1. Identification
Product identifier: Poulvac Marek CVI + HVT
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: Veterinary vaccine
Recommended restrictions: Not for human use
Manufacturer/Importer/Supplier/Distributor information:
- Manufacturer: Zoetis Inc.
  10 Sylvan Way
  Parsippany, New Jersey 07054 (USA)
- Rocky Mountain Poison and Drug Center: 1-866-531-8896
- Product Support/Technical Services: 1-800-366-5288
- Emergency telephone numbers: CHEMTREC (24 hours): 1-800-424-9300
- Contact E-Mail: VMIPSrecords@zoetis.com
- Company Name (EU): Zoetis Belgium S.A.
  Mercuriusstraat 20
  1930 Zaventem
  Belgium
- Emergency telephone number: International CHEMTREC (24 hours): +1-703-527-3887
- Contact E-Mail: VMIPSrecords@zoetis.com

2. Hazard(s) identification
Physical hazards: Not classified.
Health hazards: Not classified.
Environmental hazards: Not classified.
OSHA defined hazards: Not classified.
Label elements:
- Hazard symbol: None.
- Signal word: None.
- Hazard statement: The mixture does not meet the criteria for classification.
Precautionary statement:
- 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.
Hazard(s) not otherwise classified (HNOC): 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
Mixtures:
- Material name: Poulvac Marek CVI + HVT
### Chemical name

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td></td>
<td>67-68-5</td>
<td>5</td>
</tr>
<tr>
<td>Gentamicin</td>
<td></td>
<td>1403-66-3</td>
<td>&lt;0.1*</td>
</tr>
<tr>
<td>Marek's Disease Chicken Herpes Virus</td>
<td></td>
<td>Not Assigned</td>
<td>*</td>
</tr>
<tr>
<td>Marek's Disease Turkey Herpes Virus</td>
<td></td>
<td>Not Assigned</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

#### Inhalation

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

#### Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. Do not rub affected area. Call a physician or poison control center immediately.

#### 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. Get medical attention if symptoms occur.

#### Most important symptoms/effects, acute and delayed

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.

#### Indication of immediate medical attention and special treatment needed

Treat symptomatically.

### General information

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

### 5. Fire-fighting measures

#### 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 firefighters

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.

#### Specific methods

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

#### General fire hazards

No unusual fire or explosion hazards noted. The product is not flammable.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

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. For personal protection, see section 8 of the SDS. Local authorities should be advised if significant spillages cannot be contained.

#### Methods and materials for containment and cleaning up

Ensure adequate ventilation.

**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. 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.

#### Environmental precautions

Avoid discharge into drains, water courses or onto the ground.
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 vapor. 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. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

**Occupational exposure limits**

**US. Workplace Environmental Exposure Level (WEEL) Guides**

<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>250 ppm</td>
</tr>
</tbody>
</table>

**Biological limit values**

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

**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, such as personal protective equipment**

**Eye/face protection**

Wear tight-fitting goggles or face shield.

**Skin protection**

Wear protective gloves.

**Hand protection**

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.

**General hygiene considerations**

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.

**Color**

Not available.

**Odor**

Not available.

**Odor threshold**

Not available.

**pH**

Not available.

**Melting point/freezing point**

32 °F (0 °C) estimated

**Initial boiling point and boiling range**

212 °F (100 °C) estimated
### Flash point
Non-flammable

### 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.

### Vapor pressure
Not available.

### Vapor 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 information
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

### 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.

#### Incompatible materials

#### Hazardous decomposition products
No hazardous decomposition products are known.

### 11. Toxicological information

#### Information on likely routes of exposure

##### Inhalation
No adverse effects due to inhalation are expected.

##### Skin contact
- Dimethyl sulfoxide
  - Species: Rabbit
  - Severity: Mild
  Prolonged skin contact may cause temporary irritation. Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

##### Eye contact
- Dimethyl sulfoxide
  - Species: Rabbit
  - Severity: Mild
  Direct contact with eyes may cause temporary irritation.

##### Ingestion
Expected to be a low ingestion hazard.

##### Symptoms related to the physical, chemical and toxicological characteristics
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.

#### Information on toxicological effects

##### Acute toxicity
<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimethyl sulfoxide (CAS 67-68-5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rat</td>
<td>40000 mg/kg</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/m³</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
<td>7920 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>14500 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.9 ml/kg</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOAEL</td>
<td>Rat</td>
<td>2.783 mg/L, 13 weeks Respiratory system</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>Prolonged skin contact may cause temporary irritation.</td>
<td></td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>Direct contact with eyes may cause temporary irritation.</td>
<td></td>
</tr>
<tr>
<td><strong>Eye Contact</strong></td>
<td>Dimethyl sulfoxide</td>
<td>Species: Rabbit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severity: Mild</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory sensitization</strong></td>
<td>Not a respiratory sensitizer.</td>
<td></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
<td>This product is not expected to cause skin sensitization.</td>
<td></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
<td>Dimethyl sulfoxide</td>
<td>Species: Guinea Pig</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severity: Negative</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>In Vitro Bacterial Mutagenicity (Ames)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Salmonella</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Vitro Cytogenetics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Chinese Hamster Ovary (CHO) cells</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Vivo Cytogenetics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Positive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Vivo Micronucleus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In Vivo Sex-Linked Recessive Lethal Test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Drosophila</td>
<td></td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.</td>
<td></td>
</tr>
<tr>
<td><strong>IARC Monographs. Overall Evaluation of Carcinogenicity</strong></td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td><strong>US. National Toxicology Program (NTP) Report on Carcinogens</strong></td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>
Reproductive toxicity

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. Health injuries are not known or expected under normal use.

Further 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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Daphnia Magna (Water Flea)</td>
<td>24600 mg/L, Hours</td>
</tr>
<tr>
<td>EC50</td>
<td>Lepomis macrochirus (Bluegill Sunfish)</td>
<td>&gt; 40000 mg/L, 96 Hours</td>
</tr>
<tr>
<td>LC50</td>
<td>Oncorhynchus mykiss (Rainbow Trout)</td>
<td>33000 - 37000 mg/L, 96 Hours</td>
</tr>
<tr>
<td>Aquatic</td>
<td>Rainbow trout,donaldson trout</td>
<td>33000 - 37000 mg/l, 96 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>(Oncorhynchus mykiss)</td>
<td></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 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 instructions
Refer to product label and/or product insert for specific instructions. Dispose in accordance with all applicable regulations. Avoid release to the environment. Contract with a disposal operator licensed by the Law on Disposal and Cleaning.

Local disposal regulations
Dispose in accordance with all applicable regulations.

Hazardous waste code
None known.

Waste from residues / unused products
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

DOT
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

15. Regulatory information

US federal regulations
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical
No
SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.
Safe Drinking Water Act (SDWA)
FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace
Dimethyl sulfoxide (CAS 67-68-5) Low priority

US state regulations
US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.
US. Massachusetts RTK - Substance List
Not regulated.
US. New Jersey Worker and Community Right-to-Know Act
Dimethyl sulfoxide (CAS 67-68-5)
US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.
US. Rhode Island RTK
Not regulated.
US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.
### 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>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, including date of preparation or last revision

- **Issue date**: 09-10-2013
- **Revision date**: 10-07-2016
- **Version #**: 03

**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.