0. General notes

These products are articles according to article 3.3 of regulation (EC) no. 1907/2006 (REACH). It is not necessary to supply a Safety Data Sheet for these products. Safety Data Sheets stipulate according to Article 31 for hazardous substances and preparations, but not for articles. MSA is obliged to supply its customers with appropriate information to ensure safe handling. A special format is not required for this information.

1. Identification of the substance/mixture and of the company/undertaking

Product identifier: Detector Tube Phosgene

Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Detector tube

Details of the supplier of the safety data sheet

Company name: MSA AUER GmbH
Street: Thiemannstrasse 1
Place: D-12059 Berlin
Telephone: +++49-30-6886-0
Telefax: +++49-30-6886-1558
Emergency telephone: 1-800-255-3924 USA/CDN
++1-813-248-0585 internat.

Further Information: Apply Safety data sheet to the following products:
Part-No. Product name
D5085761 Phosgene - A
D5085854 Phosgene - 0,1
D6092854 Phosgene - ETW

2. Hazards identification

Classification of the substance or mixture: This mixture is not classified as dangerous according to Directive 1999/45/EC. As an article the product does not need to be labelled in accordance with EC-directives or respective national laws.

Label elements

S phrases:
02 Keep out of the reach of children.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
46 If swallowed, seek medical advice immediately and show this container or label.
24/25 Avoid contact with skin and eyes.

Additional advice on labelling: As an article the product does not need to be labelled in accordance with EC-directives or respective national laws.

Other hazards: Detector tube: No hazards deemed to be of major importance. Content: No hazards deemed to be of major importance.
3. Composition/information on ingredients

Mixtures
Chemical characterization: Sealed glass tube, filled with inert granules, treated with lithium chloride and further chemicals, which are not dangerous in their concentration

<table>
<thead>
<tr>
<th>EC No.</th>
<th>Chemical name</th>
<th>Chemical characterization</th>
</tr>
</thead>
<tbody>
<tr>
<td>231-212-3</td>
<td>Lithium chloride</td>
<td></td>
</tr>
<tr>
<td>7447-41-8</td>
<td>Xn R22-36/38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2A; H302 H315 H319</td>
<td></td>
</tr>
</tbody>
</table>

Hazardous components

<table>
<thead>
<tr>
<th>EC No.</th>
<th>Chemical name</th>
<th>Chemical characterization</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>231-212-3</td>
<td>Lithium chloride</td>
<td></td>
<td>1-2%</td>
</tr>
<tr>
<td>7447-41-8</td>
<td>Xn R22-36/38</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2A; H302 H315 H319</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of R- and H-phrases: see section 16.

4. First aid measures

Description of first aid measures

After inhalation: Not applicable for intact detector tubes.
When indicator material is spilled: If you feel unwell, seek medical advice (show the label where possible).

After contact with skin: Not applicable for intact detector tubes.
When indicator material is spilled: Wash off immediately with plenty of water. In the case of skin irritation or allergic reactions see a physician.

After contact with eyes: Not applicable for intact detector tubes.
When indicator material is spilled: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice (15 min).

After ingestion: Not applicable for intact detector tubes.
When indicator material is spilled: Rinse mouth. Call a physician immediately.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: The product itself does not burn. Use extinguishing measures that are appropriate to the environment.

Extinguishing media which must not be used for safety reasons: None.

Special hazards arising from the substance or mixture: None.
6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Release not possible if used properly.

Methods and material for containment and cleaning up:

When indicator material is spilled: Mop up whilst dry. Avoid dust formation. Avoid contact of breakage of glass and indicator material. Dispose of as described in section 13.

7. Handling and storage

Precautions for safe handling
Advice on safe handling: See the specific Instruction for use.
Advice on protection against fire and explosion: No special precautions required.

Conditions for safe storage, including any incompatibilities
Advice on storage compatibility: Do not store together with edibles.
Further information on storage conditions: See the specific Instruction for use. Store in cool place (< 20°C)

8. Exposure controls/personal protection

Control parameters

Additional advice on limit values: Release not possible if used properly.

Exposure controls
Protective and hygiene measures: Avoid contact with eyes or skin after breaking of the tub tips.

Respiratory protection: Not required.
Hand protection: Not required.

Eye protection: Not required.
Skin protection: Not required.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state: Granules in a glass tube.
Colour: yellow
Safety information for products

Detector Tube Phosgene

Changes in the physical state

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>n.a.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>n.a.</td>
</tr>
<tr>
<td>Flash point</td>
<td>n.a.</td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>n.a.</td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>n.a.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>n.a.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>low solubility</td>
</tr>
<tr>
<td>(at 20 °C)</td>
<td></td>
</tr>
<tr>
<td>Viscosity / dynamic</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactivity: None if handled correctly
Possibility of hazardous reactions: None if handled correctly
Conditions to avoid: None if handled correctly
Hazardous decomposition products: No decomposition if stored and applied as directed.
Further information: After the opening of the tube: Sensitive to air (discolouration)

11. Toxicological information

Information on toxicological effects
Toxicokinetics, metabolism and distribution: Not applicable for intact detector tubes.
Acute toxicity:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical name</th>
<th>Exposure routes</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>7447-41-8</td>
<td>Lithium chloride</td>
<td>Acute oral toxicity</td>
<td>LD50</td>
<td>526 mg/kg</td>
<td>rats</td>
<td></td>
</tr>
</tbody>
</table>

12. Ecological information

Toxicity: Not applicable for intact detector tubes.
When indicator material is spilled: No data available.
Safety information for products

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Revision date: 06.09.2011
Print date: 06.09.2011
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<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>7447-41-8</td>
<td>Lithium chloride</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>158 mg/l</td>
<td>Rainbow trout (Oncorhynchus mykiss)</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>249 mg/l</td>
<td>Daphnia Magna</td>
<td>48</td>
</tr>
</tbody>
</table>

Persistence and degradability: Not applicable for intact detector tubes.
When indicator material is spilled: No data available.

Bioaccumulative potential: Not applicable for intact detector tubes.
When indicator material is spilled: No data available.

Mobility in soil: Not applicable for intact detector tubes.
When indicator material is spilled: No data available.

Further information: When indicator material is spilled: Should not be released into the environment.

13. Disposal considerations

Waste treatment methods
Recommendation Waste disposal number of waste from residues/unused products:
150202 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; absorbents, filter materials, wiping cloths and protective clothing; absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances Classified as hazardous waste.

Recommendation Waste disposal number of contaminated packaging:
150101 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); paper and cardboard packaging

14. Transport information

Land transport (ADR/RID)
Other applicable information (land transport):
Not classified as dangerous regarding transport regulations.

Inland waterways transport
Other applicable information (inland waterways transport):
Not classified as dangerous regarding transport regulations.

Marine transport
Not classified as dangerous regarding transport regulations.

Other applicable information (marine transport):

Air transport
Not classified as dangerous regarding transport regulations.

Other applicable information (air transport):

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

16. Other information

Changes:
Sections which have been changed in comparison to the preceding edition: 1, 2, 3, 8, 10, 11, 12, 14

Abbreviations and acronyms:
n.a. = not applicable
n.d. = not determined

Full text of R-phrases referred to under sections 2 and 3:
22 Harmful if swallowed.
36/38 Irritating to eyes and skin.

Full text of H-Statements referred to under sections 2 and 3:
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Further Information:
The information is based on present levels of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.
The product is to be used exclusively for the applications named in the technical leaflet or in the processing instructions. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)