

# SAFETY DATA SHEET



Revision date: 14-Jan-2014

Version: 2.0

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## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

### Product Identifier

**Material Name:** Rabies Vaccine, Killed Virus

**Trade Name:** DEFENSOR® 1; DEFENSOR® 3  
**Chemical Family:** Mixture

### Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

**Intended Use:** Veterinary Vaccine

### Details of the Supplier of the Safety Data Sheet

Zoetis Inc.  
100 Campus Drive, P.O. Box 651  
Florham Park, New Jersey 07932 (USA)  
Rocky Mountain Poison Control Center Phone: 1-866-531-8896  
Product Support/Technical Services Phone: 1-800-366-5288

Zoetis Belgium S.A.  
Mercuriusstraat 20  
1930 Zaventem  
Belgium

**Emergency telephone number:**  
**CHEMTREC (24 hours): 1-800-424-9300**  
**Contact E-Mail:** VMIPSrecords@zoetis.com

**Emergency telephone number:**  
**International CHEMTREC (24 hours): +1-703-527-3887**

## 2. HAZARDS IDENTIFICATION

**Appearance:** Liquid solution in multiple-dose vials

### Classification of the Substance or Mixture

**GHS - Classification** Not classified as hazardous

### EU Classification:

EU Indication of danger: Not classified

### Label Elements

**Signal Word:** Not Classified

**Hazard Statements:** Not classified in accordance with international standards for workplace safety.

### Other Hazards

#### Short Term:

In the event of accidental injection, an allergic reaction may occur. If an allergic reaction occurs, the worker should be removed to the nearest emergency room and the appropriate therapy instituted.

#### Australian Hazard Classification (NOHSC):

Non-Hazardous Substance. Non-Dangerous Goods.

### Note:

This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the product or its ingredients regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Hazardous**

| Ingredient               | CAS Number | EU EINECS/ELINCS List | EU Classification                 | GHS Classification  | %  |
|--------------------------|------------|-----------------------|-----------------------------------|---|----|
| Merthiolate (as mercury) | 54-64-8    | 200-210-4             | T+; R26/27/28<br>R33<br>N; R50/53 | Acute Tox. 2 (H330)<br>Acute Tox. 2 (H310)<br>Acute Tox. 1 (H300)<br>STOT RE 2 (H373)<br>Aq. Acute 1 (H400)<br>Aq. Chronic 1 (H410) | ## |
| Gentamicin               | 1403-66-3  | 215-765-8             | Not Listed                        | Not Listed  | ## |

| Ingredient             | CAS Number     | EU EINECS/ELINCS List | EU Classification | GHS Classification | % |
|------------------------|----------------|-----------------------|-------------------|--------------------|---|
| Aluminum hydroxide gel | 21645-51-2     | 244-492-7             | Not Listed        | Not Listed         | * |
| Rabies virus, killed   | NOT APPLICABLE | Not Listed            | Not Listed        | Not Listed         | * |

**Additional Information:**

\* Proprietary  
## Trace  
Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety.

For the full text of the R phrases and CLP/GHS abbreviations mentioned in this Section, see Section 16

### 4. FIRST AID MEASURES

**Description of First Aid Measures**

**Eye Contact:** Immediately flush eyes with water for at least 15 minutes. If irritation occurs or persists, get medical attention.

**Skin Contact:** Wash skin with soap and water. If irritation occurs or persists, get medical attention.

**Ingestion:** Get medical attention. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. Get medical attention immediately.

**Most Important Symptoms and Effects, Both Acute and Delayed**

**Symptoms and Effects of Exposure:** For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

**Medical Conditions Aggravated by Exposure:** None known

**Indication of the Immediate Medical Attention and Special Treatment Needed**

**Notes to Physician:** None

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### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media:** Extinguish fires with CO<sub>2</sub>, extinguishing powder, foam, or water.

**Special Hazards Arising from the Substance or Mixture**

**Hazardous Combustion Products:** Formation of toxic gases is possible during heating or fire.

**Fire / Explosion Hazards:** Fine particles (such as dust and mists) may fuel fires/explosions.

**Advice for Fire-Fighters**

During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus. Dike and collect water used to fight fire.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

**Environmental Precautions**

Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

**Methods and Material for Containment and Cleaning Up**

**Measures for Cleaning / Collecting:** Contain the source of spill if it is safe to do so. Collect spill with absorbent material. Clean spill area thoroughly.

**Additional Consideration for Large Spills:** Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

### 7. HANDLING AND STORAGE

**Precautions for Safe Handling**

Keep away from heat, sparks, and flame. Use with adequate ventilation. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Prevent environmental releases. Use appropriate personal protective equipment. Avoid accidental injection.

**Conditions for Safe Storage, Including any Incompatibilities**

**Storage Conditions:** Store under refrigeration in closed container.

**Storage Temperature:** 2-7°C

**Incompatible Materials:** This material can be denatured or inactivated by a variety of organic solvents, salts or heavy metals.

**Specific end use(s):** No data available

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Control Parameters**

Refer to available public information for specific member state Occupational Exposure Limits.

**Aluminum hydroxide gel**

|  |                       |
|--|-----------------------|
| <b>ACGIH Threshold Limit Value (TWA)</b> | 1 mg/m <sup>3</sup>   |
| <b>Austria OEL - MAKs</b>                | 5 mg/m <sup>3</sup>   |
| <b>Germany (DFG) - MAK</b>               | 4 mg/m <sup>3</sup>   |
|  | 1.5 mg/m <sup>3</sup> |
| <b>Latvia OEL - TWA</b>                  | 6 mg/m <sup>3</sup>   |

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

|                       |                       |
|-----------------------|-----------------------|
| Lithuania OEL - TWA   | 6 mg/m <sup>3</sup>   |
| Poland OEL - TWA      | 2.5 mg/m <sup>3</sup> |
|                       | 1.2 mg/m <sup>3</sup> |
| Slovakia OEL - TWA    | 1.5 mg/m <sup>3</sup> |
| Switzerland OEL -TWAs | 3 mg/m <sup>3</sup>   |

#### Gentamicin

|                    |                       |
|--------------------|-----------------------|
| Bulgaria OEL - TWA | 0.1 mg/m <sup>3</sup> |
|--------------------|-----------------------|

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

#### Gentamicin

|            |   |
|------------|---|
| Zoetis OEB | OEB 2 (control exposure to the range of 100ug/m <sup>3</sup> to < 1000ug/m <sup>3</sup> ) |
|------------|---|

#### Exposure Controls

**Engineering Controls:** Engineering controls should be used as the primary means to control exposures. Exposure monitoring may be necessary to determine requirements.

**Personal Protective Equipment:** Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

**Hands:** Wear impervious gloves if skin contact is possible.

**Eyes:** Safety glasses or goggles

**Skin:** Use protective clothing (uniforms, lab coats, disposable coveralls, etc.) in both production and laboratory areas.

**Respiratory protection:** 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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |  |                          |                    |
|---|--|--------------------------|--------------------|
| <b>Physical State:</b>                                      | Liquid solution in multiple-dose vials | <b>Color:</b>            | No data available. |
| <b>Odor:</b>  | No data available.                     | <b>Odor Threshold:</b>   | No data available. |
| <b>Molecular Formula:</b>                                   | Mixture                                | <b>Molecular Weight:</b> | Mixture            |
| <b>Solvent Solubility:</b>                                  | No data available                      |                          |                    |
| <b>Water Solubility:</b>                                    | No data available                      |                          |                    |
| <b>Solubility:</b>  | Soluble: Water (based on components)   |                          |                    |
| <b>pH:</b>  | 7.0 +/- 1.5                            |                          |                    |
| <b>Melting/Freezing Point (°C):</b>                         | No data available                      |                          |                    |
| <b>Boiling Point (°C):</b>                                  | >100                                   |                          |                    |
| <b>Partition Coefficient: (Method, pH, Endpoint, Value)</b> |  |                          |                    |
| No data available   |  |                          |                    |
| <b>Decomposition Temperature (°C):</b>                      | No data available.                     |                          |                    |
| <b>Evaporation Rate (Gram/s):</b>                           | No data available                      |                          |                    |
| <b>Vapor Pressure (kPa):</b>                                | Expected to be negligible              |                          |                    |
| <b>Vapor Density (g/ml):</b>                                | No data available                      |                          |                    |
| <b>Relative Density:</b>                                    | No data available                      |                          |                    |
| <b>Specific Gravity:</b>                                    | 1.0 +/-0.2                             |                          |                    |
| <b>Viscosity:</b>   | No data available                      |                          |                    |

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### Flammability:

|  |                   |
|--|-------------------|
| Autoignition Temperature (Solid) (°C):       | No data available |
| Flammability (Solids):                       | No data available |
| Flash Point (Liquid) (°C):                   | No data available |
| Upper Explosive Limits (Liquid) (% by Vol.): | No data available |
| Lower Explosive Limits (Liquid) (% by Vol.): | No data available |

### Polymerization:

Will not occur

## 10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable

### Possibility of Hazardous Reactions

Oxidizing Properties: No data available

Conditions to Avoid: Store at 2-7°C. Prolonged exposure to higher temperatures may adversely affect potency. Do not freeze.

Incompatible Materials: This material can be denatured or inactivated by a variety of organic solvents, salts or heavy metals.

Hazardous Decomposition Products: None expected under normal conditions.

## 11. TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

**General Information:** Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of the individual ingredients and the formulation. The antigens included in this product are non-infectious. All have been prepared from killed or inactivated preparations of microorganisms.

### Acute Toxicity: (Species, Route, End Point, Dose)

#### Merthiolate (as mercury)

Rat Oral LD50 75 mg/kg

Rat Subcutaneous LD50 98mg/kg

#### Aluminum hydroxide gel

Rat Para-periosteal LD50 150 mg/kg

#### Gentamicin

Rat Oral LD50 6600 mg/kg

Rat Subcutaneous LD50 710mg/kg

Mouse IM LD50 167 mg/kg

Rat IM LD50 463 mg/kg

### Irritation / Sensitization: (Study Type, Species, Severity)

#### Merthiolate (as mercury)

Eye Irritation Rabbit Mild

#### Gentamicin

Eye Irritation Rabbit Non-irritating

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### 11. TOXICOLOGICAL INFORMATION

#### Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

##### **Gentamicin**

Embryo / Fetal Development    Rat    Intramuscular    75 mg/kg/day    LOAEL    Developmental toxicity

Carcinogen Status:                      None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA.

### 12. ECOLOGICAL INFORMATION

**Environmental Overview:**                      The environmental characteristics of this material have not been fully evaluated. Releases to the environment should be avoided.

**Toxicity:**    No data available

**Persistence and Degradability:**                      No data available

**Bio-accumulative Potential:**                      No data available

**Mobility in Soil:**                                      No data available

### 13. DISPOSAL CONSIDERATIONS

**Waste Treatment Methods:**                      Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. 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. This product contains trace quantities of mercury and may qualify as a RCRA Hazardous Waste. Status should be confirmed using the EPA Toxicity Characteristic Leaching Procedure (TCLP).

### 14. TRANSPORT INFORMATION

The following refers to all modes of transportation unless specified below.

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.

### 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

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### 15. REGULATORY INFORMATION

#### Canada - WHMIS: Classifications

##### **WHMIS hazard class:**

Non-controlled

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

#### **Aluminum hydroxide gel**

|  |            |
|--|------------|
| <b>CERCLA/SARA 313 Emission reporting</b>          | Not Listed |
| <b>California Proposition 65</b>                   | Not Listed |
| <b>Inventory - United States TSCA - Sect. 8(b)</b> | Present    |
| <b>Australia (AICS):</b>                           | Present    |
| <b>EU EINECS/ELINCS List</b>                       | 244-492-7  |

#### **Rabies virus, killed**

|   |            |
|---|------------|
| <b>CERCLA/SARA 313 Emission reporting</b> | Not Listed |
| <b>California Proposition 65</b>          | Not Listed |
| <b>EU EINECS/ELINCS List</b>              | Not Listed |

#### **Merthiolate (as mercury)**

|  |            |
|--|------------|
| <b>CERCLA/SARA 313 Emission reporting</b>          | Not Listed |
| <b>California Proposition 65</b>                   | Not Listed |
| <b>Inventory - United States TSCA - Sect. 8(b)</b> | Present    |
| <b>Australia (AICS):</b>                           | Present    |
| <b>EU EINECS/ELINCS List</b>                       | 200-210-4  |

#### **Gentamicin**

|   |            |
|---|------------|
| <b>CERCLA/SARA 313 Emission reporting</b>                         | Not Listed |
| <b>California Proposition 65</b>                                  | Not Listed |
| <b>Australia (AICS):</b>  | Present    |
| <b>Standard for the Uniform Scheduling for Drugs and Poisons:</b> | Schedule 4 |
| <b>EU EINECS/ELINCS List</b>                                      | 215-765-8  |

### 16. OTHER INFORMATION

#### Text of R phrases and GHS Classification abbreviations mentioned in Section 3

H330 - Fatal if inhaled  
H310 - Fatal in contact with skin  
H300 - Fatal if swallowed  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects

R33 - Danger of cumulative effects.

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R26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

**Reasons for Revision:** Updated Section 1 - Identification of the Substance/Preparation and the Company/Undertaking. Updated Section 2 - Hazard Identification. Updated Section 3 - Composition / Information on Ingredients. Updated Section 4 - First Aid Measures. Updated Section 5 - Fire Fighting Measures. Updated Section 7 - Handling and Storage. Updated Section 8 - Exposure Controls / Personal Protection. Updated Section 11 - Toxicology Information.

**Prepared by:** Toxicology and Hazard Communication  
Zoetis Global Risk Management

Zoetis Inc. believes that the information contained in this Material 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.

**End of Safety Data Sheet**