SAFETY DATA SHEET

1. Identification

Product identifier: Poulvac® ST

Other means of identification

Synonyms: POULVAC® * Poulvac ST * Salmonella Typhimurium Vaccine, Live Culture

Recommended use of the chemical and restrictions on use

Recommended use: Veterinary vaccine

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: australia.animalhealth@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: Not classified.
Environmental hazards: Not classified.

Label elements, including precautionary statements

Hazard symbol(s): None.
Signal word: None.
Hazard statement(s): The mixture does not meet the criteria for classification.
Precautionary statement(s)

Prevention: Observe good industrial hygiene practices.
Response: Wash hands after handling.
Storage: Store away from incompatible materials.
Disposal: Dispose of waste and residues in accordance with local authority requirements.

Other hazards which do not result in classification: None known.

Supplemental information: Direct contact with eyes may cause temporary irritation. Allergic reactions are possible.

3. Composition/information on ingredients

Mixture

<table>
<thead>
<tr>
<th>Identity of chemical ingredients</th>
<th>CAS number and other unique identifiers</th>
<th>Concentration of ingredients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose</td>
<td>57-50-1</td>
<td>1-5</td>
</tr>
<tr>
<td>Salmonella typhimurium</td>
<td>Not assigned</td>
<td>*</td>
</tr>
</tbody>
</table>

Composition comments: * Non-hazardous Ingredients
4. First-aid measures

Description of necessary first aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

**Eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Remove contact lenses, if present and easy to do.

**Ingestion**
Rinse mouth. Call a physician or poison control centre immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**Personal protection for first-aid responders**
For personal protection, see section 8 of the SDS. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Symptoms caused by exposure**
Dusts may irritate the respiratory tract, skin and eyes. Direct contact with eyes may cause temporary irritation. Exposed individuals may experience eye tearing, redness, and discomfort. Coughing. Mild skin irritation. Allergic reactions are possible. Signs and symptoms might include skin rash, itching, redness or swelling. Respiratory reactions may be characterized by rhinitis, sneezing, scratchy throat, oral mucosal edema, laryngeal mucosal edema, coughing, shortness of breath, wheezing, and chest pain. Asthma like reactions occur with acute exposures in sensitized patients.

**Medical attention and special treatment**
Treat symptomatically.

5. Fire-fighting measures

**Extinguishing media**
- **Suitable extinguishing media**
- **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.

**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**
  - Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

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

**Methods and materials for containment and cleaning up**
Large Spills: Stop the flow of material, if this is without risk. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

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**
Ensure adequate ventilation. Wear personal protective equipment. Avoid breathing dust, vapor or mist. Avoid contact with eyes, skin, and clothing. Observe good industrial hygiene practices. Wash thoroughly after handling. When using, do not eat, drink or smoke. Avoid release to the environment.

**Conditions for safe storage, including any incompatibilities**
Store out of direct sunlight in dark, dry conditions. @ 2 - 8°C (36 - 46°F). Do not freeze. Keep away from heat, sparks and open flame. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls and personal protection

**Control parameters**
Follow standard monitoring procedures.

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Australia, National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A) Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose (CAS 57-50-1)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inhalable dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Australia, OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment) Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose (CAS 57-50-1)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inspirable dust.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose (CAS 57-50-1)</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UK. EH40 Workplace Exposure Limits (WELs) Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose (CAS 57-50-1)</td>
<td>STEL</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Biological limit values**
No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**
Provide adequate ventilation. General ventilation normally adequate.

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

**Eye/face protection**
If contact is likely, safety glasses with side shields are recommended.

**Hand protection**
Wear protective gloves. Wear impervious gloves if skin contact is possible.

**Other**
Wear suitable protective 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. Respiratory protection should be provided in instances where exposure to dust, mists, aerosols or vapors are likely.

**Thermal hazards**
Not applicable.

**Hygiene measures**
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**
Powder for reconstitution.

**Physical state**
Solid.

**Form**
Powder.

**Colour**
Off-white - Light tan.

**Odour**
Odourless.

**Odour threshold**
Not available.

**pH**
6 - 8

**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 available.
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) Soluble
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. Sunlight. Excessive heat. Protect from freezing. Keep away from heat, sparks and open flame.
Incompatible materials Strong oxidising agents.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information
Information on possible routes of exposure
Inhalation Inhalation of dusts may cause respiratory irritation.
Skin contact Prolonged skin contact may cause temporary irritation.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion Health injuries are not known or expected under normal use.
Symptoms related to exposure Dusts may irritate the respiratory tract, skin and eyes. Direct contact with eyes may cause temporary irritation. Exposed individuals may experience eye tearing, redness, and discomfort. Coughing. Mild skin irritation. Allergic reactions are possible. Signs and symptoms might include skin rash, itching, redness or swelling. Respiratory reactions may be characterized by rhinitis, sneezing, scratchy throat, oral mucosal edema, laryngeal mucosal edema, coughing, shortness of breath, wheezing, and chest pain. Asthma like reactions occur with acute exposures in sensitized patients.
Acute toxicity Expected to be a low hazard for usual industrial or commercial handling by trained personnel.
<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose (CAS 57-50-1)</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>29.7 g/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>Serious eye damage/irritation</strong></td>
<td></td>
<td>Direct contact with eyes may cause temporary irritation.</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitisation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitisation</td>
<td>Due to partial or complete lack of data the classification is not possible. Allergic reactions are possible.</td>
<td></td>
</tr>
<tr>
<td>Skin sensitisation</td>
<td>Due to partial or complete lack of data the classification is not possible. Allergic reactions are possible.</td>
<td></td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
<td></td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td>Bacterial Mutagenicity (Ames)</td>
<td>Result: negative</td>
</tr>
<tr>
<td>Sucrose</td>
<td>Species: Salmonella</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>ACGIH Carcinogens</td>
<td>Sucrose (CAS 57-50-1)</td>
<td>A4 Not classifiable as a human carcinogen.</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td></td>
<td>This product is not expected to cause reproductive or developmental effects.</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - single exposure</strong></td>
<td></td>
<td>Not classified.</td>
</tr>
<tr>
<td><strong>Specific target organ toxicity - repeated exposure</strong></td>
<td></td>
<td>Not classified.</td>
</tr>
<tr>
<td><strong>Aspiration hazard</strong></td>
<td></td>
<td>Not an aspiration hazard.</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
<td>The antigens included in this product are non-infectious. All have been prepared from attenuated preparations of microorganisms.</td>
</tr>
</tbody>
</table>

### 12. Ecological information

| Ecotoxicity | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Avoid release to the environment. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |
| **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. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. 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 (see: Disposal instructions). |
| 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 applicable.

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. 80519
Poison Schedule (Product) – Schedule 0

High Volume Industrial Chemicals (HVIC)
Not listed.

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 Chemical Substances (AICS)</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>No</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>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "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

**Issue date**
04-May-2018

**Disclaimer**
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.

**Revision information**
Product and Company Identification: Synonyms
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties