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

1.1 Product identifier
- Molecular formula: Cl H₂ Hg N
- Structure formula: Hg (N H₂) Cl
- Trade name: Mercury(II) amidochloride
- MSDS number: CH0337
- CAS Number: 10124-48-8
- EC number: 233-335-8
- Index number: 080-002-00-6

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Sector of Use
- SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU9 Manufacture of fine chemicals
- SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU24 Scientific research and development

Product category
- PC19 Intermediate
- PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC29 Pharmaceuticals
- PC39 Cosmetics, personal care products
- PC40 Extraction agents

Process category
- PROC1 Use in closed process, no likelihood of exposure
- PROC2 Use in closed, continuous process with occasional controlled exposure
- PROC3 Use in closed batch process (synthesis or formulation)
- PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC15 Use as laboratory reagent

Environmental release category
- ERC1 Manufacture of substances
- ERC2 Formulation of preparations
- ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
- ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

Application of the substance / the mixture
Chemical products for laboratory

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
CARLO ERBA REAGENTS
Chaussée du Vexin
Parc d’Affaires des Portes - BP616
27106 VAL DE REUIL Cedex
Téléphone: +02 32 09 20 00
Télécopie: +02 32 09 20 20

Further information obtainable from:
Q.A / Normative
email: MSDS_CER-SDS@cer.dgroup.it
SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS06 skull and crossbones

Acute Tox. 2  H300 Fatal if swallowed.
Acute Tox. 1  H310 Fatal in contact with skin.
Acute Tox. 2  H330 Fatal if inhaled.

GHS08 health hazard

STOT RE 2  H373 May cause damage to organs through prolonged or repeated exposure.

GHS09 environment

Aquatic Acute 1  H400 Very toxic to aquatic life.
Aquatic Chronic 1  H410 Very toxic to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

T+; Very toxic
R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

Information concerning particular hazards for human and environment:
The product has to be labelled due to the calculation procedure of the "General Classification guideline for Substances of the EU", DIR. 67/548/EC, in the latest valid version, and of the "General Classification guideline for Preparations of the EU", DIR. 99/45/EC, in the latest valid version.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS06  GHS08  GHS09
Signal word: Danger

Hazard statements:
- H300+H310+H330: Fatal if swallowed, in contact with skin or if inhaled.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:
- P264: Wash thoroughly after handling.
- P273: Avoid release to the environment.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P284: In case of inadequate ventilation wear respiratory protection.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

2.3 Other hazards -

Results of PBT and vPvB assessment:
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterization: Substances
- CAS No. Description
  10124-48-8 Mercury(II) amidochloride
- Identification number(s)
  - EC number: 233-335-8
  - Index number: 080-002-00-6

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:
Remove immediately any clothing soiled by the product and wash with plenty of water. The rescuer has to be equipped with individual protection.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation:
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.

After skin contact:
Immediately wash with water and soap and rinse thoroughly. Wash contaminated clothing before reuse.

After eye contact:
Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:
Do not induce vomiting; call for medical help immediately.
Induce vomiting and call for medical help.

4.2 Most important symptoms and effects, both acute and delayed: metallic taste.

Information for doctor:
Show the doctor this Material Safety Data Sheet.

4.3 Indication of any immediate medical attention and special treatment needed
B.A.L. (British Anti Lewisite)
SECTION 5: Firefighting measures

- General Information:
  As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
- 5.1 Extinguishing media
- Suitable extinguishing agents:
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
  Nitrogen oxides (NOx)
  In case of fire, the following can be released:
  Formation of toxic gases is possible during heating or in case of fire.
  Hydrogen chloride (HCl)
  Fumes with metal oxides.
  In the absence of oxygen: Ammonia (NH₃)
- 5.3 Advice for firefighters
- Protective equipment:
  In closed rooms wear a self contained breathing apparatus.
  Do not inhale gases in case or fire or combustion.
- Additional information
  Keep receptacles cool with water spray.

SECTION 6: Accidental release measures

- General Information: Use proper personal protective equipment as indicated in Section 8.
- 6.1 Personal precautions, protective equipment and emergency procedures
  If dust/aerosols is formed, use personal protective equipment.
- 6.2 Environmental precautions:
  Do not allow to enter sewers/surface or ground water.
  Inform respective authorities in case of seepage into water course or sewage system.
- 6.3 Methods and material for containment and cleaning up:
  Pick up mechanically.
  Send for recovery or disposal in suitable containers.
  Dispose contaminated material as waste according to item 13.
  For fine dusts use a vacuum cleaner.
- 6.4 Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Avoid formation of dust and aerosols.
  Adopt adequate ventilation at places where you develop dust.
  Thorough dedusting.
  Open and handle receptacle with care.
- 7.2 Conditions for safe storage, including any incompatibilities
  Storage:
  Requirements to be met by storerooms and receptacles:
  Use polyethylene receptacles.
Trade name: Mercury(II) amidochloride

Unsuitable material for receptacle: aluminium. Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Information about storage in one common storage facility:
Not required.
in particular: iodio.

Further information about storage conditions: Keep receptacle tightly sealed.

7.3 Specific end use(s) No further relevant information available.

*SECTION 8: Exposure controls/personal protection*

Additional information about design of technical facilities:
Safety shower and eye bath. Mechanical exhaust required. No further data; see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: TLV not established.

**DNELs**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>86 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>1325 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative DNEL (workers-local effects Acute) (96h Hg++)</td>
<td>0.06 mg/m³ (Daphnia)</td>
</tr>
<tr>
<td></td>
<td>(96h Hg++)</td>
</tr>
</tbody>
</table>

Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit Value</th>
<th>Medium</th>
<th>Sampling Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>10124-48-8 Mercury(II) amidochloride (&gt;80%)</td>
<td>20 µmol/mol creatinine</td>
<td>urine</td>
<td>random</td>
<td>mercury</td>
</tr>
</tbody>
</table>

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:
In case of making of powders or aerosol, use an aqualung with approved filter. For a short period use a filtering apparatus suitable for the danger.

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the skin.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Filter P3, in case of dust-producing handlings.
Maschera con filtro per vapori di mercurio da tenere a disposizione
Trade name: Mercury(II) amidochloride

- Protection of hands:
The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

Protective gloves

Rubber gloves

Material of gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Thin, disposable gloves in PVC or PE

Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

Thin, disposable gloves in PVC or PE

For the permanent contact gloves made of the following materials are suitable:

Thin, disposable gloves in PVC or PE

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Thin, disposable gloves in PVC or PE

As protection from splashes gloves made of the following materials are suitable:

Thin, disposable gloves in PVC or PE

Not suitable are gloves made of the following materials:

- Body protection: Protective work clothing

 SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

Molecular weight: 252.07 g

Appearance:
- Form: Crystalline powder
- Colour: Whitish
- Odour: Odourless
- Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition
- Melting point/Melting range: 300 °C
- Boiling point/Boiling range: Undetermined.
- Flash point: Not applicable.
- Flammability (solid, gaseous): Product is not flammable.
- Ignition temperature: Not determined.
- Self-igniting: Not determined.
- Danger of explosion: Product does not present an explosion hazard.
Trade name: Mercury(II) amidochloride

### 38.0.2
- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.
- **Vapour pressure:** Not applicable.
- **Density at 20 °C:** 4.5 g/cm³
- **Bulk density at 20 °C:** 450 kg/m³
- **Relative density:** Not determined.
- **Vapour density:** Not applicable.
- **Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with water:** Not determined.
- **organic solvents:** Insoluble
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.

### 9.2 Other information
No further relevant information available.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
  - Reacts with peroxides and other radical forming substances.
  - Catalytic decomposition of hydrogen peroxide.
- **10.4 Conditions to avoid**
  - No further relevant information available.
- **10.5 Incompatible materials:**
  - Chetens
  - acetylen
- **10.6 Hazardous decomposition products:**
  - Toxic metal oxide smoke
  - Hydrogen chloride (HCl)
  - Nitrogen oxides (NOx)

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects
- **Acute toxicity:**
  - **Primary irritant effect:**
    - **on the skin:** No irritant effect.
    - **on the eye:** No relevant irritating effects.
  - **Ingestion:** It can be harmful if swallowed.
- **Inhalation:** Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):** No more relevant data available.
**SECTION 12: Ecological information**

- **12.1 Toxicity**
  - Aquatic toxicity: No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Ecological information** Not available
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
  - Remark: Very toxic for fish
  - Remark: Inhibition of bacterial flora
  - **Additional ecological information:**
    - General notes:
      - Water danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water
      - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
      - Danger to drinking water if even extremely small quantities leak into the ground.
      - Also poisonous for fish and plankton in water bodies.
      - Very toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
  - **Recommendation**
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.
    Reutilise if possible or contact a waste processors for recycling or safe disposal.
  - **Waste disposal key:**
    The European Union does not establish uniform rules for the disposal of chemical waste, which are special waste. Their treatment and elimination of the domestic legislation of each country. So, in each case, you should contact the relevant authorities, or those companies legally authorized for elimination of waste.
    **Uncleaned packaging:**
    The containers and packing materials contaminated with dangerous substances or preparations, have the same treatment products.
  - **Recommendation:**
    Disposal must be made according to official regulations.
    Packagings that may not be cleansed are to be disposed of in the same manner as the product.
    Wash with water to be treated before disposal.

(Contd. of page 8)
### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>14.1 UN-Number</th>
<th>ADR, IMDG, IATA</th>
<th>UN1630</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name</td>
<td>ADR</td>
<td>UN1630 MERCURY AMMONIUM CHLORIDE, ENVIRONMENTALLY HAZARDOUS</td>
</tr>
<tr>
<td></td>
<td>IMDG</td>
<td>MERCURY AMMONIUM CHLORIDE, MARINE POLLUTANT</td>
</tr>
<tr>
<td></td>
<td>IATA</td>
<td>MERCURY AMMONIUM CHLORIDE</td>
</tr>
</tbody>
</table>

| 14.3 Transport hazard class(es) |
| ADR |
| Class | 6.1 (T5) Toxic substances. |
| Label | 6.1 |
| IMDG |
| Class | 6.1 Toxic substances. |
| Label | 6.1 |
| IATA |
| Class | 6.1 Toxic substances. |
| Label | 6.1 |

| 14.4 Packing group | ADR, IMDG, IATA | II |
| 14.5 Environmental hazards: | Environmentally hazardous substance, solid; Marine Pollutant |
| Marine pollutant: | Yes (PP) |
| | Yes (P) |
| | Symbol (fish and tree) |
| Special marking (ADR): | Symbol (fish and tree) |

| 14.6 Special precautions for user | Warning: Toxic substances. |
| Danger code (Kemler): | 60 |
| EMS Number: | F-A,S-A |
| Segregation groups | Ammonium compounds, heavy metals and their salts (including their organometallic compounds), mercury and mercury compounds |

| Transport/Additional information: |
| ADR |
| Excepted quantities (EQ): | E4 |
| Limited quantities (LQ): | 500 g |
| Transport category | 2 |
Trade name: Mercury(II) amidochloride

Tunnel restriction code: D/E
UN "Model Regulation": UN1630, MERCURY AMMONIUM CHLORIDE, ENVIRONMENTALLY HAZARDOUS, 6.1, II

**SECTION 15: Regulatory information**

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

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms:

- GHS06
- GHS08
- GHS09

Signal word: Danger

Hazard statements:

- H300 + H310 + H330: Fatal if swallowed, in contact with skin or if inhaled.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

- P264: Wash thoroughly after handling.
- P273: Avoid release to the environment.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P284: [In case of inadequate ventilation] wear respiratory protection.
- P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

National regulations:

Information about limitation of use:

Technical instructions (air):

<table>
<thead>
<tr>
<th>Class</th>
<th>Share in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Waterhazard class: Water danger class 3 (Assessment by list): extremely hazardous for water.

15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS: Q.A./Normative

Contact:

ITALY:
email: MSDS-CER@carloerbareagenti.com
Phone: 00 39 02 953251

FRANCE:
email: MSDS_CER-SDS@carloerbareactifs.com
Phone: +02 32 09 20 00

References:

ECDIN (Environmental Chem. Data and Information Network)
IUCLID (International Uniform Chemical Information Database)
Abbreviations and acronyms:

- NIOSH: National Institute for Occupational Safety and Health
- Roth: Wassergefährdende Stoffe
- Verschueren: Handbook of Environmental Data on Organic Chemicals
- ChemDAT: Safety Data Sheets from E. Merck on CD-ROM
- Merian: Metals and their compounds in the environment

**Sources**

- DIR. 67/548/EC, in the latest valid version.
- Globally Harmonized System, GHS
- ADR 2013
Annex: Exposure scenario

- Short title of the exposure scenario: Chemical products for laboratory

- Sector of Use
  SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  SU9 Manufacture of fine chemicals
  SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
  SU24 Scientific research and development

- Product category
  PC19 Intermediate
  PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
  PC21 Laboratory chemicals
  PC29 Pharmaceuticals
  PC39 Cosmetics, personal care products
  PC40 Extraction agents

- Process category
  PROC1 Use in closed process, no likelihood of exposure
  PROC2 Use in closed, continuous process with occasional controlled exposure
  PROC3 Use in closed batch process (synthesis or formulation)
  PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
  PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
  PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
  PROC15 Use as laboratory reagent

- Environmental release category
  ERC1 Manufacture of substances
  ERC2 Formulation of preparations
  ERC4 Industrial use of processing aids in processes and products, not becoming part of article
  ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

- Description of the activities / processes covered in the Exposure Scenario
  See section 1 of the annex to the Safety Data Sheet.

- Conditions of use
  According to directions for use.

- Duration and frequency
  5 workdays/week.

- Physical parameters
  - Physical state: Solid
  - Concentration of the substance in the mixture: Raw material.
  - Used amount per time or activity
    According to directions for use.
    Smaller than 100 g per application.

- Other operational conditions
  - Other operational conditions affecting environmental exposure
    Use only on hard ground.
    Observe section 6 of the Safety Data Sheet (Accidental release measures).
  - Other operational conditions affecting worker exposure
    Avoid contact with the skin.
    Avoid breathing particles.
  - Other operational conditions affecting consumer exposure
    Keep out of the reach of children.
  - Other operational conditions affecting consumer exposure during the use of the product
    Not applicable.

- Risk management measures
  - Worker protection
  - Organisational protective measures
    No special measures required.
    Keep good industrial hygiene.

(Contd. on page 13)
38.0.2

· Technical protective measures
  Use product only in enclosed systems.
  Ensure that suitable extractors are available on processing machines

· Personal protective measures
  Do not inhale dust / smoke / mist.
  Avoid contact with the skin.
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
  Filter P3, in case of dust-producing handlings.
  Maschera con filtro per vapori di mercurio da tenere a disposizione
  The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.
  Protective gloves
  Rubber gloves

· Measures for consumer protection
  Ensure adequate labelling.
  Keep locked up and out of the reach of children.

· Environmental protection measures
  · Water  Do not allow to reach sewage system.
  · Soil   Prevent contamination of soil.

· Disposal measures
  Disposal must be made according to official regulations.
  Ensure that waste is collected and contained.

· Disposal procedures
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
  · Waste type  Partially emptied and uncleansed packaging

· Exposure estimation
  · Consumer  Not relevant for this Exposure Scenario.

· Guidance for downstream users  No further relevant information available.