**Safety Data Sheet**

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<table>
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<tr>
<th>Document group:</th>
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<tr>
<td>07-6198-1</td>
<td>2.00</td>
<td>24/05/2018</td>
<td>27/02/2013</td>
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</tbody>
</table>

This Safety Data Sheet has been prepared in accordance with the New Zealand, Hazardous Substances (Safety Data Sheets) Notice 2017.

### SECTION 1: Identification

1.1. Product identifier
FT-31, Denatonium Benzoate Sensitivity Solution

Product Identification Numbers
70-0707-0965-7

1.2. Recommended use and restrictions on use

Recommended use
Sensitivity Test Solution.

1.3. Supplier’s details
Address: 3M New Zealand Ltd, 94 Apollo Drive, Rosedale 0632, Auckland

Telephone: (09) 477 4040
E Mail: innovation@nz.mmm.com
Website: 3m.co.nz

1.4. Emergency telephone number
24 hr Medical Emergency,  National Poisons Centre, 0800 764 766 (0800 POISON)

### SECTION 2: Hazard identification

Not classified as hazardous in accordance with the relevant criteria of the HSNO Act 1996, the Hazardous Substances (Classification) Notice 2017 and Hazardous Substances (Minimum Degrees of Hazard) Notice 2017.
Not Classified as a Dangerous Good according to NZS 5433:2012 Transport of Dangerous Goods on Land, UN, IMDG & IATA

2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>GHS</th>
<th>HSNO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified as hazardous</td>
<td>Not classified as hazardous</td>
</tr>
</tbody>
</table>
2.2. Label elements
Not applicable.
Not applicable.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Nbr</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>80 - 100</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>3 - 7</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>0 - 1</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures

**Inhalation**
Remove person to fresh air. If you feel unwell, get medical attention.

**Skin contact**
No need for first aid is anticipated.

**Eye contact**
No need for first aid is anticipated.

**If swallowed**
No need for first aid is anticipated.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1 Information on toxicological effects

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Observe precautions from other sections.

6.2. Environmental precautions
Avoid release to the environment.
6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

Refer to Section 15: HSNO Controls for more information.

7.1. Precautions for safe handling
For industrial or professional use only. Do not eat, drink or smoke when using this product. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

7.3. Certified handler
Not required

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

8.2. Exposure controls

8.2.1. Engineering controls
No engineering controls required.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
None required.

Skin/hand protection
No protective gloves required.

Respiratory protection
None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Liquid.

Appearance/Odour
Clear, odourless solution with a bitter taste. Freezing point = -4 degrees Centigrade

Odour threshold
No data available.

pH
± 6.52 Units not available or not applicable.
**SECTION 10: Stability and reactivity**

10.1 Reactivity
This material is considered to be non reactive under normal use conditions

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
None known.

10.5 Incompatible materials
None known.

10.6 Hazardous decomposition products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>None known.</td>
<td>Not specified.</td>
</tr>
</tbody>
</table>

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1 Information on Toxicological effects

**Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:
**Inhalation**
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

**Skin contact**
Contact with the skin during product use is not expected to result in significant irritation.

**Eye contact**
Contact with the eyes during product use is not expected to result in significant irritation.

**Ingestion**
No known health effects.

**Toxicological Data**
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

### Acute Toxicity

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall product</td>
<td>Ingestion</td>
<td>No data available; calculated ATE &gt;5,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 10,000 mg/kg</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>Inhalation-Dust/Mist (4 hours)</td>
<td>Rat</td>
<td>LC50 &gt; 10.5 mg/l</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 = 3,550 mg/kg</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Inhalation-Dust/Mist</td>
<td>Rat</td>
<td>LC50 estimated to be 1 - 5 mg/l</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Dermal</td>
<td>Rat</td>
<td>LD50 &gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 = 584 mg/kg</td>
</tr>
</tbody>
</table>

ATE = acute toxicity estimate

### Skin Corrosion/Irritation

<table>
<thead>
<tr>
<th>Name</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Rabbit</td>
<td>No significant irritation</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Rabbit</td>
<td>Mild irritant</td>
</tr>
</tbody>
</table>

### Serious Eye Damage/Irritation

<table>
<thead>
<tr>
<th>Name</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Rabbit</td>
<td>Mild irritant</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Rabbit</td>
<td>Corrosive</td>
</tr>
</tbody>
</table>

### Skin Sensitisation

<table>
<thead>
<tr>
<th>Name</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall product</td>
<td>Guinea pig</td>
<td>Not classified</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Human</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

### Respiratory Sensitisation

<table>
<thead>
<tr>
<th>Name</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denatonium benzoate</td>
<td>Human</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

### Germ Cell Mutagenicity

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
</table>
Some positive data exist, but the data are not sufficient for classification.

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**
For the component/components, either no data are currently available or the data are not sufficient for classification.

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**
For the component/components, either no data are currently available or the data are not sufficient for classification.

**Specific Target Organ Toxicity - repeated exposure**

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Target Organ(s)</th>
<th>Value</th>
<th>Species</th>
<th>Test result</th>
<th>Exposure Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>Ingestion</td>
<td>blood</td>
<td>kidney and/or bladder</td>
<td>vascular system</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>Ingestion</td>
<td>nervous system</td>
<td>eyes</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
<td>NOAEL 1,700 mg/kg/day</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>Ingestion</td>
<td>liver</td>
<td>respiratory system</td>
<td>Not classified</td>
<td>Rat</td>
<td>NOAEL 33 mg/kg/day</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>Ingestion</td>
<td>endocrine system</td>
<td>heart</td>
<td>bone, teeth, nails, and/or hair</td>
<td>hematopoietic system</td>
<td>liver</td>
</tr>
</tbody>
</table>

**Aspiration Hazard**
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.
12.1. Toxicity

No product test data available.

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS Number</th>
<th>Organism</th>
<th>Type</th>
<th>Exposure</th>
<th>Test endpoint</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Algae other</td>
<td>Experimental</td>
<td>96 hours</td>
<td>EC50</td>
<td>2,430 mg/l</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Bluegill</td>
<td>Experimental</td>
<td>96 hours</td>
<td>LC50</td>
<td>5,840 mg/l</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Water flea</td>
<td>Experimental</td>
<td>48 hours</td>
<td>LC50</td>
<td>874 mg/l</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Fathead minnow</td>
<td>Experimental</td>
<td>33 days</td>
<td>NOEC</td>
<td>252 mg/l</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Water flea</td>
<td>Experimental</td>
<td>21 days</td>
<td>NOEC</td>
<td>314 mg/l</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Crustacea</td>
<td>Experimental</td>
<td>96 hours</td>
<td>LC50</td>
<td>400 mg/l</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Green algae</td>
<td>Experimental</td>
<td>72 hours</td>
<td>EC50</td>
<td>282 mg/l</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Water flea</td>
<td>Experimental</td>
<td>48 hours</td>
<td>EC50</td>
<td>&gt;500 mg/l</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Zebra Fish</td>
<td>Experimental</td>
<td>96 hours</td>
<td>LC50</td>
<td>&gt;100 mg/l</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS Number</th>
<th>Test type</th>
<th>Duration</th>
<th>Study Type</th>
<th>Test result</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Data not available or insufficient</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Experimental Biodegradation</td>
<td>28 days</td>
<td>BOD</td>
<td>18.17 % weight</td>
<td>OECD 301F - Manometric respirometry</td>
</tr>
</tbody>
</table>

12.3 : Bioaccumulative potential

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS Number</th>
<th>Test type</th>
<th>Duration</th>
<th>Study Type</th>
<th>Test result</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>Data not available or insufficient for classification</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Denatonium benzoate</td>
<td>3734-33-6</td>
<td>Experimental Bioconcentratio</td>
<td>Log Kow</td>
<td>2.2</td>
<td>Other methods</td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

Please contact manufacturer for more details

12.5 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Disposal methods
In accordance with the Hazardous Substances (Disposal) Notice 2017 and the relevant criteria of the HSNO Act 1996.

Product components have been assessed to be treatable in properly operating wastewater treatment systems (industrial, municipal, commercial) with a minimum of biological (aerobic) secondary treatment. Waste product may be directly discharged to wastewater treatment systems. Changes in the manner of which a product is used will require an evaluation to determine proper disposal. Empty and clean product containers may be disposed as non-hazardous waste. Consult your specific regulations and service providers to determine available options and requirements.

Packaging (that may or may not contain any residual substance) may be lawfully disposed of by householders or other consumers through public or commercial waste collection services.

**SECTION 14: Transport Information**

**New Zealand Land Transport Rule: Dangerous Goods - Road/Rail Transport**

UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

Hazchem Code: Not applicable.
IERG: Not applicable.

**International Air Transport Association (IATA) - Air Transport**

UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

**International Maritime Dangerous Goods Code (IMDG) - Marine Transport**

UN No.: Not applicable.
Proper Shipping Name: Not applicable.
Class/Division: Not applicable.
Sub Risk: Not applicable.
Packing Group: Not applicable.

Marine Pollutant: Not applicable.

**SECTION 15: Regulatory information**

HSNO Approval number Not applicable
Group standard name Not applicable
HSNO Hazard classification Refer to Section 2: Hazard identification

**NZ Inventory of Chemicals (NZIoC) Status**

All applicable chemical ingredients in this material are in compliance with NZIoC listing requirements.

**Controls in accordance with the Health and Safety at Work (Hazardous Substances) Regulations 2017**

Certified handler Not required
Location Compliance Certificate Not required
Hazardous atmosphere zone Not required
Fire extinguishers Not required
Emergency response plan Not required
**FT-31, Denatonium Benzoate Sensitivity Solution**

Secondary containment  Not required
Tracking  Not required
Warning signage  Not required

**SECTION 16: Other information**

Revision information:
Complete document review.

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</tbody>
</table>

**Key to abbreviations and acronyms**

GHS  means the Globally Harmonised System of Classification and Labelling of Chemicals, 5th revised edition 2013
HSNO  means Hazardous Substances and New Organisms Act 1996

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