Section 1 - Identification of the Substance/Mixture and Supplier

Zoetis Australia Pty Ltd
ABN 94 156 476 425
Level 6, 5 Rider Blvd
Rhodes NSW 2138 AUSTRALIA
Tel: 1800 814 883
Fax: (02) 8876 0444
Email: ProductSupport.au@zoetis.com

Chemical nature: Freeze dried live viruses.

Trade Name: Ultravac BEF Vaccine
Other Names: Ultravac BEF

APVMA Approval number: 41461

Recommended Use: For the prevention of bovine ephemeral fever by vaccination in cattle.
Restrictions on use For veterinary use only.

Emergency Phone: 1800 814 883 (all hours)
Creation Date: March, 2020
This version issued: March, 2020 and is valid for 5 years from this date.

Section 2 - Hazards Identification

Statement of Hazardous Nature
This product is classified as: Not classified as hazardous according to the criteria of SWA.
Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

Risk Phrases: Not Hazardous - No criteria found.
Safety Phrases: Not Hazardous - No criteria found.
SUSMP Classification: S4
ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.
UN Number: None allocated

GHS Classification:
GHS Label Elements: NONE. Not hazardous.
Signal word: NONE. Not hazardous.

HAZARD STATEMENT: NONE. Not hazardous.

PREVENTION
P102: Keep out of reach of children.
P235: Keep cool, preferably between 2 and 8°C, but do not freeze.
P262: Do not get in eyes, on skin, or on clothing.
P281: Use personal protective equipment as required.

RESPONSE
P353: Rinse skin or shower with water.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P370+P378: Not combustible. Use extinguishing media suited to burning materials.

STORAGE
P402+P404: Store in a dry place. Store in a closed container.

DISPOSAL
P501: Discarded vials/containers should immediately be placed in a designated and appropriately labelled ‘biologics’ container. If this option is not available, bury the vial/container below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and roots.

Other/supplementary hazards. None known.

Emergency Overview

Physical Description & colour: Freeze dried powder and sterile water in separate vials.
Odour: No data.
Major Health Hazards: no significant risk factors have been found for this product.
Section 3 - Composition/Information On Ingredients

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>Conc./mL</th>
<th>TWA (mg/m$^3$)</th>
<th>STEL (mg/m$^3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuated live Bovine Ephemeral Fever virus</td>
<td>not set</td>
<td>not set</td>
<td>not set</td>
<td>not set</td>
</tr>
<tr>
<td>Other non hazardous ingredients</td>
<td>secret</td>
<td>to 100%</td>
<td>not set</td>
<td>not set</td>
</tr>
</tbody>
</table>

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equaled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:
You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS or product label with you when you call.

Self Injection: Accidental self injection may lead to an inflammatory response. Medical advice should be sought on the management of deep injections, particularly those near a joint or associated with bruising. If possible the application of gentle squeezing pressure with absorbent material (e.g. facial tissues) at the injection site will swab up unabsorbed vaccine. Strong squeezing of the site should be avoided. The damaged area should be thoroughly cleansed and a topical antiseptic applied.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Skin Contact: Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.
Eye Contact: No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.
Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
Only small quantities of decomposition products are expected from this products at temperatures normally achieved in a fire. This will only occur after heating to dryness.
Fire decomposition products from this product are likely to be irritating if inhaled.
Extinguishing Media: Not Combustible. Use extinguishing media suited to burning materials.
Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.
Flash point: Does not burn.
Upper Flammability Limit: Does not burn.
Lower Flammability Limit: Does not burn.
Autoignition temperature: Not applicable - does not burn.
Flammability Class: Does not burn.

Section 6 - Accidental Release Measures

Accidental release: This product is sold in small packages, and the accidental release from one of these is not usually a cause for concern. For minor spills, refer to product label for specific instructions. No special protective clothing is normally necessary because of this product. However it is good practice to wear latex gloves when handling vaccines. In the event of a major spill, prevent spillage from entering drains or water courses and call emergency services.

Section 7 - Handling And Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to
persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** This product is a scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Refrigerate, preferably between 2 and 8°C, but do not freeze. Protect from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

**Section 8 - Exposure Controls And Personal Protection**

This SDS describes personal protective measures relating to long term industrial and manufacturing exposure, and emergency situations, such as accidents and spills. See product label for personal protective measures during normal on farm usage.

The following Australian Standards will provide general advice regarding safety clothing and equipment:

- Respiratory equipment: AS/NZS 1715
- Protective Gloves: AS 2161
- Occupational Protective Clothing: AS/NZS 4501
- Industrial Eye Protection: AS1336 and AS/NZS 1337
- Occupational Protective Footwear: AS/NZS2210.

**SWA Exposure Limits**

<table>
<thead>
<tr>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
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<tbody>
<tr>
<td>Exposure limits have not been established by SWA for any of the significant ingredients in this product.</td>
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</table>

**Ventilation:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

**Eye Protection:** Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

**Skin Protection:** The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when skin contact is likely.

**Protective Material Types:** We suggest that protective clothing be made from the following: rubber, PVC.

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

**Section 9 - Physical And Chemical Properties:**

- **Physical Description & colour:** Freeze dried powder and sterile water in separate vials.
- **Odour:** No data.
- **Boiling Point:** Virus powder: not applicable.
- **Freezing/Melting Point:** Virus powder decomposes.
- **Vapour Pressure:** Virus powder: negligible.
- **Vapour Density:** No data.
- **Specific Gravity:** No data.
- **Water Solubility:** Forms suspensions in water.
- **pH:** No data. Expected to be neutral.
- **Volatility:** No data.
- **Odour Threshold:** No data.
- **Evaporation Rate:** No data.
- **Coeff Oil/water distribution:** No data
- **Autoignition temp:** Not applicable - does not burn.

**Section 10 - Stability And Reactivity**

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** Refrigerate, preferably between 2 and 8°C, but do not freeze. Protect from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatibilities:** No particular Incompatibilities.

**Fire Decomposition:** No specific data. Based on composition of proteins and fats, the following might be expected: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** This product will not undergo polymerisation reactions.
Section 11 - Toxicological Information

Symptoms caused by Exposure

General Information: No data.
Routes of exposure: No data.
Symptoms of exposure: No data.

Inhalation:
Short term exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
Long Term exposure: No data for health effects associated with long term inhalation.

Skin Contact:
Short term exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.
Long Term exposure: No data for health effects associated with long term skin exposure.

Eye Contact:
Short term exposure: This product may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort which should disappear once product is removed.
Long Term exposure: No data for health effects associated with long term eye exposure.

Ingestion:
Short term exposure: Significant oral exposure is considered to be unlikely. However, this product may be mildly irritating to mucous membranes but is unlikely to cause anything more than mild transient discomfort.
Long Term exposure: No data for health effects associated with long term ingestion.

Specific Target Organ Toxicity (STOT) – single exposure: No data.
Specific Target Organ Toxicity (STOT) – repeated exposure: No data.

Aspiration Hazard: No data.

Early Onset Symptoms Related to Exposure: No data.
Delayed Health Effects from Exposure: No data.
Exposure Levels and Health Effects: No data.
Interactive Effects: No data.

Classification of Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Risk Phrases</th>
</tr>
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<tbody>
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</table>

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

Carcinogen Status:
SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Insufficient data to be sure of status. Expected to not be an environmental hazard.

Toxicity information: No data. Expected to not be toxic.
Persistence and degradability: No data. Expected to be readily degraded.
Bioaccumulative potential: No data. Expected to not be bioaccumulative.
Mobility in soil: No data.
Other adverse effects: No data.

Section 13 - Disposal Considerations

Disposal: Discarded vials/containers should immediately be placed in a designated and appropriately labelled ‘biologics’ container. If this option is not available, bury the vial/container below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and roots.
Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Special precaution for user: None known.

Additional Information: None known.

Environmental Hazard: None known.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Data Sources: The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

Acronyms:

ADG Code    Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS        Australian Inventory of Chemical Substances
SWA         Safe Work Australia, formerly ASCC and NOHSC
CAS number  Chemical Abstracts Service Registry Number
IARC        International Agency for Research on Cancer
NOS         Not otherwise specified
NTP         National Toxicology Program (USA)
R-Phrase     Risk Phrase
SUSMP       Standard for the Uniform Scheduling of Medicines & Poisons
UN Number   United Nations Number

This version issued: 30 March 2020 and is valid for 5 years from this date.

Supersedes: Version issued 8 December 2014

Revision History:

<table>
<thead>
<tr>
<th>Date of Revision</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 March 2020</td>
<td>Planned revision</td>
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Contact Points:

<table>
<thead>
<tr>
<th>Zoetis</th>
<th>1800 814 883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police and Fire Brigade:</td>
<td>Dial 000</td>
</tr>
</tbody>
</table>

If ineffective: Dial Poisons Information Centre (13 1126 from anywhere in Australia)

THIS SDS SUMMARISES OUR CURRENT AND BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION ABOUT THE PRODUCT DETAILED IN THIS SDS, AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE FOR THE RECOMMENDED USE. EACH USER OF THE PRODUCT MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THEIR OWN WORKPLACE. IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT ZOETIS.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (May 2018)

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Originally prepared by Kilford & Kilford Pty Ltd

End of Safety Data Sheet

SAFETY DATA SHEET

Issued by: Zoetis Australia Pty Ltd       Phone: 1800 814 883

Poisons Information Centre: 13 1126 from anywhere in Australia