SAFETY DATA SHEET

1. Identification

Product identifier Torbugesic Butorphanol Tartrate
Other means of identification
Synonyms Torbugesic® * Torbugesic® SA * Torbugesic injectable * Torbugesic-SA
Recommended use of the chemical and restrictions on use
Recommended use Veterinary product used as opioid analgesic
Restrictions on use Not for human use
Details of manufacturer or importer
Company Name (AU) Zoetis Australia Pty Ltd
ABN 94 156 476 425
Level 6, 5 Rider Boulevard
Rhodes NSW 2138 AUSTRALIA
Tel 1800 814 883
Fax (02) 8876 0444
Email productsupport.au@zoetis.com
Emergency Phone 1800 814 883 (all hours)
Police and Fire Brigade Dial 000
If ineffective Dial Poisons Information Centre (13 1126 from anywhere in Australia)

2. Hazard(s) identification

Classification of the hazardous chemical
Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2A
Reproductive toxicity Category 1B
Reproductive toxicity Effects on or via lactation
Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3
Hazardous to the aquatic environment, long-term hazard Category 3

Label elements, including precautionary statements
Hazard symbol(s)
Health hazard
Exclamation mark
Signal word Danger
Hazard statement(s) Causes serious eye irritation. May damage fertility or the unborn child. May cause harm to breast-fed children. Harmful to aquatic life with long lasting effects.
Precautionary statement(s)
Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapour. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. Use personal protective equipment as required. Avoid release to the environment.
Response IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage
Store locked up.
Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards which do not result in classification
None known.
Supplemental information
Opioid analgesic. Ingestion of this material may cause effects similar to those seen in clinical use including dry mouth, drowsiness, headache, dizziness, nausea, vomiting, weakness, anxiety, and dilated pupils. Cases of severe overdose may lead to respiratory depression, hypotension, coma, convulsions, cardiac arrhythmia, and tachycardia.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Identity of chemical ingredients</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration of ingredients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benzethonium chloride</td>
<td>121-54-0</td>
<td>&lt;5*</td>
</tr>
<tr>
<td></td>
<td>Butorphanol tartrate</td>
<td>58786-99-5</td>
<td>2 mg/ml, 10 mg/ml</td>
</tr>
<tr>
<td></td>
<td>Citric acid</td>
<td>77-92-9</td>
<td>&lt;5*</td>
</tr>
<tr>
<td></td>
<td>Sodium chloride</td>
<td>7647-14-5</td>
<td>&lt;5*</td>
</tr>
<tr>
<td></td>
<td>Water for injection</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

Composition comments
*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Description of necessary first aid measures

- **Inhalation**
  Move to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician or poison control centre immediately.

- **Skin contact**
  Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

- **Eye contact**
  Do not rub eyes. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Continue rinsing. Get medical attention immediately.

- **Ingestion**
  IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Personal protection for first-aid responders
IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Symptoms caused by exposure
opiod analgesic: Ingestion of this material may cause effects similar to those seen in clinical use including dry mouth, drowsiness, headache, dizziness, nausea, vomiting, weakness, anxiety, and dilated pupils. Cases of severe overdose may lead to respiratory depression, hypotension, coma, convulsions, cardiac arrhythmia, and tachycardia.

Medical attention and special treatment
opiod analgesic. Provide general supportive measures and treat symptomatically. Monitor respiratory, cardiac and central nervous system.

5. Fire-fighting measures

Extinguishing media

- **Suitable extinguishing media**
  Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

- **Unsuitable extinguishing media**
  Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for fire fighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Hazchem code
None.

General fire hazards
No unusual fire or explosion hazards noted.

Material name: Torbugesic Butorphanol Tartrate

SDS AUSTRALIA

646
Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep unnecessary personnel away.

For emergency responders

Ensure adequate ventilation. Ventilate the contaminated area. Do not breathe mist or vapour. Avoid contact with eyes, skin, and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions

Methods and materials for containment and cleaning up

Avoid discharge into drains, water courses or onto the ground.

Ensure adequate ventilation. Avoid release to the environment. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Clean surface thoroughly to remove residual contamination.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling

Wear appropriate personal protective equipment. Provide adequate ventilation. Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. Avoid accidental injection. Avoid prolonged exposure. Wash thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a well-ventilated place. @ 15-30°C (59-86°F). Protect from sunlight. Use care in handling/storage. Keep out of the reach of children.

8. Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid (CAS 77-92-9)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

No exposure standards allocated.

US ACGIH Threshold Limit Values: Skin designation

Sodium chloride (CAS 7647-14-5) Danger of cutaneous absorption

Control banding approach

Butorphanol tartrate - Zoetis OEB 4 (control exposure to the range of 1ug/m³ to <10ug/m³)

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Keep air contamination levels below the exposure limits or within the OEB range listed above in this section. General ventilation normally adequate. Provide eyewash station.

Individual protection measures, for example personal protective equipment (PPE)

Eye/face protection

If contact is likely, safety glasses with side shields are recommended.

Skin protection

Wear appropriate chemical resistant gloves. Impervious gloves.
Wear appropriate chemical resistant clothing. Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas.

Respiratory protection
No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment. If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range. Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter.

Thermal hazards
Not applicable.

Hygiene measures
Observe any medical surveillance requirements. When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

**Appearance**
- solution

**Physical state**
- Liquid.

**Form**
- Liquid.

**Colour**
- Clear, colorless

**Odour**
- Not available.

**Odour threshold**
- Not available.

**pH**
- Not available.

**Melting point/freezing point**
- Not available.

**Initial boiling point and boiling range**
- Not available.

**Flash point**
- Not available.

**Evaporation rate**
- Not available.

**Flammability (solid, gas)**
- Not applicable.

**Upper/lower flammability or explosive limits**
- Flammability limit - lower (%)
- Not available.
- Flammability limit - upper (%)
- Not available.
- Explosive limit - lower (%)
- Not available.
- Explosive limit – upper (%)
- Not available.

**Vapour pressure**
- Not available.

**Vapour density**
- Not available.

**Relative density**
- Not available.

**Solubility(ies)**
- Solubility (water)
- Not available.

**Partition coefficient (n-octanol/water)**
- Not available.

**Auto-ignition temperature**
- Not available.

**Decomposition temperature**
- Not available.

**Viscosity**
- Not available.

**Other physical and chemical parameters**
- Explosive properties
- Not explosive.
- Oxidising properties
- Not oxidising.

10. Stability and reactivity

**Reactivity**
The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability**
Material is stable under normal conditions.

**Possibility of hazardous reactions**
No dangerous reaction known under conditions of normal use.
Conditions to avoid
Contact with incompatible materials.

Incompatible materials
Strong oxidising agents.

Hazardous decomposition products
No hazardous decomposition products are known. May include products of carbon, nitrogen. May include hydrogen chloride.

11. Toxicological information

Information on possible routes of exposure

Inhalation
Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact
Causes mild skin irritation.

- Benzethonium chloride
  Severity: Mild - Severe
- Citric acid
  Species: Rabbit
  Severity: Mild
- Sodium chloride
  Species: Rabbit
  Severity: Mild

Eye contact
Causes serious eye irritation.

- Sodium chloride
  Species: Rabbit
  Severity: Moderate
- Benzethonium chloride
  Species: Rabbit
  Severity: Severe
- Citric acid
  Species: Rabbit
  Severity: Severe

Ingestion
May cause discomfort if swallowed.

Symptoms related to exposure
opioid analgesic: Ingestion of this material may cause effects similar to those seen in clinical use including dry mouth, drowsiness, headache, dizziness, nausea, vomiting, weakness, anxiety, and dilated pupils. Cases of severe overdose may lead to respiratory depression, hypotension, coma, convulsions, cardiac arrhythmia, and tachycardia.

Acute toxicity
Not acutely toxic

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torbugesic Butorphanol Tartrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg (Calculated ATE)</td>
</tr>
</tbody>
</table>

Components

<table>
<thead>
<tr>
<th>Benzethonium chloride (CAS 121-54-0)</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intravenous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>19 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>368 mg/kg</td>
</tr>
<tr>
<td>295 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcutaneous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>119 mg/kg</td>
</tr>
<tr>
<td>Chronic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 years Not carcinogenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 years Not carcinogenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material name: Torbugesic Butorphanol Tartrate

SDS AUSTRALIA

646

5 / 10
<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Butorphaol tartrate (CAS 58786-99-5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>315 mg/kg</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Mouse</td>
<td>60 mg/kg/day, 2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not carcinogenic</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>60 mg/kg/day, 2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not carcinogenic</td>
</tr>
<tr>
<td><strong>Citric acid (CAS 77-92-9)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
</tr>
<tr>
<td><strong>Sodium chloride (CAS 7647-14-5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Mouse</td>
<td>4000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>3000 mg/kg</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td></td>
<td>Prolonged skin contact may cause temporary irritation.</td>
</tr>
<tr>
<td><strong>Corrosivity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzethonium chloride</td>
<td></td>
<td>Severity: Mild - Severe</td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation</strong></td>
<td></td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td><strong>Eye contact</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td></td>
<td>Species: Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severity: Moderate</td>
</tr>
<tr>
<td>Benzethonium chloride</td>
<td></td>
<td>Species: Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severity: Severe</td>
</tr>
<tr>
<td>Citric acid</td>
<td></td>
<td>Species: Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severity: Severe</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitisation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory sensitisation</strong></td>
<td></td>
<td>Not a respiratory sensitizer.</td>
</tr>
<tr>
<td><strong>Skin sensitisation</strong></td>
<td></td>
<td>This product is not expected to cause skin sensitisation.</td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td></td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzethonium chloride</td>
<td>Ames (Salmonella)</td>
<td>Result: Negative</td>
</tr>
<tr>
<td>Butorphaol tartrate</td>
<td>Bacterial Mutagenicity (Ames)</td>
<td>Result: Negative</td>
</tr>
<tr>
<td></td>
<td>Species: Salmonella , E. coli</td>
<td></td>
</tr>
<tr>
<td>Benzethonium chloride</td>
<td>In vitro chromosomal aberration</td>
<td>Result: Negative</td>
</tr>
<tr>
<td></td>
<td>Sister Chromatid Exchange (SCE)</td>
<td>Result: Negative</td>
</tr>
<tr>
<td>Butorphaol tartrate</td>
<td>Unscheduled DNA Synthesis, (human fibroblast cells)</td>
<td>Result: Negative</td>
</tr>
<tr>
<td></td>
<td>Species: Human</td>
<td></td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td></td>
<td>Due to partial or complete lack of data the classification is not possible.</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td></td>
<td>May cause harm to breastfed babies. May damage fertility or the unborn child.</td>
</tr>
</tbody>
</table>
### Developmental effects

**Butorphanol tartrate**
- *Embryo / Fetal Development, Not Teratogenic (dose not specified)*
- *Result: NOAEL*
- *Species: Rat*
- *Organ: Oral*

### Reproductivity

**Butorphanol tartrate**
- 1 mg/kg/day Reproductive & Fertility, Fetal mortality
- *Result: LOAEL*
- *Species: Rat*
- *Organ: Subcutaneous*
- 2.5 mg/kg/day Reproductive & Fertility, Fertility
- *Result: NOAEL*
- *Species: Rat*
- *Organ: Oral*

### Specific target organ toxicity - single exposure

- Not classified.

### Specific target organ toxicity - repeated exposure

- Not classified.

### Aspiration hazard

- Not an aspiration hazard.

### Chronic effects

- Prolonged inhalation may be harmful.

### 12. Ecological information

#### Ecotoxicity

Harmful to aquatic life with long lasting effects. Avoid release to the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzethonium chloride (CAS 121-54-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>ErC50</td>
<td>Algae</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna (Water Flea)</td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Blaugill (Lepomis macrochirous)</td>
</tr>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Rainbow trout,donaldson trout (Oncorhynchus mykiss)</td>
</tr>
</tbody>
</table>

#### Persistence and degradability

- No data is available on the degradability of this product.

#### Biodegradability

**Percent Degradation (Aerobic Biodegradation)**

- Benzethonium chloride
  - 0 % OECD 301B
  - Test Duration: 29 days

#### Bioaccumulative potential

- No data available.

#### Mobility in soil

- No data available for this product.

#### Other adverse effects

- No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal methods**

Avoid release to the environment. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater. Dispose of contents/container in accordance with local/regional/national/international regulations.
Residual waste
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

ADG
Not regulated as dangerous goods.

RID
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not established.

15. Regulatory information

Safety, health and environmental regulations

National regulations
This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

APVMA No. 50128
Poison Schedule (Product) – Schedule 8
Australia Medicines & Poisons Schedule 7
Sodium chloride (CAS 7647-14-5)

Australia Medicines & Poisons Schedule 8
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 9
Poisons schedule number not allocated.

High Volume Industrial Chemicals (HVIC)
- Citric acid (CAS 77-92-9) 1000 - 9999 TONNES See the regulation for additional information.
- Sodium chloride (CAS 7647-14-5) 100000 - 999999 TONNES See the regulation for additional information.
- Water for injection (CAS 7732-18-5) 1000 - 9999 TONNES See the regulation for additional information.

Importation of Ozone Deleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)
Not listed.

National Pollutant Inventory (NPI) substance reporting list
Not listed.

Prohibited Carcinogenic Substances
Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)
Not listed.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)
Not listed.

Restricted Carcinogenic Substances
Not regulated.

International regulations
Stockholm Convention
Not applicable.

Rotterdam Convention
Not applicable.

Kyoto Protocol
Not applicable.

Montreal Protocol
Not applicable.

Basel Convention
Not applicable.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Industrial Chemicals (AICIS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*“Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
*“No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).
### 16. Other information

<table>
<thead>
<tr>
<th>Issue date</th>
<th>30-October-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>23-November-2021</td>
</tr>
<tr>
<td>Key abbreviations or acronyms used</td>
<td>ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).</td>
</tr>
<tr>
<td>Disclaimer</td>
<td>Zoetis Inc. believes that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. If data for a hazard are not included in this document there is no known information at this time. The information in the sheet was written based on the best knowledge and experience currently available.</td>
</tr>
<tr>
<td>Revision information</td>
<td>This document has undergone significant changes and should be reviewed in its entirety.</td>
</tr>
</tbody>
</table>