1 Identification

- **Product identifier**
- **Trade name**: 2,3,4,5-Tetrachlorobiphenyl (BZ-61)
- **Part number**: RPC-027
- **CAS Number**: 33284-53-6
- **EC number**: 215-648-1
- **Index number**: 602-039-00-4

- **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 Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia

- **Emergency telephone number**: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**

  ![health hazard]

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

- **Label elements**
- **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).

- **Hazard pictograms**

  ![GHS08]

- **Signal word** Warning

- **Hazard-determining components of labelling**
  2,3,4,5-tetrachlorobiphenyl

- **Hazard statements**
  May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Do not breathe dust/fume/gas/mist/vapours/spray.
Trade name: 2,3,4,5-Tetrachlorobiphenyl (BZ-61)

- Get medical advice/attention if you feel unwell.
- 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 and Information on Ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**
  - 33284-53-6 2,3,4,5-tetrachlorobiphenyl
- **Identification number(s)**
  - **EC number**: 215-648-1
  - **Index number**: 602-039-00-4

### 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.
  - **After inhalation**: Supply fresh air; consult doctor in case of complaints.
  - **After skin contact**: Generally the product does not irritate the skin.
  - **After eye contact**: Rinse opened eye for several minutes under running water.
  - **After swallowing**: If symptoms persist consult 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 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents**: Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**
  - During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment**: Mouth respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**: Mount respiratory protective device.
- **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: Ensure good ventilation/exhaustion at the workplace.  
- Information about fire - and explosion protection: Keep respiratory protective device available.

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: None.

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

8 Exposure controls and 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.  
    Store protective clothing separately.  
  - 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.
Trade name: 2,3,4,5-Tetrachlorobiphenyl (BZ-61)

- **Penetration time of glove material**
  - For normal use: nitrile rubber: 1 hour
  - For direct contact with the chemical: butyl rubber: > 4 hours

- **Eye protection:**
  - Tightly sealed goggles

---

## 9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:** Solid
  - **Form:** Solid
  - **Colour:** Not determined.
  - **Odour:** Characteristic
  - **Odour threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**
  - **Melting point/freezing point:** Undetermined.
  - **Initial boiling point and boiling range:** Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Product is not flammable.

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Not determined.

- **Explosive properties:** Product does not present an explosion hazard.

- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.

- **Vapour pressure:** Not applicable.

- **Density:** Not determined.
  - **Relative density:** Not determined.
  - **Vapour density:** Not applicable.
  - **Evaporation rate:** Not applicable.

- **Solubility in / Miscibility with water:** Insoluble.

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**
  - **Dynamic:** Not applicable.
  - **Kinematic:** Not applicable.
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**
  - **Primary irritant effect**:
    - **Skin corrosion/irritation**: No irritant effect.
    - **Serious eye damage/irritation**: No irritating effect.
    - **Respiratory or skin sensitisation**: No sensitising effects known.

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.
- **Additional ecological information**:
- **General notes**:
  - Water hazard class 3 (German Regulation) (Self-assessment): 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.
- **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.

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

14 Transport information

- UN-Number
  - ADG, IMDG, IATA
    UN3432

- UN proper shipping name
  - ADG
    3432 POLYCHLORINATED BIPHENYLs, SOLID, ENVIRONMENTALLY HAZARDOUS
  - IMDG
    POLYCHLORINATED BIPHENYLs, SOLID, MARINE POLLUTANT
  - IATA
    POLYCHLORINATED BIPHENYLs, SOLID

- Transport hazard class(es)
  - ADG, IMDG
    - Class
      9 Miscellaneous dangerous substances and articles.
    - Label
      9

- IATA
  - Class
    9 Miscellaneous dangerous substances and articles.
  - Label
    9

- Packing group
  - ADG, IMDG, IATA
    II

- Environmental hazards:
  - Product contains environmentally hazardous substances: Aroclor 1268 (PCB 1268)
  - Symbol (fish and tree)

- Marine pollutant:
  - Symbol (fish and tree)

- Special marking (ADG):

- Special precautions for user
  - Warning: Miscellaneous dangerous substances and articles.

- Danger code (Kemler):
  - 90

- EMS Number:
  - F-A,S-A

- Stowage Category
  - A
Safety Data Sheet  
according to WHS Regulations

Trade name: 2,3,4,5-Tetrachlorobiphenyl (BZ-61)

- Segregation Code: SG50 Segregation from foodstuffs as in 7.3.4.2.1, 7.6.3.1.2 or 7.7.3.6.

- Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable.

- Transport/Additional information:
  - ADG
  - Limited quantities (LQ): 1 kg
    Code: E2
    Maximum net quantity per inner packaging: 30 g
    Maximum net quantity per outer packaging: 500 g
  - Excepted quantities (EQ)
  - Transport category: 0
  - Tunnel restriction code: D/E
  - IMDG
  - Limited quantities (LQ): 1 kg
    Code: E2
    Maximum net quantity per inner packaging: 30 g
    Maximum net quantity per outer packaging: 500 g
  - Excepted quantities (EQ)
  - UN "Model Regulation": UN 3432 POLYCHLORINATED BIPHENYLS, SOLID, 9, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Australian Inventory of Chemical Substances
    Substance is not listed.
  - Standard for the Uniform Scheduling of Medicines and Poisons
    Substance is not listed.
  - 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
  - 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
  - EINECS: European Inventory of Existing Commercial Chemical Substances

(Contd. on page 8)
<table>
<thead>
<tr>
<th>CAS: Chemical Abstracts Service (division of the American Chemical Society)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC: Volatile Organic Compounds (USA, EU)</td>
</tr>
<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.