1 Identification

- Product identifier
  - Trade name: Bromodichloromethane
  - Part number: RHH-008
  - CAS Number: 75-27-4
  - EC number: 200-856-7
  - Application of the substance / the mixture: Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: Agilent Technologies, Inc.
    5301 Stevens Creek Blvd.
    Santa Clara, CA 95051 USA
  - Information department:
    Telephone: 800-227-9770
    e-mail: pdl-msds_author@agilent.com
  - Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard identification

- Classification of the substance or mixture
  - GHS08 Health hazard
    Carcinogenicity – Category 2 H351 Suspected of causing cancer.
  - GHS05 Corrosion
    Serious Eye Damage - Category 1 H318 Causes serious eye damage.
  - GHS07
    Acute Toxicity (Oral) - Category 4 H302 Harmful if swallowed.
    Skin Irritation - Category 2 H315 Causes skin irritation.
    Specific Target Organ Toxicity - Single Exposure - Category 3 H335 May cause respiratory irritation.

- Label elements
  - GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    GHS05  GHS07  GHS08

- Signal word: Danger
Hazard-determining components of labeling:
- bromodichloromethane

Hazard statements
- Harmful if swallowed.
- Causes skin irritation.
- Causes serious eye damage.
- Suspected of causing cancer.
- May cause respiratory irritation.

Precautionary statements
- If medical advice is needed, have product container or label at hand.
- Keep out of reach of children.
- Read label before use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If swallowed: Call a poison center/doctor if you feel unwell.
- If on skin: Wash with plenty of water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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/doctor.
- IF exposed or concerned: Get medical advice/attention.
- Specific treatment (see on this label).
- Rinse mouth.
- Take off contaminated clothing and wash it before reuse.
- If skin irritation occurs: Get medical advice/attention.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

- NFPA ratings (scale 0 - 4)
  - Health = 3
  - Fire = 0
  - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = *3
  - Fire = 0
  - Reactivity = 0

Composition/Information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - 75-27-4 bromodichloromethane
4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Immediately call a doctor.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
  Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- 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.

7 Handling and storage

- Handling:
- Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
8 Exposure controls/ Personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
  - 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.
    Avoid contact with the eyes and skin.
  - Breathing equipment:
    When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
    Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
  - Protection of hands:
    Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
  - Material of gloves
    For normal use: nitrile rubber, 11-13 mil thickness
    For direct contact with the chemical: butyl rubber, 12-15 mil thickness
    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.
  - Penetration time of glove material
    For normal use: nitrile rubber: 1 hour
    For direct contact with the chemical: butyl rubber: >4 hours
**Trade name:** Bromodichloromethane

*Eye protection:*

- Tightly sealed goggles

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form: Fluid
  - Color: Colorless
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - Melting point/Melting range: -55 °C
  - Boiling point/Boiling range: 89 °C
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Vapor pressure:** Not determined.
- **Density at 20 °C:** 1.98 g/cm³
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with**
  - Water: Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solids content:** 0.0 %
- **Other information** No further relevant information available.

(Contd. on page 6)
10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: No decomposition if used according to specifications.
- **Possibility of hazardous reactions**: No dangerous reactions known.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**:
    - **ATE (Acute Toxicity Estimate)**
      - Oral LD50: 450 mg/kg (mouse)
  - **75-27-4 bromodichloromethane**
    - Oral LD50: 450 mg/kg (mouse)
  - **Primary irritant effect**:
    - **on the skin**: Irritant to skin and mucous membranes.
    - **on the eye**: Strong irritant with the danger of severe eye injury.
  - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**:
    - **Carcinogenic categories**
      - **IARC (International Agency for Research on Cancer)**: 2B
      - **NTP (National Toxicology Program)**: R

12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
  - **Behavior in environmental systems**:
  - **Bioaccumulative potential**: No further relevant information available.
  - **Mobility in soil**: No further relevant information available.
  - **Additional ecological information**:
  - **General notes**:
    - **Water hazard class 1 (Self-assessment)**: slightly hazardous for water
    - **Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system**.
    - **Must not reach bodies of water or drainage ditch undiluted or unneutralized**.
  - **Results of PBT and vPvB assessment**
    - **PBT**: Not applicable.
    - **vPvB**: Not applicable.
· **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
- **DOT, TDG, IMDG, IATA** UN3082

- **UN proper shipping name**
  - **DOT** Environmentally hazardous substance, liquid, n.o.s. (bromodichloromethane)
  - **TDG** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bromodichloromethane)
  - **IMDG, IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (bromodichloromethane)

- **Transport hazard class(es)**
  - **DOT, IMDG**
    - **Class** 9 Miscellaneous dangerous substances and articles
    - **Label** 9
  - **TDG, IATA**
    - **Class** 9 Miscellaneous dangerous substances and articles
    - **Label** 9

- **Packing group**
  - **DOT, TDG, IMDG, IATA** III

- **Environmental hazards:**
  - **Special marking (TDG):** Symbol (fish and tree)
  - **Special marking (IATA):** Symbol (fish and tree)

- **Special precautions for user**
  - **Warning:** Miscellaneous dangerous substances and articles
  - **Danger code (Kemler):** 90
  - **EMS Number:** F-A,S-F
Trade name: Bromodichloromethane

<table>
<thead>
<tr>
<th>Stowage Category</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td></td>
</tr>
<tr>
<td>Quantity limitations</td>
<td>On passenger aircraft/rail: No limit On cargo aircraft only: No limit</td>
</tr>
<tr>
<td>Hazardous substance:</td>
<td>5000 lbs, 2270 kg</td>
</tr>
<tr>
<td>TDG</td>
<td></td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>5L</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMODICHLOROMETHANE), 9, III</td>
</tr>
</tbody>
</table>

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
  - Section 355 (extremely hazardous substances):
    Substance is not listed.
  - Section 313 (Specific toxic chemical listings):
    Substance is listed.
- TSCA (Toxic Substances Control Act):
  Substance is listed.
- Canadian substance listings:
  - Canadian Domestic Substances List (DSL)
    Substance is not listed.
  - Canadian Ingredient Disclosure list (limit 0.1%)
    Substance is not listed.
  - Canadian Ingredient Disclosure list (limit 1%)
    Substance is listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.
Trade name: Bromodichloromethane

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet:** 03/25/2019 / 1
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
- **Data compared to the previous version altered.**