds, acids and alkalis.
Merck S14.2: Keep away from oxidizing and acidic agents and heavy metal compounds.
Merck S14.3: Keep away from iron.
Merck S14.4: Keep away from water and lyes.
Merck S14.5: Keep away from acids.
Merck S14.6: Keep away from lyes.
Merck S14.7: Keep away from metals.
Merck S14.8: Keep away from oxidizing and acidic agents.
Merck S14.9: Keep away from combustible organic compounds.
Merck S14.10: Keep away from acids, reducing agents and combustible materials.
Merck S14.11: Keep away from combustible material.
(This is unnecessary because it equals S17!)
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 gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Merck S23.1: Do not breath gas.
Merck S23.2: Do not breath vapour.
Merck S23.3: Do not breath spray.
Merck S23.4: Do not breath fumes.
Merck S23.5: Do not breathe vapor/spray.
Riedel-de Haen S23A: Do not breath gas.
Riedel-de Haen S23B: Do not breath fumes.
Riedel-de Haen S23C: Do not breath 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 ... (to be specified by the manufacturer).

Merck S28.1: After contact with skin, wash immediately with plenty of water.
Merck S28.2: After contact with skin, wash immediately with plenty of water and soap.
Merck S28.3: After contact with skin, wash immediately with plenty of water and soap, if possible also with polyethylene glycol 400.
Merck S28.4: After contact with skin, wash immediately with plenty of polyethylene glycol 300 and ethanol (2:1) and afterwards with plenty of water and soap.
Merck S28.5: After contact with skin, wash immediately with plenty of polyethylene glycol 400.
Merck S28.6: After contact with skin, wash immediately with plenty of polyethylene glycol 400 and afterwards clean with plenty of water.

Merck S28.7: After contact with skin, wash immediately with plenty of water and acidic soap.
Riedel-de Haen S28A: After contact with skin, wash immediately with plenty of a 2% copper(II)-sulfate solution.
Riedel-de Haen S28B: After contact with skin, wash immediately with plenty of polyethylene glycol.
Riedel-de Haen S28C: After contact with skin, wash immediately with plenty of polyethylene glycol / ethanol (1:1).
Riedel-de Haen S28D: After contact with skin, wash immediately with plenty of water and soap.
S29: Do not empty into drains.
S30: Never add water to this product.
S31 (obsolete): Keep away from explosive materials.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
S33: Take precautionary measures against static discharges.
S34 (obsolete): Avoid strokes and frictions.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
S35: This material and its container must be disposed of in a safe way.
Merck S35.1: This material and its container must be disposed of by treating with a 2% sodium hydroxide solution.
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 ... (to be specified by the manufacturer).
Merck S40.1: To clean the floor and contaminated objects, use water.
Riedel-de Haen S40A: To clean the floor and contaminated objects, use iodized active carbon.
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 ... (indicate in the space the precise type of fire-fighting equipment. If water increases risk, add - 'Never use water')
Merck S43.1: In case of fire use water.
Merck S43.2: In case of fire use water or powder.
Merck S43.3: In case of fire use fire powder. Never use water.
Merck S43.4: In case of fire use carbon dioxide. Never use water.
Merck S43.6: In case of fire use sand. Never use water.
Merck S43.7: In case of fire use metal fire powder. Never use water.
Merck S43.8: In case of fire use sand, carbon dioxide or fire powder. Never use water.
Riedel-de Haen S43A: In case of fire use sand. Never use water.
S44 (obsolete): If you feel unwell, seek medical advice immediately. (Show the label where possible.)
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)
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. (To be specified by the manufacturer.)
FU-Safety data base S4730: Keep at temperature not exceeding 30 °C.
FU-Safety data base S4740: Keep at temperature not exceeding 40 °C.
S48: Keep wet with ... (appropriate material to be specified by the manufacturer)
Merck S48.1: Keep wet with water.
Riedel-de Haen S48A: Keep wet with water.
S49: Keep only in the original container.
S50: Do not mix with ... (to be specified by the manufacturer)

Merck S50.1: Do not mix with acids.
Merck S50.2: Do not mix with lyes.
Merck S50.3: Do not mix with strong acids or lyes, nonferrous heavy metals and their salts.

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.

S54 (obsolete): Before draining of to sewage disposal plant ask for permission of the competent authority.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)

S55 (obsolete): Before draining of into the sewage system or into waters treat according to state of art.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)

S56: Dispose of this material and its container at hazardous or special waste collection point.
S57: Use appropriate container to avoid environmental contamination.

S58 (obsolete): Dispose as hazardous waste.
(This S-phrase is no longer designated by the version of the GefStoffV published on 26.10.93.)

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).
Combinations of S-Phrases:

S1/2: Keep locked up and out of the reach of children.
S3/7: Keep container tightly closed in a cool place.
S3/7/9 (obsolete): Keep container tightly closed in a cool, well-ventilated place.
S3/9 (obsolete): Keep container in a cool, well-ventilated place.
S3/9/14: Keep in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer)
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 container tightly closed and dry.
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.
S29/56: Do not empty into drains, dispose of this material and its container at 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)