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

#### Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Beetrix™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Not Available</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains metamitron, ethofumesate and phenmedipham)</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

#### Relevant identified uses of the substance or mixture and uses advised against

| Relevant identified uses | Herbicide. Use according to manufacturer's directions. |

#### Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Registered company name</th>
<th>Lonza NZ Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>13-15 Hudson Road Bell Block New Plymouth 4312 New Zealand</td>
</tr>
<tr>
<td>Telephone</td>
<td>+64 6 755 9234</td>
</tr>
<tr>
<td>Fax</td>
<td>+64 6 755 1174</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.lonza.co.nz">www.lonza.co.nz</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:office-newplymouth@lonza.com">office-newplymouth@lonza.com</a></td>
</tr>
</tbody>
</table>

#### Emergency telephone number

<table>
<thead>
<tr>
<th>Association / Organisation</th>
<th>Lonza NZ Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone numbers</td>
<td>0800 243 622</td>
</tr>
<tr>
<td>Other emergency telephone numbers</td>
<td>+64 4 917 9888 (International)</td>
</tr>
</tbody>
</table>

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification [1]</th>
<th>Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Sensitizer Category 1, Specific target organ toxicity - repeated exposure Category 2, Chronic Aquatic Hazard Category 2, Acute Terrestrial Hazard Category 2</th>
</tr>
</thead>
</table>

#### Legend:


#### Determined by Chemwatch using GHS/HSNO criteria

| 6.1D (dermal), 6.1D (inhalation), 6.1D (oral), 6.5B (contact), 6.9B, 9.1B, 9.2B |

*LIMITED EVIDENCE

#### Label elements

<table>
<thead>
<tr>
<th>Hazard pictogram(s)</th>
<th>!</th>
<th>☠</th>
<th>🌳</th>
</tr>
</thead>
</table>

**WARNING**

#### Hazard statement(s)

| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H332 | Harmful if inhaled. |
| H317 | May cause an allergic skin reaction. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H422 | Toxic to the soil environment |
**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Mixtures**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% (weight)</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>41394-05-2</td>
<td>10-20</td>
<td>metamitron</td>
</tr>
<tr>
<td>13684-63-4</td>
<td>1-5</td>
<td>phenmedipham</td>
</tr>
<tr>
<td>26225-79-6</td>
<td>1-5</td>
<td>ethofumesate</td>
</tr>
<tr>
<td>Not Available</td>
<td>balance</td>
<td>Ingredients determined not to be hazardous</td>
</tr>
<tr>
<td>Not Available</td>
<td></td>
<td>includes</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>50-70</td>
<td>water</td>
</tr>
</tbody>
</table>

**SECTION 4 FIRST AID MEASURES**

**Description of first aid measures**

**Eye Contact**

- If this product comes in contact with the eyes:
  - Wash out immediately with fresh running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Seek medical attention without delay; if pain persists or recurs seek medical attention.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**Skin Contact**

- If skin contact occurs:
  - Immediately remove all contaminated clothing, including footwear.
  - Flush skin and hair with running water (and soap if available).
  - Seek medical attention in event of irritation.

**Inhalation**

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained.
- Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

**Ingestion**

- **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient’s condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

- INDUCE vomiting with fingers down the back of the throat. ONLY IF CONSCIOUS. Lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration.
- NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

1,2-Benzisothiazoline-3-one (BIT) is rapidly metabolised in animals. Neither the substance nor its metabolites accumulate in the liver or adipose tissue. Excretion is mainly via the urine. The main metabolite is o-methylsulfinylbenzamide

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

<table>
<thead>
<tr>
<th>Fire Incompatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result</td>
</tr>
</tbody>
</table>

Advice for firefighters

**Fire Fighting**

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full-body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

**Fire/Explosion Hazard**

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acid smoke.
- Mists containing combustible materials may be explosive.
- Combustion products include:
  - carbon dioxide (CO2)
  - nitrogen oxides (NOx)
  - sulfur oxides (SOx)
  - other pyrolysis products typical of burning organic material.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

**Minor Spills**

Environmental hazard - contain spillage.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

**Major Spills**

Environmental hazard - contain spillage.

- Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite.
- The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na2S2O5) or sodium bisulfite (NaHSO3), or 12% sodium sulfite (Na2SO3) and 8% hydrochloric acid (HCl).
- Glutathione has also been used to inactivate the isothiazolinones.
- Use 20 volumes of decontaminating solution for each volume of biocide, and let containers stand for at least 30 minutes to deactivate microbicide before disposal.
- If contamination of drains or waterways occurs, advise emergency services.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
Increase ventilation.  
Stop leak if safe to do so.  
Contain spill with sand, earth or vermiculite.  
Collect recoverable product into labelled containers for recycling.  
Absorb remaining product with sand, earth or vermiculite.  
Collect solid residues and seal in labelled drums for disposal.  
Wash area and prevent runoff into drains.  
If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling

- **DO NOT** allow clothing wet with material to stay in contact with skin
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

- Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beetrix™</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>metamitron</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>phenmedipham</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>ethofumesate</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>water</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**OCCUPATIONAL EXPOSURE BANDING**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Occupational Exposure Band Rating</th>
<th>Occupational Exposure Band Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>metamitron</td>
<td>E</td>
<td>≤ 0.01 mg/m³</td>
</tr>
</tbody>
</table>

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

Continued...
### Exposure controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:
- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Enclosure and/or isolation of emission source which keeps a selected hazard “physically” away from the worker and ventilation that strategically “adds” and removes air in the work area.
- Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
- Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection.

Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying “escape” velocities which, in turn, determine the “capture velocities” of fresh circulating air required to effectively remove the contaminant.

- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

### Appropriate engineering controls

<table>
<thead>
<tr>
<th>Type of Contaminant:</th>
<th>Air Speed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td>
<td>0.25-0.5 m/s (50-100 f/min.)</td>
</tr>
<tr>
<td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td>
<td>0.5-1 m/s (100-200 f/min.)</td>
</tr>
<tr>
<td>direct spray, spray painting in shallow booths, drum filling, conveyor loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td>
<td>1.25-5 m/s (200-500 f/min.)</td>
</tr>
<tr>
<td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td>
<td>2.5-10 m/s (500-2000 f/min.)</td>
</tr>
</tbody>
</table>

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

### Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irritation immediately and remove contact lens as soon as practicable. Lenses should be removed as the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

### Eye and face protection

- Wear safety footwear or safety gumboots, e.g. Rubber

### Skin protection

See Hand protection below

### Hands/feet protection

#### Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- chemical resistance of glove material,
- glove thickness and dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:
### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>White liquid; mixes in water.</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>pH (as supplied)</strong></td>
<td>4.5-6.5</td>
</tr>
<tr>
<td><strong>Melting point / freezing point</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relative density (Water = 1)</strong></td>
<td>1.08</td>
</tr>
<tr>
<td><strong>Partition coefficient n-octanol / water</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature (°C)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Viscosity (cSt)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Molecular weight (g/mol)</strong></td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

#### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the "Forsberg Clothing Performance Index". The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

**Beetrix™**

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTYL</td>
<td>A</td>
</tr>
<tr>
<td>NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>VITON</td>
<td>A</td>
</tr>
<tr>
<td>NATURAL RUBBER</td>
<td>C</td>
</tr>
<tr>
<td>PVA</td>
<td>C</td>
</tr>
</tbody>
</table>

* CPI - Chemwatch Performance Index
  - A: Best Selection
  - B: Satisfactory; may degrade after 4 hours continuous immersion
  - C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation.

- * Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

- Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

  - Butyl rubber gloves
  - Nitrile rubber gloves

**Respiratory protection**

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

<table>
<thead>
<tr>
<th>Required minimum protection factor</th>
<th>Maximum gas/vapour concentration present in air p.p.m. (by volume)</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10</td>
<td>1000</td>
<td>A-AUS / Class1</td>
<td>-</td>
</tr>
<tr>
<td>up to 50</td>
<td>1000</td>
<td>A-AUS / Class 1</td>
<td>-</td>
</tr>
<tr>
<td>up to 50</td>
<td>5000</td>
<td>Airline *</td>
<td>-</td>
</tr>
<tr>
<td>up to 100</td>
<td>5000</td>
<td>-</td>
<td>A-2</td>
</tr>
<tr>
<td>up to 100</td>
<td>10000</td>
<td>-</td>
<td>A-3</td>
</tr>
</tbody>
</table>

* - Continuous Flow **: Continuous-flow or positive pressure demand

- Thinner gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

- Thicker gloves may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

- Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Butyl rubber gloves
- Nitrile rubber gloves

### Body protection

- Overall
- P.V.C. apron
- Barrier cream
- Skin cleansing cream
- Eye wash unit

### Other protection

- See Other protection below

---

Continued...
**SECTION 10 STABILITY AND REACTIVITY**

**Reactivity**
- See section 7

**Chemical stability**
- Une stable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

**Possibility of hazardous reactions**
- See section 7

**Conditions to avoid**
- See section 7

**Incompatible materials**
- See section 7

**Hazardous decomposition products**
- See section 5

**SECTION 11 TOXICOLOGICAL INFORMATION**

Information on toxicological effects

- **Inhaled**
  - There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

- **Ingestion**
  - Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

- **Skin Contact**
  - There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Skin contact with the material may be harmful; systemic effects may result following absorption. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

- **Eye**
  - There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

**Beetrix™**

<table>
<thead>
<tr>
<th><strong>TOXICITY</strong></th>
<th><strong>IRRITATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

- **metamitron**
  - **TOXICITY**
    - dermal (rat) LD50: >500 mg/kg
  - **IRRITATION**
    - Not Available

- **phenmedipham**
  - **TOXICITY**
    - dermal (rat) LD50: >500 mg/kg
  - **IRRITATION**
    - Eye: no adverse effect observed (not irritating)

- **ethofumesate**
  - **TOXICITY**
    - dermal (rat) LD50: >1440 mg/kg
  - **IRRITATION**
    - Eye: mild

- **water**
  - **TOXICITY**
    - Oral (rat) LD50: >90000 mg/kg
  - **IRRITATION**
    - Not Available

**Legend:**
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity
2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

**METAMITRON**
(aerosol) * ADI 0.13 mg/kg b.w. * Toxicity Class WHO III; EPA III NOEL (2 y) for rats 250, dogs 100 mg/kg diet (87 weeks) for mice 56 mg/kg diet *
Carbamate pesticides are less dangerous than organophosphorus pesticides. It requires higher dose to produce toxicity or mortality. However, its toxicity via skin contact is low to moderate. Its rapid metabolism causes acute toxic effect but subsequent rapid recovery. It may cause skin and eye irritation, increased pigmentation, sperm abnormalities, sensitization, cancer, mutations and genetic and foetal defects. It is easily absorbed through the skin, mucus membranes, airway and digestive tract. It can cause changes to the function of the blood-making system and the liver and kidney, at higher concentrations it can cause degeneration of the liver, kidney and testes. Its metabolites are detectable in urine. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Exposed to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

**ETHOFUMESATE**

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

**WATER**

No significant acute toxicological data identified in literature search.

### Acute Toxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beetrix™</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>1.362mg/L</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
<td>48</td>
<td>crustacea</td>
<td>101.7mg/L</td>
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<tr>
<td></td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
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<tr>
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<td>NOEC</td>
<td>504</td>
<td>Fish</td>
<td>9.9mg/L</td>
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<tr>
<td><strong>metamitron</strong></td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>0.0122718mg/L</td>
<td>4</td>
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<tr>
<td></td>
<td>EC50</td>
<td>48</td>
<td>crustacea</td>
<td>ca.6mg/L</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>-0.13mg/L</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>NOEC</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>-0.008mg/L</td>
<td>1</td>
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<tr>
<td><strong>phenmedipham</strong></td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>0.50mg/L</td>
<td>4</td>
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<tr>
<td></td>
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<td>crustacea</td>
<td>ca.13.52mg/L</td>
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<tr>
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<td>NOEC</td>
<td>504</td>
<td>crustacea</td>
<td>ca.0.32mg/L</td>
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<tr>
<td><strong>ethofumesate</strong></td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>897.520mg/L</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>8768.874mg/L</td>
<td>3</td>
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<tr>
<td><strong>water</strong></td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>897.520mg/L</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>8768.874mg/L</td>
<td>3</td>
</tr>
</tbody>
</table>

**Legend:**

- Data either not available or does not fill the criteria for classification
- Data available to make classification

###SECTION 12 ECOLOGICAL INFORMATION

**Toxicity**

- **Beetrix™**
  - Acute Toxicity: Not Available
  - Carcinogenicity: Not Available
  - Reproductivity: Not Available

- **metamitron**
  - Acute Toxicity: LC50 = 96 (Fish) 1.362mg/L
  - Carcinogenicity: Not Available
  - Reproductivity: Not Available

- **phenmedipham**
  - Acute Toxicity: LC50 = 96 (Fish) 0.0122718mg/L
  - Carcinogenicity: Not Available
  - Reproductivity: Not Available

- **ethofumesate**
  - Acute Toxicity: LC50 = 96 (Fish) 0.50mg/L
  - Carcinogenicity: Not Available
  - Reproductivity: Not Available

- **water**
  - Acute Toxicity: LC50 = 96 (Fish) 897.520mg/L
  - Carcinogenicity: Not Available
  - Reproductivity: Not Available

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>metamitron</td>
<td>HIGH</td>
<td>HIGH</td>
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</table>
Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>metamitron</td>
<td>LOW (LogKOW = 1.4428)</td>
</tr>
<tr>
<td>phenmedipham</td>
<td>LOW (BCF = 165)</td>
</tr>
<tr>
<td>ethofumesate</td>
<td>LOW (BCF = 67)</td>
</tr>
<tr>
<td>water</td>
<td>LOW (LogKOW = -1.38)</td>
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</tbody>
</table>

Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>metamitron</td>
<td>LOW (KOC = 3278)</td>
</tr>
<tr>
<td>phenmedipham</td>
<td>LOW (KOC = 2589)</td>
</tr>
<tr>
<td>water</td>
<td>LOW (KOC = 14.3)</td>
</tr>
</tbody>
</table>

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Containers may still present a chemical hazard/danger when empty.
- Return to supplier for reuse/recycling if possible.

Otherwise:
- If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:
- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

Only dispose to the environment if a tolerable exposure limit has been set for the substance.

Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant

HAZCHEM •3Z

Land transport (UN)

<table>
<thead>
<tr>
<th>UN number</th>
</tr>
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<tbody>
<tr>
<td>3082</td>
</tr>
</tbody>
</table>
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains metamitron, ethofumesate and phenmedipham)

Transport hazard class(es)
- Class: 9
- Subrisk: Not Applicable

Packing group: III

Environmental hazard: Environmentally hazardous

Special precautions for user
- Special provisions: 274; 331; 335; 375
- Limited quantity: 5 L

Air transport (ICAO-IATA / DGR)
- UN number: 3082
- UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s. * (contains metamitron, ethofumesate and phenmedipham)
- Transport hazard class(es)
  - ICAO/IATA Class: 9
  - ICAO / IATA Subrisk: Not Applicable
  - ERG Code: 9L
- Packing group: III
- Environmental hazard: Environmentally hazardous
- Special precautions for user
  - Special provisions: A97 A158 A197
  - Cargo Only Packing Instructions: 964
  - Cargo Only Maximum Qty / Pack: 450 L
  - Passenger and Cargo Packing Instructions: 964
  - Passenger and Cargo Maximum Qty / Pack: 450 L
  - Passenger and Cargo Limited Quantity Packing Instructions: Y964
  - Passenger and Cargo Limited Maximum Qty / Pack: 30 kg G

Sea transport (IMDG-Code / GGVSee)
- UN number: 3082
- UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains metamitron, ethofumesate and phenmedipham)
- Transport hazard class(es)
  - IMDG Class: 9
  - IMDG Subrisk: Not Applicable
- Packing group: III
- Environmental hazard: Marine Pollutant
- Special precautions for user
  - EMS Number: F-A , S-F
  - Special provisions: 274 335 969
  - Limited Quantities: 5 L

Transport in bulk according to Annex II of MARPOL and the IBC code
- Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture
- This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number: Group Standard
- HSR100524: Not Available

METAMITRON IS FOUND ON THE FOLLOWING REGULATORY LISTS
- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods Requirements (IMDG Code)
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification Data

PHENMEDIPHAM IS FOUND ON THE FOLLOWING REGULATORY LISTS
- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

Continued...
ETHOFUMESATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles
IMO IBC Code Chapter 17: Summary of minimum requirements
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk
International Air Transport Association (IATA) Dangerous Goods Regulations
International Maritime Dangerous Goods Requirements (IMDG Code)

NEW ZEALAND HAZARDOUS SUBSTANCES AND NEW ORGANISMS (HSNO) ACT - CLASSIFICATION OF CHEMICALS - CLASSIFICATION DATA

New Zealand Inventory of Chemicals (NZIoC)
New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1 Quantity limits
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

WATER IS FOUND ON THE FOLLOWING REGULATORY LISTS

IMO IBC Code Chapter 18: List of products to which the Code does not apply
New Zealand Inventory of Chemicals (NZIoC)

SECTION 16 OTHER INFORMATION

Revision Date 05/02/2020
Initial Date 08/01/2020

SDS Version Summary

<table>
<thead>
<tr>
<th>Version</th>
<th>Issue Date</th>
<th>Sections Updated</th>
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<tbody>
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<tr>
<td>3.1.1.1</td>
<td>05/02/2020</td>
<td>Acute Health (eye), Acute Health (skin), Classification, First Aid (eye), Ingredients</td>
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Other information

Continued...
Ingredients with multiple cas numbers

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethofumesate</td>
<td>26225-79-6, 67293-74-7</td>
</tr>
</tbody>
</table>

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL: No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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