SAFETY DATA SHEET

1. Identification

Product identifier: Poulvac CVI/HVT Vaccine (Serotypes 1&3, Live Marek’s Disease Virus vaccine)

Other means of identification:
- Synonyms: Poulvac® * Poulvac Mareks CVI+HVT * Poulvac Ovoline CVI + HVT * Marek's Disease Vaccine, Serotypes 1 and 3, live virus * Rispens strain-HVT

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
- Address: 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: 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: In the event of accidental injection, an allergic reaction may occur. Stored under liquid nitrogen. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

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>Dimethyl sulfoxide</td>
<td>67-68-5</td>
<td>5</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>1403-66-3</td>
<td>&lt;0.1*</td>
</tr>
<tr>
<td>Marek's Disease Chicken Herpes</td>
<td>Not assigned</td>
<td>*</td>
</tr>
</tbody>
</table>

Material name: Poulvac CVI/HVT Vaccine (Serotypes 1&3, Live Marek’s Disease Virus vaccine)
**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. Call a physician if symptoms develop or persist.

**Skin contact**
In the case of skin contact, immediately wash the skin with plenty of soap and water. In the event of accidental self injection or needle stick injury, wash the injury thoroughly with clean running water. Get medical attention immediately. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. Do not rub affected area.

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**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

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### Symptoms caused by exposure

Direct contact with eyes may cause temporary irritation. Exposure may cause temporary irritation, redness, or discomfort. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

### Medical attention and special treatment

Treat symptomatically.

## 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. The product is not flammable.

### 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. Keep people away from and upwind of spill/leak. 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

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. 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

Use care in handling/storage. Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapour. Avoid accidental injection. When using, do not eat, drink or smoke. Wash thoroughly after handling. Do not use in areas without adequate ventilation. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Avoid release to the environment. Observe good industrial hygiene practices.

Take all precautionary measures, including the use of gloves and face shield or goggles, to avoid potential hazards of handling liquid nitrogen and the possibility of explosion of glass vials as they are taken from the liquid-nitrogen refrigerator or canister or holding cane, or as they are placed in the thawing container. When removing the vial from the cane, hold palm of the gloved hand away from face and body.

Conditions for safe storage, including any incompatibilities

Keep refrigerated with a nitrogen blanket (atmosphere). Keep away from heat, sparks and open flame.

8. Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

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>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (CAS 67-68-5)</td>
<td>TWA</td>
<td>160 mg/m³</td>
</tr>
</tbody>
</table>

50 ppm

Biological limit values

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

Exposure guidelines

No exposure standards allocated.

Control banding approach

Gentamicin - Zoetis OEB 2 (control exposure to the range of 100ug/m³ to < 1000ug/m³)

Appropriate engineering controls

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. Ensure adequate ventilation, especially in confined areas. General ventilation normally adequate.

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

Eye/face protection

Wear tight-fitting goggles or face shield.

Skin protection

Hand protection

Wear protective gloves.

Other

Wear suitable protective clothing. Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

Respiratory protection

No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

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

Frozen Suspension

Physical state

Liquid.

Form

Liquid.

Colour

Not available.

Odour

Not available.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>0 °C (32 °F) estimated</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>100 °C (212 °F) estimated</td>
</tr>
<tr>
<td>Flash point</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit – upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other physical and chemical parameters</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not oxidising.</td>
</tr>
</tbody>
</table>

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: Heat, flames and sparks. Sunlight. Contact with incompatible materials.


Hazardous decomposition products: No hazardous decomposition products are known.

11. Toxicological information

Information on possible routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No adverse effects due to inhalation are expected.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Prolonged skin contact may cause temporary irritation. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Species: Rabbit, Severity: Mild</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Direct contact with eyes may cause temporary irritation.</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Species: Rabbit, Severity: Mild</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May cause discomfort if swallowed.</td>
</tr>
</tbody>
</table>
Symptoms related to exposure

Direct contact with eyes may cause temporary irritation. Exposure may cause temporary irritation, redness, or discomfort. In the event of accidental injection, an allergic reaction may occur. 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. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

Acute toxicity

Not acutely toxic

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (CAS 67-68-5)</td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Subchronic</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
</tr>
<tr>
<td>NOAEL</td>
<td>Rat</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation.

Corrosivity

Dimethyl sulfoxide

Result: Irritant
Severity: Mild

Serious eye damage/irritation

Direct contact with eyes may cause temporary irritation.

Eye contact

Dimethyl sulfoxide

Species: Rabbit
Severity: Mild

Respiratory or skin sensitisation

Not a respiratory sensitizer.

Skin sensitisation

This product is not expected to cause skin sensitisation.

Skin Sensitisation

Dimethyl sulfoxide

Species: Guinea Pig
Severity: Negative

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Mutagenicity

Dimethyl sulfoxide

In Vitro Bacterial Mutagenicity (Ames)
Result: Negative
Species: Salmonella

In Vitro Cytogenetics
Result: Negative
Species: Chinese Hamster Ovary (CHO) cells

In Vivo Cytogenetics
Result: positive
Species: Rat

In Vivo Micronucleus
Result: Negative
Species: Mouse
Mutagenicity
Dimethyl sulfoxide
In Vivo Sex-Linked Recessive Lethal Test
Result: Negative
Species: Drosophila

Carcinogenicity
Due to partial or complete lack of data the classification is not possible.

Reproductive toxicity
Based on available data, the classification criteria are not met. This product is not expected to cause reproductive or developmental effects.

Developmental effects
Dimethyl sulfoxide
1000 mg/kg/day Embryo / Fetal Development, Maternal toxicity
Result: NOAEL
Species: Rat
Organ: Oral

200 mg/kg/day Embryo / Fetal Development, Fetotoxicity
Result: LOAEL
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
None known.

Other information
The antigens included in this product are non-infectious. All have been prepared from attenuated preparations of microorganisms.

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.

Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (CAS 67-68-5)</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>Daphnia magna (Water Flea)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Lepomis macrochirus (Bluegill Sunfish)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oncorhynchus mykiss (rainbow trout)</td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></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.

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.
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

This Safety Data Sheet was prepared in accordance with the Australia Model Code of Practice for the preparation of safety data sheets for hazardous chemicals.

APVMA No. 53259

Australia Medicines & Poisons Appendix A
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix B
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix D
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix E
Dimethyl sulfoxide (CAS 67-68-5)

Australia Medicines & Poisons Appendix F
Dimethyl sulfoxide (CAS 67-68-5)

Australia Medicines & Poisons Appendix G
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix H
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix I
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix J
Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix K
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 10
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 2
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 3
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 4
Dimethyl sulfoxide (CAS 67-68-5)

Australia Medicines & Poisons Schedule 5
Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 6
Dimethyl sulfoxide (CAS 67-68-5)

Australia Medicines & Poisons Schedule 7
Poisons schedule number not allocated.

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

Material name: Poulvac CVI/HVT Vaccine (Serotypes 1&3, Live Marek’s Disease Virus vaccine)
Australia Medicines & Poisons Schedule 9
Poisons schedule number not allocated.

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.

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 (NDSL)</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>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>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</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       15-October-2021
Further information
None known.

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
This document has undergone significant changes and should be reviewed in its entirety.