SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product Number: C0232
Product name: 2-Chloro-5-(chloromethyl)thiazole
CAS Registry Nr: 105827-91-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Laboratory chemicals, Manufacture of substances.

1.3 Details of the supplier of the safety data sheet

Company: Chemodex AG
          CH - 9000 St. Gallen
          Switzerland, Europe
          Tel: +41 71 244 48 25
          Fax: +41 71 244 48 26
          Email: info@chemodex.com
          Website: www.chemodex.com

1.4 Emergency telephone number

Tox Info Suisse: +41 44 251 51 51

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4)          H302
Acute toxicity, Dermal (Category 3)       H311
Skin corrosion (Category 1B)              H314
Serious eye damage (Category 1)          H318
Skin sensitisation (Category 1)           H317
Acute aquatic toxicity (Category 2)  H401
Chronic aquatic toxicity (Category 2)  H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word  Danger

Hazard statement(s)
H302  Harmful if swallowed.
H311  Toxic in contact with skin.
H314  Causes severe skin burns and eye damage.
H317  May cause an allergic skin reaction.
H318  Causes serious eye damage.
H411  Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P260  Do not breathe dust or mist.
P264  Wash skin thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P272  Contaminated work clothing should not be allowed out of the workplace.
P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330  IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P362  Take off contaminated clothing and wash before reuse.
P391  Collect spillage.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Synonyms:</th>
<th>BR32762</th>
<th>2-Chloro-5-thiazolylmethyl chloride</th>
</tr>
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<tbody>
<tr>
<td>Formula:</td>
<td>C4H3Cl2NS</td>
<td></td>
</tr>
<tr>
<td>Molecular weight:</td>
<td>168 g/mol</td>
<td></td>
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<tr>
<td>CAS-No.:</td>
<td>105827-91-6</td>
<td></td>
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<td>EC-No.:</td>
<td>429-830-5</td>
<td></td>
</tr>
<tr>
<td>Index-No.:</td>
<td>613-266-00-3</td>
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</table>

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Chloro-5-chloromethylthiazole</td>
<td>Acute Tox. 4; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Aquatic Acute 2; Aquatic Chronic 2; H302, H311, H314, H317, H318, H411</td>
<td>&lt;=100%</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of 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
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 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.

6.3 Methods and material for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature 2 - 8 °C. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

**Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin 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.

**Full contact**

Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 480 min

**Splash contact**

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 240 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**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.
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).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| a) Appearance: | Form: clear, liquid  
| Colour: light brown |
| b) Odour: | No data available |
| c) Odour Threshold: | No data available |
| d) pH: | No data available |
| e) Melting point/freezing point: | 30 °C (86 °F) |
| f) Initial boiling point and boiling range: | No data available |
| g) Flash point: | No data available |
| h) Evaporation rate: | No data available |
| i) Flammability (solid, gas): | No data available |
| j) Upper/lower flammability or explosive limits: | No data available |
| k) Vapour pressure: | No data available |
| l) Vapour density: | No data available |
| m) Relative density: | No data available |
| n) Water solubility: | No data available |
| o) Partition coefficient (n-octanol/water): | Log Pow: 2.2 |
| p) Auto-ignition temperature: | No data available |
| q) Decomposition temperature: | No data available |
| r) Viscosity: | No data available |
| s) Explosive properties: | No data available |
| t) Oxidizing properties: | No data available |

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Inhalation: No data available
Dermal: No data available
No data available
Skin corrosion/irritation
Causes skin burns.
Serious eye damage/eye irritation
No data available
Respiratory or skin sensitisation
May cause sensitisation by skin contact.
Germ cell mutagenicity
No data available
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
Specific target organ toxicity - single exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
No data available

12.2 Persistence and degradability
Biodegradability
Result: According to the results of tests of biodegradability this product is not readily biodegradable.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.
SECTION 14: Transport information

**DOT (US)**

<table>
<thead>
<tr>
<th>UN number: 2922</th>
<th>Class: 8 (6.1)</th>
<th>Packing group: II</th>
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<tbody>
<tr>
<td>Proper shipping name:</td>
<td>Corrosive liquids, toxic, n.o.s. (2-Chloro-5-chloromethylthiazole)</td>
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<tr>
<td>Reportable Quantity (RQ):</td>
<td></td>
<td></td>
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<tr>
<td>Poison Inhalation Hazard:</td>
<td>No</td>
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**IMDG**

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<td>EMS-No: F-A, S-B</td>
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<td>CORROSIVE LIQUID, TOXIC, N.O.S. (2-Chloro-5-chloromethylthiazole)</td>
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<tr>
<td>Marine pollutant:</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

**IATA**

<table>
<thead>
<tr>
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<th>Packing group: II</th>
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<td>Proper shipping name:</td>
<td>Corrosive liquid, toxic, n.o.s. (2-Chloro-5-chloromethylthiazole)</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 15: Regulatory information

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
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.

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**
2-Chloro-5-chloromethylthiazole
CAS-No. 105827-91-6
Revision Date

**New Jersey Right To Know Components**
2-Chloro-5-chloromethylthiazole
CAS-No. 105827-91-6
Revision Date

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

<table>
<thead>
<tr>
<th></th>
<th>Acute toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox.</td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Aquatic Acute</td>
<td>Acute aquatic toxicity</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>Chronic aquatic toxicity</td>
</tr>
<tr>
<td>Eye Dam.</td>
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</tr>
<tr>
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<tr>
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</tr>
<tr>
<td>H314</td>
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</tr>
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<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Skin Corr.</td>
<td>Skin corrosion</td>
</tr>
</tbody>
</table>

HMIS Rating
Health hazard: 3
Chronic Health Hazard: 0
Flammability: 0
Physical Hazard 0

NFPA Rating
Health hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0

Further information
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The above information is believed to be correct but shall not be taken as being all inclusive and shall
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