Nano Anti-Bacterial Surface Wipes
Etailer Limited

Chemwatch: 5395-87
Version No: 2.1.1.1
Safety Data Sheet according to HSNO Regulations

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Nano Anti-Bacterial Surface Wipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>2572877, 3784038</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (contains ethanol)</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 | Sanitizer. Use according to manufacturer's directions. |

Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Registered company name</th>
<th>Etailer Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>6/9 Allen Road East Tamaki Auckland 2013 New Zealand</td>
</tr>
<tr>
<td>Telephone</td>
<td>09 242 0452</td>
</tr>
<tr>
<td>Fax</td>
<td>Not Available</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.nanoppe.com">www.nanoppe.com</a></td>
</tr>
<tr>
<td>Email</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Emergency telephone number

<table>
<thead>
<tr>
<th>Association / Organisation</th>
<th>National Poisons Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone numbers</td>
<td>0800 764 76, 0800 POISON</td>
</tr>
<tr>
<td>Other emergency telephone numbers</td>
<td>Not Available</td>
</tr>
<tr>
<td></td>
<td>+61 2 9186 1132</td>
</tr>
<tr>
<td></td>
<td>+64 800 700 112</td>
</tr>
</tbody>
</table>

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification [1]</th>
<th>Flammable Liquid Category 2, Chronic Aquatic Hazard Category 4, Eye Iritation Category 2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determined by Chemwatch using GHS/HSNO criteria</td>
<td>3.1B, 6.4A, 9.1D (Chronic)</td>
</tr>
</tbody>
</table>

Label elements

Hazard pictogram(s)

[Flammable, Eye Irritation]

Signal word

Danger

Hazard statement(s)

<table>
<thead>
<tr>
<th>H225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly flammable liquid and vapour.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H413</th>
</tr>
</thead>
<tbody>
<tr>
<td>May cause long lasting harmful effects to aquatic life.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H319</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

Precautionary statement(s)

Prevention

<table>
<thead>
<tr>
<th>P210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P233</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep container tightly closed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground and bond container and receiving equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P241</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P242</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use non-sparking tools.</td>
</tr>
</tbody>
</table>
SECTION 3 Composition / information on ingredients

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>75</td>
<td>ethanol</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>20-30</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
Wipe off excess with absorbent tissue or towel.
Seek medical attention if swelling/redness/blistering or irritation occurs.

Inhalation
- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

Ingestion
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media
For SMALL FIRES:
- Dry chemical, CO2, water spray or foam.
For LARGE FIRES:
- Water-spray, fog or foam.

Special hazards arising from the substrate or mixture
- Fire Incompatibility
  - Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- 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. Equipment should be thoroughly decontaminated after use.

**Fire/Explosion Hazard**

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), 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**

- Clean up all spills immediately.
- Secure load if safe to do so.
- Bundle/collection recoverable product.
- Collect remaining material in containers with covers for disposal.

**Major Spills**

- Minor hazard.
- Clear area of personnel.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear physical protective gloves e.g. Leather.
- Contain spills/secure load if safe to do so.
- Bundle/collection recoverable product and label for recycling.
- Collect remaining product and place in appropriate containers for disposal.
- Clean up/sweep up area.
- Water may be required.

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

### SECTION 7 Handling and storage

**Precautions for safe handling**

**Safe handling**

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- 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 are maintained.

**Other information**

- Store away from incompatible materials.
- 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**

Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards.

If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.

**Storage incompatibility**

- Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chlorofomrates.
- Avoid strong bases.

### SECTION 8 Exposure controls / personal protection

**Control parameters**

**Occupational Exposure Limits (OEL)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
</tr>
</thead>
</table>

Continued...
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>ethanol</td>
<td>Ethyl alcohol (Ethanol)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>15000* ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>3,300 ppm</td>
<td>Not Available</td>
</tr>
<tr>
<td>water</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

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 environment. 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.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

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.

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 filing, 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, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td>
<td>1-2.5 m/s (200-500 f/min.)</td>
</tr>
</tbody>
</table>

Within each range the appropriate value depends on:

- Lower end of the range
- Upper end of the range

- 1: Room air currents minimal or favourable to capture
- 1: Disturbing room air currents
- 2: Contaminants of low toxicity or of nuisance value only.
- 2: Contaminants of high toxicity
- 3: Intermittent, low production.
- 3: High production, heavy use
- 4: Large hood or large air mass in motion
- 4: Small hood-local control only

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

No special equipment for minor exposure i.e. when handling small quantities.

Otherwise:

- Safety glasses with side shields.
- 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 irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at 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]

Skin protection

See Hand protection below

Hands/feet protection

See Other protection below

Body protection

See Other protection below

Other protection

No special equipment needed when handling small quantities.

Otherwise:

- Overalls.
- Barrier cream.
- Eyewash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Respiratory protection

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:

<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>NATURAL RUBBER</td>
<td>C</td>
</tr>
<tr>
<td>NATURAL+NEOPRENE</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE</td>
<td>C</td>
</tr>
<tr>
<td>NITRILE+PVC</td>
<td>C</td>
</tr>
<tr>
<td>PE/EVAL/PE</td>
<td>C</td>
</tr>
<tr>
<td>PVA</td>
<td>C</td>
</tr>
<tr>
<td>PVC</td>
<td>C</td>
</tr>
<tr>
<td>VITON</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.

---

**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>Colourless, transparent wet wipe, liquid in fabric with an alcohol odour; soluble in water.</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>article</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>pH (as supplied)</strong></td>
<td>7.9 @ 20°C</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 (°C)</strong></td>
<td>80-81</td>
</tr>
<tr>
<td><strong>Flash point (°C)</strong></td>
<td>17-18 (liquid part, CC)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td>HIGHLY FLAMMABLE.</td>
</tr>
<tr>
<td><strong>Upper Explosive Limit (%)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Lower Explosive Limit (%)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Vapour pressure (kPa)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Solubility in water</strong></td>
<td>Miscible</td>
</tr>
<tr>
<td><strong>Vapour density (Air = 1)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Relative density (Water = 1)</strong></td>
<td>Not Available</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>
<tr>
<td><strong>Surface Tension (dyn/cm or mN/m)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Volatile Component (%vol)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Gas group</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>pH as a solution (1%)</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>VOC g/L</strong></td>
<td>Not Available</td>
</tr>
</tbody>
</table>

---

**SECTION 10 Stability and reactivity**

**Reactivity**

See section 7

**Chemical stability**

- Unstable 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**

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

<table>
<thead>
<tr>
<th>Required Minimum Protection Factor</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
<th>Powered Air Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 5 x ES</td>
<td>Air-line*</td>
<td>A-2</td>
<td>A-PAPR-2 ^</td>
</tr>
<tr>
<td>up to 10 x ES</td>
<td>-</td>
<td>A-3</td>
<td>-</td>
</tr>
<tr>
<td>10+ x ES</td>
<td>-</td>
<td>Air-line**</td>
<td>-</td>
</tr>
</tbody>
</table>

* - Continuous Flow; ** - Continuous-flow or positive pressure demand
^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Respiratory protection not normally required due to the physical form of the product.
**Inhaled**
Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.

**Ingestion**
Accidental ingestion of the material may be damaging to the health of the individual.

**Skin Contact**
Not considered an irritant through normal use.

**Eye**
There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain.

**Chronic**
Principal hazards are accidental eye contact and cleaner overuse. Overuse or obsessive cleaner use may lead to defatting of the skin and may cause irritation, drying, cracking, leading to dermatitis.

**Nano Anti-Bacterial Surface Wipes**

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

**ethanol**

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (rat) LC50: 124.7 mg/l/4H</td>
<td>Eye (rabbit): 500 mg SEVERE</td>
</tr>
<tr>
<td>Oral (rat) LD50: &gt;1501 mg/kg</td>
<td>Eye (rabbit):100mg/24hr-moderate</td>
</tr>
<tr>
<td>Eye: adverse effect observed (irritating)[1]</td>
<td>Skin (rabbit):20 mg/24hr-moderate</td>
</tr>
<tr>
<td>Skin (rabbit):400 mg (open)-mild</td>
<td>Skin: no adverse effect observed (not irritating)[1]</td>
</tr>
</tbody>
</table>

**water**

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: &gt;90000 mg/kg</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**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

**ETHANOL**
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
- Carcinogenicity
- Reproductivity

### Skin Irritation/Corrosion
- Serious Eye Damage/Irritation
- STOT - Single Exposure
- STOT - Repeated Exposure

### Respiratory or Skin sensitisation
- Aspiration Hazard

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

**SECTION 12 Ecological information**

**Toxicity**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**ethanol**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>11-mg/L</td>
<td>2</td>
</tr>
<tr>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>2mg/L</td>
<td>4</td>
</tr>
<tr>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>17.921mg/L</td>
<td>4</td>
</tr>
<tr>
<td>NOEC</td>
<td>2016</td>
<td>Fish</td>
<td>0.000375mg/L</td>
<td>4</td>
</tr>
</tbody>
</table>

**water**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>897.520mg/L</td>
<td>3</td>
</tr>
<tr>
<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:**
Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

For Ethanol:
- log Kow: -0.31 to -0.32;
- Koc 1: Estimated BCF= 3;
- Halflife (hr) air: 144;
- Halflife (hr) H2O surface water: 144;
- Henry’s atm m3 /mol: 6.29E-06;
Environmental Fate: Terrestrial - Ethanol quickly biodegrades in soil but may leach into ground water; most is lost by evaporation. Ethanol is expected to have very high mobility in soil. Volatilization of ethanol from moist soil surfaces is expected to be an important fate process. The potential for volatilization of ethanol from dry soil surfaces may exist. Biodegradation is expected to be an important fate process for ethanol based on half-lives on the order of a few days for ethanol in sandy soil/groundwater microcosms.

Atmospheric Fate: Ethanol is expected to exist solely as a vapour in the ambient atmosphere. Vapour-phase ethanol is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 5 days. Ethanol readily degraded by reaction with photochemically produced hydroxy radicals; release into air will result in photodegradation and wet deposition.

Aquatic Fate: When released into water ethanol readily evaporates and is biodegradable. Ethanol is not expected to adsorb to suspended solids and sediment. Volatilization from water surfaces is expected and volatilization half-lives for a model river and model lake are 3 and 39 days, respectively. Bioconcentration in aquatic organisms is considered to be low. Hydrolysis and photolysis in sunlit surface waters is not expected to be an important environmental fate process for ethanol and is unlikely to be persistent in aquatic environments.

DO NOT discharge into sewer or waterways.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>LOW (Half-life = 2.17 days)</td>
<td>LOW (Half-life = 5.08 days)</td>
</tr>
<tr>
<td>water</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>LOW (LogKOW = -0.31)</td>
</tr>
<tr>
<td>water</td>
<td>LOW (LogKOW = -1.38)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>HIGH (KOC = 1)</td>
</tr>
<tr>
<td>water</td>
<td>LOW (KOC = 14.3)</td>
</tr>
</tbody>
</table>

### SECTION 13 Disposal considerations

**Waste treatment methods**
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.

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. DO NOT deposit the hazardous substance into or onto a landfill or a sewage facility.
- Burning the hazardous substance must happen under controlled conditions with no person or place exposed to (1) a blast overpressure of more than 9 kPa; or (2) an unsafe level of heat radiation.
- The disposed hazardous substance must not come into contact with class 1 or 5 substances.

### SECTION 14 Transport information

**Labels Required**

- Marine Pollutant: NO
- HAZCHEM: 1Z

**Land transport (UN)**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class(es)</th>
<th>Packing group</th>
<th>Environmental hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>3175</td>
<td>SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (contains ethanol)</td>
<td>Class 4.1</td>
<td>II</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Continued...
**Special precautions for user**

<table>
<thead>
<tr>
<th>Special provisions</th>
<th>216; 274</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantity</td>
<td>1 kg</td>
</tr>
</tbody>
</table>

**Air transport (ICAO-IATA / DGR)**

<table>
<thead>
<tr>
<th>UN number</th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Solids containing flammable liquid, n.o.s. * (contains ethanol)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>ICAO/IATA Class 4.1</td>
</tr>
<tr>
<td></td>
<td>ICAO / IATA Subrisk Not Applicable</td>
</tr>
<tr>
<td></td>
<td>ERG Code 3L</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Special precautions for user**

<table>
<thead>
<tr>
<th>Special provisions</th>
<th>A46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo Only Packing Instructions</td>
<td>448</td>
</tr>
<tr>
<td>Cargo Only Maximum Qty / Pack</td>
<td>50 kg</td>
</tr>
<tr>
<td>Passenger and Cargo Packing Instructions</td>
<td>445</td>
</tr>
<tr>
<td>Passenger and Cargo Maximum Qty / Pack</td>
<td>15 kg</td>
</tr>
<tr>
<td>Passenger and Cargo Limited Quantity Packing Instructions</td>
<td>Y441</td>
</tr>
<tr>
<td>Passenger and Cargo Limited Maximum Qty / Pack</td>
<td>5 kg</td>
</tr>
</tbody>
</table>

**Sea transport (IMDG-Code / GGVSee)**

<table>
<thead>
<tr>
<th>UN number</th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (contains ethanol)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>IMDG Class 4.1</td>
</tr>
<tr>
<td></td>
<td>IMDG Subrisk Not Applicable</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Special precautions for user**

<table>
<thead>
<tr>
<th>EMS Number</th>
<th>F-A , S-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Quantities</td>
<td>216 274</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Group Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning Products (Flammable) Group</td>
</tr>
</tbody>
</table>

**ethanol is found on the following regulatory lists**

- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification Data

**water is found on the following regulatory lists**

- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Workplace Exposure Standards (WES)

**Hazardous Substance Location**

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Quantity (Closed Containers)</th>
<th>Quantity (Open Containers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1B</td>
<td>100 L in containers greater than 5 L</td>
<td>50 L</td>
</tr>
<tr>
<td></td>
<td>250 L in containers up to and including 5 L</td>
<td>50 L</td>
</tr>
</tbody>
</table>

**Certified Handler**

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

<table>
<thead>
<tr>
<th>Class of substance</th>
<th>Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1B</td>
<td>250 L (when in containers greater than 5 L)</td>
</tr>
</tbody>
</table>
### Class of substance

<table>
<thead>
<tr>
<th>Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 L (when in containers up to and including 5 L)</td>
</tr>
</tbody>
</table>

Refer Group Standards for further information

### Tracking Requirements

- Not Applicable

### National Inventory Status

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AIIC</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia Non-Industrial Use</td>
<td>No (ethanol; water)</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>No (ethanol; water)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>Yes</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan - TCSI</td>
<td>Yes</td>
</tr>
<tr>
<td>Mexico - INSQ</td>
<td>Yes</td>
</tr>
<tr>
<td>Vietnam - NCI</td>
<td>Yes</td>
</tr>
<tr>
<td>Russia - ARIPS</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Legend:**
- Yes = All CAS declared ingredients are on the inventory
- No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

### SECTION 16 Other information

- **Revision Date:** 25/01/2021
- **Initial Date:** 04/05/2020

### SDS Version Summary

<table>
<thead>
<tr>
<th>Version</th>
<th>Issue Date</th>
<th>Sections Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1.1</td>
<td>25/01/2021</td>
<td>Replaces Chemwatch SDS 5381-36, Synonyms</td>
</tr>
</tbody>
</table>

**Other information**

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

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.