1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Potassium thiocyanate
Product Number: P3011
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Harmful by ingestion.

Target Organs
Central nervous system, Cardiovascular system., Thyroid

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H302 + H312 Harmful if swallowed or in contact with skin
H332 Harmful if inhaled.
H402 Harmful to aquatic life.

Precautionary statement(s)
P280 Wear protective gloves/ protective clothing.

Other hazards
Contact with acids liberates very toxic gas.

HMIS Classification
Health hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0
NFPA Rating

Health hazard: 1
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: Harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Potassium rhodanide
Formula: CKNS
Molecular Weight: 97.18 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium thiocyanate</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>333-20-0</td>
</tr>
<tr>
<td>EC-No.</td>
<td>206-370-1</td>
</tr>
<tr>
<td>Index-No.</td>
<td>615-030-00-5</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Dry powder

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Potassium oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids.

Product is sensitive to light and moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium thiocyanate</td>
<td>333-20-0</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
</tbody>
</table>

Remarks
Skin contact does contribute to exposure.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form solid
Colour no data available

Safety data
pH 5.3 - 8.7 at 97.2 g/l at 25 °C (77 °F)
Melting point/freezing point
Melting point/range: 173 °C (343 °F) - lit.
Boiling point
no data available
Flash point
not applicable
Ignition temperature
no data available
Autoignition temperature
no data available
Lower explosion limit
no data available
Upper explosion limit
no data available
Vapour pressure
no data available
Density
1.890 g/cm³
Water solubility
ca.97.2 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water
no data available
Relative vapour density
no data available
Odour
no data available
Odour Threshold
no data available
Evaporation rate
no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
no data available
Conditions to avoid
Avoid moisture.
Materials to avoid
acids, Strong bases
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Potassium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral - rat - 854 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration:Dyspnea.
Inhalation LC50
Dermal LD50
Other information on acute toxicity
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Genotoxicity in vitro - Equivocal evidence.
Histidine reversion (Ames)

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
Developmental Toxicity - Domestic Animals - Oral
Specific Developmental Abnormalities: Endocrine system.
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Signs and Symptoms of Exposure
Nausea, Headache, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: XL1925000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 11 mg/l - 48 h

Persistence and degradability

Bioaccumulative potential
Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 16 Weeks
Bioconcentration factor (BCF): 13.4
Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

<table>
<thead>
<tr>
<th>13. DISPOSAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
</tr>
<tr>
<td>Offer surplus and non-recyclable solutions to a licensed disposal company.</td>
</tr>
<tr>
<td><strong>Contaminated packaging</strong></td>
</tr>
<tr>
<td>Dispose of as unused product.</td>
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</table>

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<tr>
<th>14. TRANSPORT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT (US)</strong></td>
</tr>
<tr>
<td>Not dangerous goods</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
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<tr>
<td>Not dangerous goods</td>
</tr>
<tr>
<td><strong>IATA</strong></td>
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<th>15. REGULATORY INFORMATION</th>
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<tr>
<td><strong>OSHA Hazards</strong></td>
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<tr>
<td>Target Organ Effect, Harmful by ingestion.</td>
</tr>
<tr>
<td><strong>SARA 302 Components</strong></td>
</tr>
<tr>
<td>SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.</td>
</tr>
<tr>
<td><strong>SARA 313 Components</strong></td>
</tr>
<tr>
<td>SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.</td>
</tr>
<tr>
<td><strong>SARA 311/312 Hazards</strong></td>
</tr>
<tr>
<td>Acute Health Hazard, Chronic Health Hazard</td>
</tr>
<tr>
<td><strong>Massachusetts Right To Know Components</strong></td>
</tr>
<tr>
<td>No components are subject to the Massachusetts Right to Know Act.</td>
</tr>
<tr>
<td><strong>Pennsylvania Right To Know Components</strong></td>
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<tr>
<td><strong>New Jersey Right To Know Components</strong></td>
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<tr>
<td><strong>California Prop. 65 Components</strong></td>
</tr>
<tr>
<td>This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.</td>
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</table>

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<tr>
<th>16. OTHER INFORMATION</th>
</tr>
</thead>
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<tr>
<td><strong>Further information</strong></td>
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<tr>
<td>Copyright 2012 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.</td>
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</tbody>
</table>
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.