SAFETY DATA SHEET

1. Identification

Product identifier Barricade® 'S' Cattle Dip and Spray

Other means of identification

Synonyms Barricade®

Recommended use of the chemical and restrictions on use

Recommended use Veterinary antiparasitic / insecticide

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 Flammable liquids Category 3

Health hazards Acute toxicity, oral Category 3

Acute toxicity, dermal Category 3

Acute toxicity, inhalation Category 2

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 1

Sensitization, skin Category 1

Specific target organ toxicity following single exposure Category 2 (nervous system)

Specific target organ toxicity following repeated exposure Category 2 (nervous system, Adrenal gland, digestive organs)

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

Label elements, including precautionary statements

Hazard symbol(s)

Flame Skull and crossbones Corrosion Health hazard Environment

Signal word Danger
Hazard statement(s) Flammable liquid and vapour. Toxic if swallowed. Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Fatal if inhaled. May cause damage to organs (nervous system). May cause damage to organs (nervous system, Adrenal gland, digestive organs) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe vapour. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing. Wear protective gloves/eye protection/face protection. Wear respiratory protection. Response Get medical advice/attention if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison centre/doctor. If skin irritation or rash occurs: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician. In case of fire: Use appropriate media for extinction. Collect spillage. Storage Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Disposal Dispose of contents/container in accordance with local/regional/national/international regulations. Other hazards which do not result in classification None known. Supplemental information This product contains organophosphate and pyrethroid insecticides. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. May cause lung damage if swallowed. Vomiting of petroleum-containing liquids can result in chemical pneumonitis.

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>Liquid hydrocarbon</td>
<td>Proprietary</td>
<td>50-60</td>
</tr>
<tr>
<td>Chlorfenvinphos</td>
<td>470-90-6</td>
<td>12-18</td>
</tr>
<tr>
<td>Calcium dodecylbenzenesulfonate</td>
<td>26264-06-2</td>
<td>5-10</td>
</tr>
<tr>
<td>N-Butyl Alcohol</td>
<td>71-36-3</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>52315-07-8</td>
<td>2-5</td>
</tr>
</tbody>
</table>

4. First-aid measures

Description of necessary first aid measures

Inhalation Move to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician or poison control centre immediately.

Skin contact Take off immediately all contaminated clothing. Wash the skin immediately with soap and water. Call a physician or poison control centre immediately. Wash contaminated clothing before reuse.

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue rinsing. Get medical attention immediately.

Ingestion IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Personal protection for first-aid responders For personal protection, see section 8 of the SDS. IF exposed or concerned: Get medical advice/attention. Take off immediately all contaminated clothing. Show this safety data sheet to the doctor in attendance. Discard any shoes or clothing items that cannot be decontaminated.

Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
Symptoms caused by exposure
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause skin irritation. Signs and symptoms might include skin rash, itching, redness or swelling. May cause allergic skin reaction. Rash, Dermatitis. May cause central nervous system effects. Dizziness. Narcosis. Behavioural changes. Decrease in motor functions. Effects of organophosphate exposure include tightness in chest, difficulty breathing, wheezing, increased tearing and salivation, sweating, frequent urination, constriction of pupils, nausea, vomiting, abdominal cramps, diarrhea, fatigue, weakness, involuntary twitching, pallor, decreased heart rate, and decreased blood pressure. Additional nervous system effects include headache, restlessness, slurred speech, tremors, loss of reflexes, and incoordination. Gross overexposure may result in convulsions, seizures, coma, or death due to respiratory failure. Effects can be immediate or delayed. Pyrethroids can cause seizures and paraesthesia (i.e. stinging, burning, itching, tingling, and numbness) of the face, hands, arms, forearms, and neck which may be worsened by contact with moisture and water. Other signs and symptoms of exposure include dizziness, salivation, headache, fatigue, vomiting, diarrhea, and irritability to sound and touch. Pyrethroids may cause sensitization and allergic reactions. Effects may be immediate or delayed.

Medical attention and special treatment
This product contains organophosphate and pyrethroid insecticides. Monitor respiratory, cardiac and central nervous system. Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures
Extinguishing media
Suitable extinguishing media
Water fog. Alcohol resistant 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
Flammable liquid and vapour. Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. 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
In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Hazchem Code
3W

General fire hazards
Flammable liquid - may release vapours that form flammable mixtures at or above the flash point. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Fine particles (such as mists) may fuel fires/explosions. Flammable Category 3 (GHS); Flammable (AS1940)

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. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Ensure adequate ventilation. Ventilate the contaminated area. Do not breathe mist or vapour. Do not get in eyes, on skin, or on clothing. 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

Ensure adequate ventilation. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Use water spray to reduce vapours or divert vapour cloud drift. Ground container and transfer equipment to eliminate static electric sparks. Avoid release to the environment. Prevent entry into waterways, sewer, basements or confined areas.

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. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean surface thoroughly to remove residual contamination.

Small Spills: Absorb spillage with non-combustible, absorbent material. 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

Flammable liquid and vapour. Very toxic. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Should be handled in closed systems, if possible. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground container and transfer equipment to eliminate static electric sparks. Use non-sparking tools when opening or closing containers. Do not breathe mist or vapour. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Use this product with adequate ventilation. Use only outdoors or in a well-ventilated area. Wear personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a place accessible by authorised persons only. Store in tightly closed original container in a dry, cool and well-ventilated place, < 30C/86F. Do not store in direct sunlight. Do not allow material to freeze. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep in an area equipped with sprinklers. Use appropriate container to avoid environmental contamination. Store away from incompatible materials (see Section 10 of the SDS). Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children.

8. Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

<table>
<thead>
<tr>
<th>Zoetis Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cypermethrin (CAS 52315-07-8)</td>
<td>TWA</td>
<td>80 µg/m³</td>
</tr>
</tbody>
</table>

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td>Ceiling</td>
<td>152 mg/m³</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td>TWA</td>
<td>20 ppm</td>
</tr>
</tbody>
</table>

UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td>STEL</td>
<td>154 mg/m³</td>
</tr>
</tbody>
</table>

50 ppm
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>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td>TWA 310 mg/m3</td>
</tr>
<tr>
<td></td>
<td>100 ppm</td>
</tr>
</tbody>
</table>

**Biological limit values**

Germany. TRGS 903, BAT List (Biological Limit Values)

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td>2 mg/g</td>
<td>1-Butanol (nach Hydrolyse)</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>10 mg/g</td>
<td>1-Butanol (nach Hydrolyse)</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

**Exposure guidelines**

**Australia OELs: Skin designation**

N-Butyl Alcohol (CAS 71-36-3) Can be absorbed through the skin.

**Control banding approach**

Chlorfenvinphos: Zoetis OEB 4 - Skin (control exposure to the range of >1ug/m3 to <10ug/m3, provide additional precautions to protect from skin contact)

**Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas. 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. Keep air contamination levels below the exposure limits or within the OEB range listed above in this section. Eye wash facilities and emergency shower must be available when handling this product.

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

**Eye/face protection**

Chemical goggles and face shield are recommended.

**Skin protection**

Hand protection

Impervious gloves. Wear impervious, disposable gloves as minimum protection (double recommended). Suitable gloves can be recommended by the glove supplier.

**Other**

Avoid exposure - obtain special instructions before use. Wear appropriate chemical resistant clothing. Wear impervious protective clothing to prevent skin contact - consider use of disposable clothing where appropriate.

**Respiratory protection**

Avoid exposure - obtain special instructions before use. 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. 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. 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. Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures**

Do not get in eyes, on skin, on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. 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. Contaminated work clothing should not be allowed out of the workplace. Strict control of access to the working area is essential.

**9. Physical and chemical properties**

**Appearance**

Physical state: Liquid.

Form: Liquid.
**Colour**
Amber.

**Odour**
Not available.

**Odour threshold**
Not available.

**pH**
Not available.

**Melting point/freezing point**
Not available.

**Initial boiling point and boiling range**
Not available.

**Flash point**
55.0 °C (131.0 °F)

**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.

**Vapour pressure**
Not available.

**Vapour density**
Not available.

**Relative density**
Not available.

**Solubility(ies)**
- **Solubility (water)**
  emulsifiable
- **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.
- **Specific gravity**
  0.95

**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. Keep away from heat, spark, open flames and other sources of ignition. Protect from sunlight.

**Incompatible materials**

**Hazardous decomposition products**
Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition. Carbon oxides. Nitrogen oxides (NOx). Oxides of phosphorus. Chlorine compounds. May include hydrogen chloride.

**11. Toxicological information**

**Information on possible routes of exposure**

**Inhalation**
Fatal if inhaled. May cause damage to organs by inhalation.

**Skin contact**
Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction. May be absorbed through the skin and cause systemic effects.

**Calcium dodecylbenzenesulfonate**
Severity: Moderate

**Chlorfenvinphos**
Species: Guinea Pig
Severity: Non-irritating
Skin contact
Chlorfenvinphos  
Species: Rabbit  
Severity: Non-irritating
Cypermethrin  
Species: Rabbit  
Severity: Slight

Eye contact
Causes serious eye damage.
Calcium dodecylbenzenesulfonate  
Severity: Severe

Ingestion  
Toxic if swallowed. May cause lung damage if swallowed. Vomiting of petroleum-containing liquids can result in chemical pneumonitis.

Symptoms related to exposure  
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. May cause central nervous system effects. Narcosis. Behavioural changes. Decrease in motor functions. Dizziness. Effects of organophosphate exposure include tightness in chest, difficulty breathing, wheezing, increased tearing and salivation, sweating, frequent urination, constriction of pupils, nausea, vomiting, abdominal cramps, diarrhea, fatigue, weakness, involuntary twitching, pallor, decreased heart rate, and decreased blood pressure. Additional nervous system effects include headache, restlessness, slurred speech, tremors, loss of reflexes, and incoordination. Gross overexposure may result in convulsions, seizures, coma, or death due to respiratory failure. Effects can be immediate or delayed. Pyrethroids can cause seizures and paraesthesia (i.e. stinging, burning, itching, tingling, and numbness) of the face, hands, arms, forearms, and neck which may be worsened by contact with moisture and water. Other signs and symptoms of exposure include dizziness, salivation, headache, fatigue, vomiting, diarrhea, and irritability to sound and touch. Pyrethroids may cause sensitization and allergic reactions. Effects may be immediate or delayed.

Acute toxicity  
Fatal if inhaled. Toxic in contact with skin. Toxic if swallowed. May cause an allergic skin reaction.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barricade® 'S' Cattle Dip and Spray</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>220 mg/kg (Calculated ATE)</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>0.35 mg/l (Calculated ATE)</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>70 mg/kg (Calculated ATE)</td>
</tr>
<tr>
<td><strong>Components</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorfenvinphos (CAS 470-90-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>31 - 108 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31 mg/kg</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>0.05 mg/l, 4 Hours</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>10 mg/kg</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOEL</td>
<td>Rat</td>
<td>0.5 mg/kg/day, 2 years Cholinesterase inhibition</td>
</tr>
<tr>
<td>NOEL</td>
<td>Mouse</td>
<td>0.15 mg/kg/day, 90 weeks Cholinesterase inhibition</td>
</tr>
<tr>
<td><strong>Subacute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOEL</td>
<td>Guinea Pig</td>
<td>0.1 mg/kg/day, 14 days Cholinesterase inhibition</td>
</tr>
<tr>
<td>Components</td>
<td>Species</td>
<td>Test results</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Subchronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral NOAEL</td>
<td>Rat</td>
<td>0.05 mg/kg/day, 12 weeks Cholinesterase inhibition</td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rat</td>
<td>1600 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Rat</td>
<td>2.5 mg/l, 4 hours</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Mouse</td>
<td>82 - 779 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>4123 mg/kg (in water)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250 mg/kg (in corn oil)</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LOEL</td>
<td>Rat</td>
<td>750 ppm, 5 weeks (Target organ(s): Central Nervous System)</td>
</tr>
<tr>
<td>NOAEL</td>
<td>Dog</td>
<td>1 mg/kg/day, 52 weeks (Target organ(s): Gastrointestinal System, Central nervous system)</td>
</tr>
<tr>
<td><strong>N-Butyl Alcohol (CAS 71-36-3)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>790 mg/kg</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>Causes skin irritation.</td>
<td></td>
</tr>
<tr>
<td><strong>Corrosivity</strong></td>
<td>Species: Guinea pig Severity: Non-irritating</td>
<td></td>
</tr>
<tr>
<td>Chlorfenvinphos</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species: Rabbit Severity: Non-irritating</td>
<td></td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>Species: Rabbit Severity: Slight</td>
<td></td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation</strong></td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td><strong>Eye contact</strong></td>
<td>Calcium dodecylbenzenesulfonate Severity: Severe</td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitisation</strong></td>
<td>Not a respiratory sensitizer.</td>
<td></td>
</tr>
<tr>
<td><strong>Respiratory sensitisation</strong></td>
<td>May cause an allergic skin reaction.</td>
<td></td>
</tr>
<tr>
<td><strong>Skin sensitisation</strong></td>
<td></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></td>
<td></td>
</tr>
<tr>
<td>Chlorfenvinphos</td>
<td>Chromosome Aberration Result: negative Species: Hamster Bone marrow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dominant Lethal Assay Result: negative Species: Mouse</td>
<td></td>
</tr>
</tbody>
</table>
Mutagenicity
Chlorfenvinphos
In Vitro Bacterial Mutagenicity (Ames)
Result: negative
Species: Salmonella, E. coli

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

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

Developmental effects
Chlorfenvinphos
3 mg/kg/day Embryo / Fetal Development, Not Teratogenic
Result: NOEL
Species: Rat
Organ: Oral

Cypermethrin
8 mg/kg Embryo / Fetal Development, Not teratogenic
Result: NOAEL
Species: Rat
Organ: Oral

Reproductivity
Chlorfenvinphos
0.05 mg/kg/day 2 Generation Reproductive Toxicity,
Embryotoxicity
Result: NOAEL
Species: Rat
Organ: Oral

Specific target organ toxicity - single exposure
May cause damage to organs (nervous system).

Specific target organ toxicity - repeated exposure
May cause damage to organs (nervous system, Adrenal gland, digestive organs) through prolonged or repeated exposure.

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

Chronic effects
May cause damage to organs through prolonged or repeated exposure.

Other information
This product contains organophosphate and pyrethroid insecticides. Danger of very serious irreversible effects. Avoid exposure - obtain special instructions before use.

12. Ecological information
Ecotoxicity
Very toxic to aquatic life with long lasting effects. Avoid release to the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorfenvinphos (CAS 470-90-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC50</td>
<td>Daphnia magna (Water Flea)</td>
<td>0.0003 mg/l, 48 Hours</td>
</tr>
<tr>
<td>LC50</td>
<td>Oncorhynchus mykiss (Rainbow Trout)</td>
<td>0.1 mg/l, 96 Hours</td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Bluegill (Lepomis macrochirus)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cypermethrin (CAS 52315-07-8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Oncorhynchus mykiss (Rainbow Trout)</td>
<td>0.055 mg/l, 24 Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salmo salar (Atlantic salmon)</td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Carp (Cyprinus carpio)</td>
</tr>
<tr>
<td>N-Butyl Alcohol (CAS 71-36-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Bluegill (Lepomis macrochirus)</td>
</tr>
</tbody>
</table>

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential

Material name: Barricade® 'S' Cattle Dip and Spray
SDS AUSTRALIA
2975
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13. Disposal considerations

Disposal methods
Avoid release to the environment. Do not discharge into drains, water courses or onto the ground. 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. Contract with a disposal operator licensed by the Law on Disposal and Cleaning.

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. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

ADG
UN number 3017
UN proper shipping name Organophosphorus pesticide, liquid, toxic, flammable (Chlorfenvinphos, N-Butyl Alcohol)
Transport hazard class(es)
Class 6.1
Subsidiary risk 3
Packing group III
Environmental hazards Not available.
Hazchem Code 3W
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID
UN number 3017
UN proper shipping name Organophosphorus pesticide, liquid, toxic, flammable (Chlorfenvinphos, N-Butyl Alcohol)
Transport hazard class(es)
Class 6.1
Subsidiary risk 3
Packing group III
Environmental hazards Yes (Chlorfenvinphos, Cypermethrin)
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA
UN number 3017
UN proper shipping name Organophosphorus pesticide, liquid, toxic, flammable (Chlorfenvinphos, N-Butyl alcohol)
Transport hazard class(es)
Class 6.1
Subsidiary risk 3
Packing group III
Environmental hazards No.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG
UN number 3017
UN proper shipping name Organophosphorus pesticide, liquid, toxic, flammable (Chlorfenvinphos, N-Butyl alcohol), MARINE POLLUTANT (Chlorfenvinphos, Cypermethrin)
<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>6.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>EmS</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Special precautions for user**
Read safety instructions, SDS and emergency procedures before handling.
Not established.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
ADG

**General information**
IMDG Regulated Marine Pollutant. Marine pollutant requirements apply only to quantities >5 Liters for liquids / >5 Kilograms for solids (per inner package) when shipped as per IMDG or ADR (effective year 2015 or greater) regulations. Please refer to the applicable dangerous goods regulations for additional information. Transport according to the requirements of the appropriate regulatory body.

**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. 45211
Poison Schedule (Product) – Schedule 7

**Australia Medicines & Poisons Appendix E**
N-Butyl Alcohol (CAS 71-36-3)
Australia Medicines & Poisons Appendix F
N-Butyl Alcohol (CAS 71-36-3)

Australia Medicines & Poisons Schedule 5
CYPERMETHRIN (CAS 52315-07-8)
N-Butyl Alcohol (CAS 71-36-3)

Australia Medicines & Poisons Schedule 6
N-Butyl Alcohol (CAS 71-36-3)
ZETA-CYPERMETHRIN (CAS 52315-07-8)

Australia Medicines & Poisons Schedule 7
CHLORFENVINPHOS (CAS 470-90-6)
ZETA-CYPERMETHRIN (CAS 52315-07-8)

High Volume Industrial Chemicals (HVIC)
Liquid hydrocarbon (CAS Proprietary) 1000 - 9999 TONNES See the regulation for additional information.
N-Butyl Alcohol (CAS 71-36-3) 1000 - 9999 TONNES See the regulation for additional information.

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
Cypermethrin (CAS 52315-07-8)

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 (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>
</tbody>
</table>
Country(s) or region | Inventory name | On inventory (yes/no)*
--- | --- | ---
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No

*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 | 09-November-2016
Revision date | 28-June-2017

Key abbreviations or acronyms used
ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).

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
Transport Information: Material Transportation Information
Regulatory Information: Other
Regulatory information: National regulations