1. Identification of Substance & Company

<table>
<thead>
<tr>
<th>Product</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Dricon OxiTone™ Dark Brown/Light Brown</td>
</tr>
<tr>
<td>Other names</td>
<td>Synthetic Iron Oxide Brown Pigments</td>
</tr>
<tr>
<td>Product code</td>
<td>NA</td>
</tr>
<tr>
<td>HSNO approval</td>
<td>non hazardous</td>
</tr>
<tr>
<td>Approval description</td>
<td>NA</td>
</tr>
<tr>
<td>UN number</td>
<td>NA</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>NA</td>
</tr>
<tr>
<td>Packaging group</td>
<td>NA</td>
</tr>
<tr>
<td>Hazchem code</td>
<td>NA</td>
</tr>
<tr>
<td>Uses</td>
<td>Colourant for cement based products</td>
</tr>
</tbody>
</table>

Company Details

| Company                        | Dricon Firth Industries                                         |
| Address                        | 585 Great South Rd, Penrose                                     |
|                                | PO Box 99904, Newmarket, 1149                                   |
|                                | Auckland, New Zealand                                           |
| Telephone                      | +64-9- 583 2100                                                  |
| Website                        | www.dricon.co.nz                                                |

Emergency Telephone Number: 0800-764 766

2. Hazard Identification

Approval
This product has been assessed as not hazardous under the Hazardous Substances and New Organisms Act (HSNO).

Classes

Hazard Statement

none

SYMBOLS

None

Other Classifications
There are no other classifications that are known to apply.

NOTE: Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Precautionary Statements

none

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS/ Identification</th>
<th>Conc (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Iron Oxide</td>
<td>12227-89-3 or 1317-61-9</td>
<td>5-60%</td>
</tr>
<tr>
<td>Yellow Iron Oxide</td>
<td>51274-00-1</td>
<td>5-75%</td>
</tr>
<tr>
<td>Red Iron Oxide</td>
<td>1332-37-2</td>
<td>5-75%</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
If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).

Recommended first aid facilities
Ready access to running water is recommended.
### 5. Firefighting Measures

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

**Suitable extinguishing substances:** Not applicable.

**Unsuitable extinguishing substances:** Unknown.

**Products of combustion:** Product does not burn. Dust may form irritating atmosphere. Product will react exothermically with water. Product may decompose in a fire and produce toxic or corrosive fumes.

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

**Hazchem code:** NA

### 6. Accidental Release Measures

**Containment**
- There is no current legal requirement for containment of this product.
- Generally, the containers size will limit a large spill from occurring.
- If a significant spill occurs:
  - Stop leak if safe or necessary. Isolate area. Collect spill, see below. Transfer to container for disposal. Dispose of according to guidelines below (Section 13).

**Emergency procedures**
- Generally, the containers size will limit a large spill from occurring.
- Transfer to container for disposal. Dispose of according to guidelines below (Section 13).

**Clean-up method**
- This product is not considered flammable or ecotoxic. Small spills do not require any special clean up method. Larger spills (e.g., greater than 10kg) should be mopped up and collected.

**Disposal**
- Avoid the generation of dust. Sweep up carefully or vacuum. 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**
- No special protective clothing is normally necessary.

### 7. Storage & Handling

**Storage**
- Avoid storage of harmful substances with food. Containers should be kept closed in order to minimise contamination. Avoid contact with incompatible substances as listed in Section 10.

**Handling**
- Keep exposure to a minimum, and minimise the quantities kept in work areas. Avoid creation of dusts. See section 8 with regard to personal protective equipment requirements.

### 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-STEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>iron oxides</td>
<td>5mg/m³ (as Fe)</td>
<td>data unavailable</td>
<td></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 airborne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes
Protective eyewear is not normally necessary when using this product. However, it always prudent to use protective eyewear if dust is likely.

Skin
Protective gloves and clothing are not normally necessary. However, it is prudent to wear gloves when handling chemicals in bulk or for an extended period of time.

Respiratory
Respirator is not required under normal use. Ensure adequate natural ventilation. If product is being used in confined conditions and dust formation is likely, the use of a particulate mask or respirator is recommended.

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>Brown coloured fine powder/dust</td>
</tr>
<tr>
<td>Odour</td>
<td>no odour</td>
</tr>
<tr>
<td>pH</td>
<td>3-6 (typically)</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>&gt;1000°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>insoluble in water</td>
</tr>
<tr>
<td>Specific gravity / density</td>
<td>4.8g/ml @ 20°C</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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to be avoided</td>
<td>Containers should be kept closed in order to avoid contamination. Keep from extreme heat, open flames and direct sunlight.</td>
</tr>
<tr>
<td>Incompatible groups</td>
<td>Strong acids.</td>
</tr>
<tr>
<td>Substance Specific</td>
<td>None known</td>
</tr>
<tr>
<td>Incompatibility</td>
<td></td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Some toxic or irritating fumes may be released during thermal decomposition (e.g. fire)</td>
</tr>
</tbody>
</table>
| Hazardous reactions             | At >60°C black iron oxide may decompose to Fe₂O₃ in an exothermic reaction.  
                                | At >180°C Yellow iron oxide may lose water of hydration to form Fe₂O₃. |

11. Toxicological Information

Summary
IF SWALLOWED: Ingestion of this product may cause gastrointestinal irritation.
IF IN EYES: Eye contact may cause mechanical irritation. May result in mild abrasion.
IF ON SKIN: May cause abrasive irritation in contact with the skin, resulting in redness and itching. Prolonged or repeated skin contact may cause irritation.
IF INHALED: Exposure to Iron Oxide (Dust and Fume) can cause metal fume fever. This is a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness and cough. Inhalation may cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.
Supporting Data

Acute

Oral
Using LD$_{50}$’s for ingredients, the calculated LD$_{50}$ (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: Iron (III) Oxide >10000mg/kg (rat).

Dermal
Using LD$_{50}$’s for ingredients, the calculated LD$_{50}$ (dermal, rat) for the mixture is >5000 mg/kg. Data considered includes: Iron (III) Oxide LDLo 30mg/kg (dog)

Inhaled
No evidence of acute inhalation toxicity.

Eye
The mixture is not considered to be an eye irritant. Any irritation may be due to mechanical irritation of the particles.

Skin
The mixture is not considered to be a skin irritant under HSNO.

Chronic

Sensitisation
No ingredient present at concentrations > 0.1% is considered a sensitizer.

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

Carcinogenicity
Iron Oxides are not considered carcinogenic.

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

Systemic
No ingredient present at concentrations > 1% is considered a target organ toxicant.

Aggravation of existing conditions
None known.

12. Ecological Data

Summary
This mixture is not considered ecotoxic.

Supporting Data

Aquatic
No evidence of aquatic ecotoxicity. Estimated EC$_{50}$ of the mixture is >100mg/L.

Bioaccumulation
No data

Degradability
No data

Soil
No evidence of soil ecotoxicity.

Terrestrial vertebrate
No evidence of toxicity towards terrestrial vertebrates.

Terrestrial invertebrate
No evidence of toxicity 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.

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 hazardous 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

There are no specific restrictions for this product (not a dangerous good).

UN number: NA
Class(es): NA
Precautions: NA
Proper shipping name: NA
Packing group: NA
Hazchem code: 1T (recommended)
15. Regulatory Information

This product is not considered hazardous under the Hazardous Substances and New Organisms Act (HSNO).

Specific Controls

Key workplace requirements are:

- SDS Not required.
- Inventory An inventory of all hazardous substances must be prepared and maintained.
- Labelling No removal of labels and/or decanting of product into other containers can occur.
- Emergency plan Not required.
- Certified handler Not required.
- Tracking Not required.
- Bunding and secondary containment Not required.
- Signage Not required.
- Location compliance certificate Not required.
- Flammable zone Not required.
- Fire extinguisher Not required.

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

Abbreviations

- Approval Code NA
- CAS Number Unique Chemical Abstracts Service Registry Number
- Ceiling Ceiling Exposure Value: The maximum airborne concentration of a biological or chemical agent to which a worker may be exposed at any time.
- Controls Matrix List of default controls linking regulation numbers to Matrix code (e.g. T1, I16).
- EC50 Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
- EPA Environmental Protection Authority (New Zealand)
- HAZCHEM Code Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
- HSNO Hazardous Substances and New Organisms (Act and Regulations)
- IARC International Agency for Research on Cancer
- LEL Lower Explosive Limit
- LD50 Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
- LC50 Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats).
- MSDS (SDS) Material Safety Data Sheet (or Safety Data Sheet)
- PES Prescribed Exposure Standard means a WES or a biological exposure standard that is prescribed in a regulation, a safe work instrument or an approval under HSNO (including group standards).
- STEL 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
- TWA Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
- UEL Upper Explosive Limit
- UN Number United Nations Number
- WES 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.
<table>
<thead>
<tr>
<th>References</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).</td>
</tr>
<tr>
<td>Other References:</td>
<td>EU ECHA, Ingredients SDS’s, ChemIDplus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Reason for Review</td>
</tr>
<tr>
<td>June 2018</td>
<td>NA – new SDS</td>
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</tbody>
</table>

**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, are based on our experience, EPA Guidelines and international classifications. A compliance record is available on request. 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: (09) 940 30 80.