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

- **Product identifier**
  - Trade name: 2,2',3,4,4',5,6'-Heptachlorobiphenyl Solution (BZ182)
  - Part number: RPC-162AS

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

- **Application of the substance / the mixture**
  - Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - ULTRA Scientific, inc.
    - 250 Smith Street
    - North Kingstown, RI 02852
    - USA

- **Further information obtainable from:**
  - Telephone: (401) 294-9400
  - Fax: (401) 295-2300
  - E-mail: regulatory@ultrasci.com

- **Emergency telephone number:**
  - US: (800) 424-9300
  - Outside US: (703) 527-3887

2 Hazards identification

- **Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**

  - **GHS02 flame**
    - Flam. Liq. 2 H225 Highly flammable liquid and vapour.

  - **GHS08 health hazard**
    - Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

  - **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**
    - Skin Irrit. 2 H315 Causes skin irritation.
    - STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**
  - The product is classified and labelled according to the CLP regulation.
1. Hazard pictograms

![GHS02 GHS07 GHS08 GHS09]

2. Signal word Danger

3. Hazard-determining components of labelling:
   - 2,2,4-trimethylpentane

4. Hazard statements
   - H225 Highly flammable liquid and vapour.
   - H315 Causes skin irritation.
   - H336 May cause drowsiness or dizziness.
   - H304 May be fatal if swallowed and enters airways.
   - H410 Very toxic to aquatic life with long lasting effects.

5. 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.
   - P241 Use explosion-proof electrical/ventilating/lighting equipment.
   - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
   - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
   - P405 Store locked up.
   - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

6. Other hazards

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

8. Composition/information on ingredients

   - Chemical characterisation: Mixtures
   - Description: Mixture of substances listed below with nonhazardous additions.

   - Dangerous components:
     - CAS: 540-84-1 EINECS: 208-759-1
     - 2,2,4-trimethylpentane
     - Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; STOT SE 3, H336
     - 99.985%

   - Additional information: For the wording of the listed hazard phrases refer to section 16.

9. First aid measures

   - Description of first aid measures
     - 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.
     - After swallowing: If symptoms persist consult doctor.
44.2.6

· 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:
    CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· For safety reasons unsuitable extinguishing agents: Water with full jet
· 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:
  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:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  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: Store in a cool location.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep container tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
· 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:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· 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.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.

· Respiratory protection: Not required.

· Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:
  · Form: Fluid
  · Colour: Colourless
  · Odour: Nearly odourless
  · Odour threshold: Not determined.

· pH-value: Not determined.
Trade name: 2,2',3,4,4',5,6'-Heptachlorobiphenyl Solution (BZ182)

- Change in condition
  - Melting point/freezing point: -107 °C
  - Initial boiling point and boiling range: 99 °C

- Flash point: -12 °C

- Flammability (solid, gas): Not applicable.

- Ignition temperature: 410 °C

- Decomposition temperature: Not determined.

- Auto-ignition temperature: Product is not self-igniting.

- Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- Explosion limits:
  - Lower: 1.1 Vol %
  - Upper: 6 Vol %

- Vapour pressure at 20 °C: 41.25 hPa

- Density at 20 °C: 0.692 g/cm³
  - Relative density: Not determined.
  - Vapour 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.

- Solvent content:
  - Organic solvents: 100.0 %
  - VOC (EC): 99.99 %

- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
  - Thermal decomposition / conditions to be avoided: 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: Based on available data, the classification criteria are not met.
44.2.6

· LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>540-84-1 2,2,4-trimethylpentane</td>
<td>&gt;5000 mg/kg (rat)</td>
<td>&gt;2000 mg/kg (rabbit)</td>
<td>&gt;33.52 mg/L (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation
    Causes skin irritation.
  - 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 (carcinogenity, 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
    May cause drowsiness or dizziness.
  - STOT-repeated exposure Based on available data, the classification criteria are not met.
  - Aspiration hazard
    May be fatal if swallowed and enters airways.

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 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even 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
Trade name: 2,2',3,4,4',5,6'-Heptachlorobiphenyl Solution (BZ182)

HP 4 Irritant - skin irritation and eye damage
HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 14 Ecotoxic

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

### 14 Transport information

- **UN-Number**
  - ADR, IMDG, IATA: UN1262

- **UN proper shipping name**
  - ADR: 1262 OCTANES mixture, ENVIRONMENTALLY HAZARDOUS
  - IMDG: OCTANES mixture, MARINE POLLUTANT
  - IATA: OCTANES mixture

- **Transport hazard class(es)**

  - **ADR, IMDG**
    - **Class:** 3 Flammable liquids.
    - **Label:** 3

  - **IATA**
    - **Class:** 3 Flammable liquids.
    - **Label:** 3

- **Packing group**
  - ADR, IMDG, IATA: II

- **Environmental hazards:**
  - Product contains environmentally hazardous substances: 2,2,4-trimethylpentane
  - **Marine pollutant:** Symbol (fish and tree)
  - **Special marking (ADR):** Symbol (fish and tree)

- **Special precautions for user**
  - **Warning:** Flammable liquids.
  - **Danger code (Kemler):** 33
  - **EMS Number:** F-E,S-E
  - **Stowage Category:** B

- **Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
Trade name: 2,2',3,4,4',5,6'-Heptachlorobiphenyl Solution (BZ182)

Transport/Additional information:
- ADR
- Limited quantities (LQ) 1L
- Excepted quantities (EQ) Code: E2
- Maximum net quantity per inner packaging: 30 ml
- Maximum net quantity per outer packaging: 500 ml
- Transport category 2
- Tunnel restriction code D/E

IMDG
- Limited quantities (LQ) 1L
- Excepted quantities (EQ) Code: E2
- Maximum net quantity per inner packaging: 30 ml
- Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":
- UN 1262 OCTANES MIXTURE, ENVIRONMENTALLY HAZARDOUS, 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- Seveso category
  - E1 Hazardous to the Aquatic Environment
  - P5c FLAMMABLE LIQUIDS
- 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 (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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.

- Relevant phrases
  - H225 Highly flammable liquid and vapour.
  - H304 May be fatal if swallowed and enters airways.
  - H315 Causes skin irritation.
  - H336 May cause drowsiness or dizziness.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.

- 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
Trade name: 2,2',3,4,4',5,6'-Heptachlorobiphenyl Solution (BZ182)

EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified 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. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1
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