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

- **Product identifier**
- **Trade name:** Pentachlorobenzene
- **Part number:** RCP-030
- **CAS Number:** 608-93-5
- **EC number:** 210-172-0
- **Index number:** 602-074-00-5
- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany
  - **Further information obtainable from:**
    - Telephone: 0800 603 1000
    - pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

### 2 Hazards identification

- **Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**
    - **GHS02 flame**
      - Flam. Sol. 1 H228 Flammable solid.
    - **GHS09 environment**
      - Aquatic Acute 1 H400 Very toxic to aquatic life.
      - Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.
    - **GHS07**
      - Acute Tox. 4 H302 Harmful if swallowed.

- **Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**
    - The substance is classified and labelled according to the CLP regulation.
Trade name: Pentachlorobenzene

- Hazard pictograms

| GHS02 | GHS07 | GHS09 |

- Signal word Danger

- Hazard-determining components of labelling:
pentachlorobenzene

- Hazard statements
H228 Flammable solid.
H302 Harmful if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

3 Composition/information on ingredients

- Chemical characterisation: Substances
  - CAS No. Description
    608-93-5 pentachlorobenzene
  - Identification number(s)
    - EC number: 210-172-0
    - Index number: 602-074-00-5

4 First aid measures

- Description of first aid measures
- General information:
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

(Contd. on page 3)
### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**: Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**: No further relevant information available.
- **Advice for firefighters**: 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 product to reach sewage system or any water course.  
  Inform respective authorities in case of seepage into water course or sewage system.  
  Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**:  
  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**: No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection**:  
  Keep ignition sources away - Do not smoke.  
  Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**:  
  - **Requirements to be met by storerooms and receptacles**: No special requirements.  
  - **Information about storage in one common storage facility**: Not required.  
  - **Further information about storage conditions**: Keep container tightly sealed.  
  - **Specific end use(s)**: No further relevant information available.
8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Control parameters
- Ingredients with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists valid during the making were used as basis.

- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Wash hands before breaks and at the end of work.
  - Respiratory protection:
    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 11-13mil
    thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct
    contact of the chemical, butyl rubber gloves are recommended 12-15mil 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
  - Eye protection: Not required.

* 9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Solid
    - Colour: Not determined.
  - Odour:
    - Odour threshold: Not determined.
  - pH-value: Not applicable.

- Change in condition
  - Melting point/freezing point: 85-86 °C
  - Initial boiling point and boiling range: 275-277 °C

- Flash point: Not applicable.
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: No decomposition if used according to specifications.
- **Thermal decomposition / conditions to be avoided**: No dangerous reactions known.
- **Possibility of hazardous reactions**:
- **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**
  
  Harmful if swallowed.

- **LD/LC50 values relevant for classification**:

<table>
<thead>
<tr>
<th>route of administration</th>
<th>LD50/LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1,080 mg/kg (rat)</td>
</tr>
</tbody>
</table>
Trade name: Pentachlorobenzene

<table>
<thead>
<tr>
<th>608-93-5 pentachlorobenzene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation Based on available data, the classification criteria are not met.
  - Serious eye damage/irritation Based on available data, the classification criteria are not met.
  - Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
    - Germ cell mutagenicity Based on available data, the classification criteria are not met.
    - Carcinogenicity Based on available data, the classification criteria are not met.
  - Reproductive toxicity Based on available data, the classification criteria are not met.
  - STOT-single exposure Based on available data, the classification criteria are not met.
  - STOT-repeated exposure Based on available data, the classification criteria are not met.
  - Aspiration hazard Based on available data, the classification criteria are not met.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.

- Behaviour in environmental systems:
  - Bioaccumulative potential No further relevant information available.
  - Mobility in soil No further relevant information available.

- Ecotoxic effects:
  - Remark: Very toxic for fish

- Additional ecological information:
  - General notes:
    Water hazard 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
    - 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 together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 3 Flammable
  - HP 6 Acute Toxicity
  - HP 14 Ecotoxic

(Contd. on page 7)
### 14 Transport information

<table>
<thead>
<tr>
<th><strong>· UN-Number</strong></th>
<th>UN3077</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>· UN proper shipping name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· ADR</strong></td>
<td>3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (pentachlorobenzene)</td>
</tr>
<tr>
<td><strong>· IMDG</strong></td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (pentachlorobenzene), MARINE POLLUTANT</td>
</tr>
<tr>
<td><strong>· IATA</strong></td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (pentachlorobenzene)</td>
</tr>
<tr>
<td><strong>· Transport hazard class(es)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· ADR, IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· Class</strong></td>
<td>9 Miscellaneous dangerous substances and articles.</td>
</tr>
<tr>
<td><strong>· Label</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>· Packing group</strong></td>
<td>III</td>
</tr>
<tr>
<td><strong>· Environmental hazards:</strong></td>
<td>Product contains environmentally hazardous substances: pentachlorobenzene</td>
</tr>
<tr>
<td><strong>· Marine pollutant:</strong></td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td><strong>· Special marking (ADR):</strong></td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td><strong>· Special marking (IATA):</strong></td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td><strong>· Special precautions for user</strong></td>
<td>Warning: Miscellaneous dangerous substances and articles.</td>
</tr>
<tr>
<td><strong>· Danger code (Kemler):</strong></td>
<td>90</td>
</tr>
<tr>
<td><strong>· EMS Number:</strong></td>
<td>F-A.S-F</td>
</tr>
<tr>
<td><strong>· Stowage Category</strong></td>
<td>A</td>
</tr>
<tr>
<td><strong>· Stowage Code</strong></td>
<td>SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.</td>
</tr>
<tr>
<td><strong>· Transport in bulk according to Annex II of Marpol and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>· Transport/Additional information:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· ADR</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· Limited quantities (LQ)</strong></td>
<td>5 kg</td>
</tr>
<tr>
<td><strong>· Excepted quantities (EQ)</strong></td>
<td>Code: E1</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per inner packaging: 30 g</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 g</td>
</tr>
</tbody>
</table>
Trade name: Pentachlorobenzene

- **Transport category**: 3
- **IMDG**
  - Limited quantities (LQ): 5 kg
  - Excepted quantities (EQ): Code: E1
    - Maximum net quantity per inner packaging: 30 g
    - Maximum net quantity per outer packaging: 1000 g
- **UN "Model Regulation"**: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (PENTACHLOROBENZENE), 9, III

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I Substance is not listed.
  - Seveso category E1 Hazardous to the Aquatic Environment
  - Qualifying quantity (tonnes) for the application of lower-tier requirements: 100 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements: 200 t

#### Regulation (EU) No 649/2012

- **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.

- **Department issuing SDS**: Document Control / Regulatory
- **Contact**: regulatory@ultrasci.com
- **Abbreviations and acronyms**:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Sol. 1: Flammable solids – Category 1
  - Acute Tox. 4: Acute toxicity – Category 4
  - Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  - Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

- * Data compared to the previous version altered.