1. Identification of Substance & Company

<table>
<thead>
<tr>
<th>Product</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Spark</td>
</tr>
<tr>
<td>Product code</td>
<td>TNL3613</td>
</tr>
<tr>
<td>HSNO approval</td>
<td>HSR101367</td>
</tr>
<tr>
<td>UN number</td>
<td>3082</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, nos (contains Desmedipham)</td>
</tr>
<tr>
<td>DG class</td>
<td>9</td>
</tr>
<tr>
<td>Packaging group</td>
<td>III</td>
</tr>
<tr>
<td>Hazchem code</td>
<td>3Z</td>
</tr>
<tr>
<td>Uses</td>
<td>Herbicide</td>
</tr>
</tbody>
</table>

Company Details

| Company: | Lonza NZ Ltd |
| Address: | 13-15 Hudson Rd Bell Block New Plymouth New Zealand |
| Telephone: | +64 6 755 9234 |
| Number: | +64 6 755 1174 |
| Emergency Telephone Number: | 0800CHEMCALL (0800 243 622) |
| International Emergency Phone: | +64 4 917 9888 |

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR101367). The EPA have determined the hazard classification of this substance to be as follows.

<table>
<thead>
<tr>
<th>Classes</th>
<th>Hazard Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1D (oral)</td>
<td>H302 - Harmful if swallowed.</td>
</tr>
<tr>
<td>6.1C (dermal)</td>
<td>H311 - Toxic in contact with skin.</td>
</tr>
<tr>
<td>6.3A</td>
<td>H315 - Causes skin irritation.</td>
</tr>
<tr>
<td>6.4A</td>
<td>H319 - Causes serious eye irritation.</td>
</tr>
<tr>
<td>6.5B</td>
<td>H317 - May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>6.9B</td>
<td>H371 - May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>9.1A</td>
<td>H410 - Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>9.2A</td>
<td>H421 - Very toxic to the soil environment.</td>
</tr>
<tr>
<td>9.3C</td>
<td>H433 - Harmful to terrestrial vertebrates.</td>
</tr>
</tbody>
</table>

SYMBOLS

DANGER

Other Classifications

There are no other classifications that are known to apply.
**Precautionary Statements**
P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.
P260 - Do not breathe vapours.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/eye protection/face protection*.
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P312 - Call a POISON CENTRE or doctor/physician if you feel unwell.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse
P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a POISON CENTRE or doctor/physician if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.

### 3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS/ Identification</th>
<th>Conc (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desmedipham</td>
<td>13684-56-5</td>
<td>30-60%</td>
</tr>
<tr>
<td>N,N-dimethyloctanamide</td>
<td>1118-92-9</td>
<td>30-60%</td>
</tr>
<tr>
<td>N,N-dimethyldecan-1-amide</td>
<td>14433-76-2</td>
<td></td>
</tr>
<tr>
<td>Morpholine acyl derivs</td>
<td>proprietary</td>
<td></td>
</tr>
<tr>
<td>Surfactant</td>
<td>proprietary</td>
<td>1-3%</td>
</tr>
<tr>
<td>Ingredients not contributing to HSNO classes</td>
<td>proprietary</td>
<td>balance</td>
</tr>
</tbody>
</table>

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

### 4. First Aid

**General Information**
Lonza NZ have an Emergency Contact Phone Number: 0800 243 622, +64 4 917 9888
If medical advice is needed, have product container or label at hand. IF exposed or concerned: Get medical advice/attention.
**Recommended first aid facilities**
Ready access to running water is recommended. Accessible eyewash is recommended.

**Exposure**

**Swallowed**
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.

**Eye contact**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Skin contact**
IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTRE or doctor/physician if you feel unwell. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

**Inhaled**
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

**Advice to Doctor**
Treat symptomatically
5. Firefighting Measures

**Fire and explosion hazards:** There are no specific risks for fire/explosion for this chemical. It is non-flammable.

**Suitable extinguishing substances:** Carbon dioxide, extinguishing powder, foam.

**Unsuitable extinguishing substances:** Unknown.

**Products of combustion:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

**Protective equipment:** Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.

**Hazchem code:** 3Z

6. Accidental Release Measures

**Containment**

If greater than 100L is stored, secondary containment and emergency plans to manage any potential spills must be in place. In all cases design storage to prevent discharge to storm water.

**Emergency procedures**

In the event of spillage alert the fire brigade to location and give brief description of hazard. Stop the source of the leak, if safe to do so. Shut off all possible sources of ignition. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Do not use sawdust. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).

**Clean-up method**

Use absorbent (soil, sand or other inert material). Rags are not recommended for the clean-up of spills, as they may create fire or environmental hazard. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

**Disposal**

Mop up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.

**Precautions**

Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation.

7. Storage & Handling

**Storage**

Avoid storage of harmful substances with food. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames. Avoid contact with incompatible substances as listed in Section 10.

**Handling**

Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of vapour, mist or aerosols. Consult the label for application rates and methods before commencing work.

8. Exposure Controls / Personal Protective Equipment

**Workplace Exposure Standards**

A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m³ for respirable particulates and 10mg/m³ for inhalable particulates when limits have not otherwise been established.

<table>
<thead>
<tr>
<th>NZ Workplace Exposure Stds</th>
<th>Ingredient</th>
<th>WES-TWA</th>
<th>WES-STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td></td>
<td>25 mg/m³</td>
<td>37 mg/m³</td>
</tr>
</tbody>
</table>

**Engineering Controls**

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.
**Personal Protective Equipment**

**Eyes**
Protect eyes with goggles, safety glasses or full face mask. Avoid wearing contact lenses. Select eye protection in accordance with AS/NZS 1337.

**Skin**
Avoid any skin contact. Wear overalls, rubber boots and impervious gloves. Nitrile gloves are recommended. Protective gloves or suitably resistant material must comply with AS 2161. Replace frequently. Gloves should be checked for tears or holes before use. Protective clothing must comply with AS 2919, AS3765.1 or AS3765.2. PVC or rubber boots must comply with AS/NZS 2210.2 and selected and maintained in accordance with AS/NS2210.1. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking.

**Respiratory**
A respirator when airborne concentrations approach the WES (section 8). Respirators must have filters appropriate to the duty and comply with AS/NZS1716 and selected, used and maintained in accordance with AS/NS 1715. Use a respirator with an organic vapour cartridge with a particulate filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order. Fit testing and clear guidelines and training for use and maintenance of PPE are necessary.

**WES Additional Information**
Not applicable

### 9. Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>clear brown liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>no data</td>
</tr>
<tr>
<td>pH</td>
<td>3.65 @ 21°C</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>no data</td>
</tr>
<tr>
<td>Viscosity</td>
<td>no data</td>
</tr>
<tr>
<td>Boiling point</td>
<td>no data</td>
</tr>
<tr>
<td>Volatile materials</td>
<td>no data</td>
</tr>
<tr>
<td>Freezing / melting point</td>
<td>no data</td>
</tr>
<tr>
<td>Solubility</td>
<td>emulsifies in water</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>~1.01g/ml</td>
</tr>
<tr>
<td>Flash point</td>
<td>no data</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>no data</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>no data</td>
</tr>
<tr>
<td>Upper &amp; lower flammable limits</td>
<td>no data</td>
</tr>
<tr>
<td>Corrosiveness</td>
<td>non corrosive</td>
</tr>
</tbody>
</table>

### 10. Stability & Reactivity

**Stability**
Stable

**Conditions to be avoided**
Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames.

**Incompatible groups**
Oxidisers, alkalis

**Hazardous decomposition products**
Oxides of carbon, oxides of nitrogen, oxides of sulphur.

**Hazardous reactions**
none known
11. Toxicological Information

Summary
IF SWALLOWED: may cause irritation of the gastrointestinal system.
IF IN EYES: may cause serious eye irritation.
IF ON SKIN: may be toxic by skin contact. may cause skin irritation. sensitised individuals may experience an allergic skin reaction.
IF INHALED: vapour may result in respiratory irritation.
CHRONIC TOXICITY: repeated or prolonged oral exposure to N,N-dimethyloctanamide and N,N-dimethyldecan-1-amine may result in liver damage.

Supporting Data

Acute

Oral
Using LD$_{50}$'s for ingredients, the calculated LD$_{50}$ (oral, rat) for the mixture is between 300 and 2000 mg/kg. Data considered includes: Desmedipham 9600mg/kg (rat), N,N-dimethyloctanamide 1250mg/kg (rat), N,N-dimethyldecan-1-amine 1250mg/kg (rat), surfactant 1086 to 1980 mg/kg bw (rat).

Dermal
Using LD$_{50}$'s for ingredients, the calculated LD$_{50}$ (dermal, rat) for the mixture is >5000 mg/kg. Data considered includes: Desmedipham >2000mg/kg (rabbit), N,N-dimethyloctanamide 400-2000mg/kg (rat), N,N-dimethyldecan-1-amine 400-2000mg/kg (rat).

Inhaled
No evidence of acute inhalation toxicity. N,N-dimethyldecan-1-amine may cause irritation of the respiratory tract.

Eye
The mixture is considered to be irritating to the eye, because some of the ingredients present at >3% are considered eye corrosives.

Skin
The mixture is considered to be a skin irritant, because some of the ingredients present are considered skin irritants in more concentrated form.

Chronic

Sensitisation
The morpholine acyl derivative is likely to be a skin sensitisser.

Mutagenicity
No ingredient present at concentrations > 0.1% is considered a mutagen.

Carcinogenicity
No ingredient present at concentrations > 0.1% is considered a carcinogen.

Reproductive / Developmental
No ingredient present at concentrations > 0.1% is considered a reproductive or developmenta toxicant or have any effects on or via lactation.

Systemic
The mixture is considered to be a suspected target organ toxicant, because at least one of the ingredients present in greater than 1% is suspected to be a target organ toxicant.

Aggravation of existing conditions
None known.

12. Ecological Data

Summary
This substance is considered ecotoxic towards aquatic organisms with long lasting effects and harmful towards terrestrial vertebrates.

Supporting Data

Aquatic
Using EC$_{50}$'s for ingredients, the calculated EC$_{50}$ for the mixture is < 1 mg/L. Data considered includes: Desmedipham LC$_{50}$: 1.7 mg/l (96h, Oncorhynchus mykiss (rainbow trout)), EC$_{50}$: 1.88mg/L (48h, Daphnia magna), N,N-dimethyloctanamide 21.1mg/L (96h, static, Oncorhynchus mykiss), 7.7mg/L (48h, static, Daphnia magna), 16.06mg/l (72h, Selenastrum capricornutum (algae)), N,N-dimethyldecan-1-amine 21.1mg/L (96h, static, Oncorhynchus mykiss), 7.7mg/L (48h, static, Daphnia magna), 16.06mg/l (72h, Selenastrum capricornutum (algae)).

Bioaccumulation
No data

Degradability
No data

Soil
EPA have assessed this mixture as 9.2A, very toxic towards soil organisms.

Terrestrial vertebrate
This substance is considered harmful towards terrestrial vertebrates. For data see acute toxicity.

Terrestrial invertebrate
No evidence of ecotoxicity towards terrestrial invertebrates.

Biocidal
No data
13. Disposal Considerations

Restrictions
There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.

Disposal method
Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.

Contaminated packaging
Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.

14. Transport Information

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number: 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, nos (contains Desmedipham)
Class(es): 9
Packing group: III
Precautions: Ecotoxic.
Hazchem code: 3Z

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR101367
All ingredients appear on the NZIoC.

Specific Controls

Possible key workplace requirements are:

SDS To be available within 10 minutes in workplaces storing any quantity.
Inventory An inventory of all hazardous substances must be prepared and maintained.
Packaging All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied.
Labelling Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan Required if > 100L is stored.
Certified handler Not required. Qualifications for application of Spark is required.
Tracking Not required.
Bunding & secondary containment Required if > 100L is stored.
Signage Required if > 100L is stored.
Location compliance certificate Not required.
Flammable zone Not required.
Fire extinguisher Not required.
Additional controls. Maximum application rates must be adhered to, see label for details and application method. This substance may be applied by ground based methods only.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation
In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.
### 16. Other Information

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval Code</td>
<td>HSR101367, Controls, EPA decision document. <a href="http://www.epa.govt.nz">www.epa.govt.nz</a></td>
</tr>
<tr>
<td>CAS Number</td>
<td>Unique Chemical Abstracts Service Registry Number</td>
</tr>
<tr>
<td>EC50</td>
<td>Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Authority (New Zealand)</td>
</tr>
<tr>
<td>HAZCHEM Code</td>
<td>Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters</td>
</tr>
<tr>
<td>HSNO</td>
<td>Hazardous Substances and New Organisms (Act and Regulations)</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>LEL</td>
<td>Lower Explosive Limit</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats)</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)</td>
</tr>
<tr>
<td>MSDS (SDS)</td>
<td>Material Safety Data Sheet (or Safety Data Sheet)</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>STEL</td>
<td>Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)</td>
</tr>
<tr>
<td>UEL</td>
<td>Upper Explosive Limit</td>
</tr>
<tr>
<td>UN Number</td>
<td>United Nations Number</td>
</tr>
<tr>
<td>WES</td>
<td>Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.</td>
</tr>
</tbody>
</table>

### References

**Data**

Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).

**Controls**


**WES**


**Other References:**

Suppliers SDS

### Review

**Date**

June 2019

**Reason for review**

New SDS

### Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely HSNO classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: +64 9 840 30 80.