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

- **Product identifier**
  - **Trade name:** 4,4’-DDD
  - **Part number:** PST-220, PST-220-25MG
  - **CAS Number:** 72-54-8
  - **EC number:** 200-783-0

- **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**

  - **GHS06 skull and crossbones**
    Acute Tox. 3  H301  Toxic if swallowed.

  - **GHS08 health hazard**
    Carc. 2  H351  Suspected of causing cancer.

  - **GHS09 environment**
    Aquatic Acute 1  H400  Very toxic to aquatic life.
    Aquatic Chronic 1  H410  Very toxic to aquatic life with long lasting effects.

- **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-determining components of labelling:

TDE

· Hazard statements

H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H351 Suspected of causing cancer.
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.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
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+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a POISON CENTER/doctor if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P405 Store locked up.
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
    72-54-8 TDE
· Identification number(s)
· EC number: 200-783-0
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.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- 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: Do not induce vomiting; call for medical help immediately.
- 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 extinguishing methods suitable to surrounding conditions.
- 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: Not required.
- 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.
- 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
  Thorough dedusting.
  Open and handle receptacle with care.
- Information about fire - and explosion protection: Keep respiratory protective device 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.
    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 eyes and skin.
  - 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
### Trade name: 4,4'-DDD

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>94-96 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>193 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Product is not flammable.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Density at 20 °C</td>
<td>1.38 g/cm³</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water at 20 °C</td>
<td>&lt; 0.00016 g/l</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
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<tr>
<td>Dynamic</td>
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</tr>
<tr>
<td>Kinematic</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Solids content</td>
<td>100.0 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 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
    Toxic if swallowed.
    Harmful in contact with skin.

· LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50 100 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50 1,200 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

72-54-8 TDE

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>LD50 1,200 mg/kg (rabbit)</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
    Suspected of causing cancer.
  · 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

· 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.
· Ecotoxicological 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 6  Acute Toxicity
  HP 7  Carcinogenic
  HP 14 Ecotoxic

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

14 Transport information

· UN-Number
  UN2811

· UN proper shipping name
  ADR  2811 TOXIC SOLID, ORGANIC, N.O.S. (1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane), ENVIRONMENTALLY HAZARDOUS
  IMDG, IATA  TOXIC SOLID, ORGANIC, N.O.S. (1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane)

· Transport hazard class(es)
  ADR
  · Class 6.1 Toxic substances.
  · Label 6.1
  IMDG, IATA
  · Class 6.1 Toxic substances.
  · Label 6.1
  Packing group
  ADR, IMDG, IATA  III

· Environmental hazards:
· Special marking (ADR):
· Special precautions for user
  Warning: Toxic substances.
· Danger code (Kemler):
  60
Trade name: 4,4'-DDD

- EMS Number: F-A,S-A
- Stowage Category: A
- Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable.
- Transport/Additional information:
  - ADR
  - 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
  - Transport category: 2
  - Tunnel restriction code: E
- 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 2811 TOXIC SOLID, ORGANIC, N.O.S. (1,1-DICHLORO-2,2-BIS(4-CHLOROPHENYL)ETHANE), 6.1, III, 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 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
  - 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
Trade name: 4,4'-DDD

- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Carc. 2: Carcinogenicity – Category 2
- 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.