

1. Identification of Substance & Company

Product

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|----------------------|--|
| Product name | Ice Machine Cleaner |
| Product code | IMC |
| HSNO approval | HSR002526 |
| Approval description | Cleaning Products (Corrosive) Group Standard 2020 |
| UN number | 1760 |
| DG class | 8 |
| Proper Shipping Name | CORROSIVE LIQUID, N.O.S., (Lactic acid, citric acid) |
| Packaging group | III |
| Hazchem code | 2X |
| Uses | Ice machine cleaner |

Company Details

| | |
|-----------|---|
| Company | GreenEarth Solutions Ltd |
| Address | PO Box 64-125 Botany Auckland 2163 New Zealand |
| Telephone | 0064 9 272 4141 |
| Email | mail@greeneearth.co.nz |
| Website | www.greeneearth.co.nz |

Emergency Telephone Number: 09 272 4141

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002526, Cleaning Products (Corrosive) Group Standard 2020). The substance has been classified as hazardous according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020.

| Classes | Hazard Statements |
|----------------------------------|---|
| Eye damage category 1 | H318 - Causes serious eye damage. |
| Skin corrosive category 1C | H314 - Causes severe skin burns and eye damage. |
| STOT* single exposure category 3 | H335 - May cause respiratory irritation. |

*STOT – System Target Organ Toxicity

SYMBOLS

DANGER



Other Classifications

There are no other classifications that are known to apply.

Precautionary Statements

| | |
|------------|---|
| Prevention | 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. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/eye protection/face protection. |
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| Response | <p>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310 - Immediately call a POISON CENTRE or doctor/physician.</p> <p>P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>P363 - Wash contaminated clothing before reuse.</p> <p>P310 - Immediately call a POISON CENTRE or doctor/physician.</p> <p>P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.</p> |
| Storage | P405 - Store locked up |
| Disposal | <p>P403+P233 - Store in a well-ventilated place. Keep container tightly closed.</p> <p>P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.</p> |

3. Composition / Information on Ingredients

| Component | CAS/ Identification | Conc (%) |
|-------------|---------------------|----------|
| water | 7732-18-5 | 80% |
| citric acid | 77-92-9 | 10% |
| lactic acid | 50-21-5 | 10% |

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 burned or irritated 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 required. Accessible eyewash is required.

Exposure

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|---------------------|---|
| Swallowed | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| Eye contact | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician. |
| Skin contact | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTRE or doctor/physician. |
| Inhaled | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. |

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

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|---|---|
| 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, fog sprays. |
| 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: | 2X |

6. Accidental Release Measures

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|-----------------------------|--|
| Containment | If greater than 10000L 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. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. 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

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|-----------------|--|
| 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. Containers (and outer packaging) must bear the prescribed labelling, including the Hazchem code, UN number, Corrosivity warning and name of contents. |
| 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. |

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.

| NZ Workplace Exposure Std | Ingredient | WES-TWA* | WES-STEL |
|---------------------------|----------------------|----------|----------|
| | No ingredient listed | | |

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. |
| Skin |  | Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves. Nitrile or rubber gloves are recommended. Replace frequently. Gloves should be checked for tears or holes before use. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. |



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Respiratory

A respirator when airborne concentrations approach the WES (section 8). Use a respirator with a organic vapour cartridge. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

| | |
|--------------------------------|------------------|
| Appearance | clear liquid |
| Odour | slight odour |
| pH | no data |
| Vapour pressure | no data |
| Viscosity | no data |
| Boiling point | ~100°C |
| Volatile materials | no data |
| Freezing / melting point | no data |
| Solubility | soluble in water |
| Specific gravity / density | ~1.0g/ml |
| Flash point | not applicable |
| Danger of explosion | not explosive |
| Auto-ignition temperature | no data |
| Upper & lower flammable limits | no data |
| Corrosiveness | corrosive |

10. Stability & Reactivity

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|------------------------------------|---|
| 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 | Strong bases, strong oxidisers |
| Substance Specific Incompatibility | none known |
| Hazardous decomposition products | Oxides of carbon |
| Hazardous reactions | none known |

11. Toxicological Information

Summary

IF SWALLOWED: may cause irritation of the mouth and throat.

IF IN EYES: may cause eye damage.

IF ON SKIN: may cause burns to the skin.

IF INHALED: vapours may cause respiratory irritation.

Supporting Data

| | | |
|---------|---|---|
| Acute | Oral | Using LD ₅₀ 's for ingredients, the calculated LD ₅₀ (oral, rat) for the mixture is >2,000 mg/kg. Data considered includes: Citric acid 5040mg/kg (mouse), 3000mg/kg (rat), Lactic acid 1810mg/kg (guinea pig). |
| | Dermal | No evidence of dermal toxicity. |
| | Inhaled | No evidence of acute inhalation toxicity. |
| | Eye | The mixture is considered to be corrosive to the eye, because some of the ingredients (lactic and citric acid) present at >3% are considered eye corrosives. |
| Chronic | Skin | The mixture is considered to be corrosive to the skin, because some of the ingredients (lactic and citric acid) present at >5% are considered skin corrosives. |
| | 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 | 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 developmental toxicant or have any effects on or via lactation. |
| | Systemic Aggravation of existing conditions | No ingredient present at concentrations > 1% is considered a target organ toxicant. None known. |

12. Ecological Data

Summary

This mixture is not considered ecotoxic.

Supporting Data

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| Aquatic | Using EC ₅₀ 's for ingredients, the calculated EC ₅₀ for the mixture is > 100 mg/L. Data considered includes: Citric acid 1516mg/L (96hr, fish), >440-760 mg/L (96hr, fish), ~120mg/l (72hr, Daphnia magna). |
| Bioaccumulation | No data |
| Degradability | No data |
| Soil | No evidence of soil toxicity. |
| Terrestrial vertebrate | This mixture is not considered harmful towards terrestrial vertebrates, see acute toxicity. |
| Terrestrial invertebrate | No evidence of toxicity towards terrestrial invertebrates. |
| Biocidal | no data |
| Environmental effect levels | No EELs are available for this mixture or ingredients |

13. Disposal Considerations

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| 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

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

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

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|---------------------|------------------|------------------------------|--|
| UN number: | 1760 | Proper shipping name: | CORROSIVE LIQUID, N.O.S., (Lactic acid, citric acid) |
| Class(es) | 8 | Packing group: | III |
| Precautions: | Corrosive liquid | Hazchem code: | 2X |

IMDG

| | | | |
|---------------------|------------------|------------------------------|--|
| UN number: | 1760 | Proper shipping name: | CORROSIVE LIQUID, N.O.S., (Lactic acid, citric acid) |
| Class(es) | 8 | Packing group: | III |
| Precautions: | Corrosive liquid | EmS | F-A, S-B |

IATA

| | | | |
|---------------------|------------------|------------------------------|--|
| UN number: | 1760 | Proper shipping name: | CORROSIVE LIQUID, N.O.S., (Lactic acid, citric acid) |
| Class(es) | 8 | Packing group: | III |
| Precautions: | Corrosive liquid | ERG Guide | 154 |

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002526, Cleaning Products (Corrosive) Group Standard 2020. All ingredients appear on the NZIoC.

Specific Controls

Key workplace requirements are:

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| 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 > 10000L is stored. |
| Certified handler | Not required. |
| Tracking | Not required. |
| Bunding & secondary containment | Required if > 10000L is stored. |
| Signage | Required if > 1000L is stored. |
| Location test 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 | Approval HSR002526, Cleaning Products (Corrosive) Group Standard 2020 Controls, EPA. www.epa.govt.nz |
| CAS Number | Unique Chemical Abstracts Service Registry Number |
| 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) |
| GHS | Globally Harmonised System of Classification and Labelling of Chemicals, 7 th revised edition, 2017, published by the United Nations. |
| 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) |
| NZIoC | New Zealand Inventory of Chemicals |
| 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 |
| STOT RE | System Target Organ Toxicity – Repeated Exposure |
| STOT SE | System Target Organ Toxicity – Single Exposure |
| TWA | Time Weighted Average – generally referred to as 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. |



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Safety Data Sheet

References

| | |
|--------------------------|---|
| Data | Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID). |
| Controls | EPA notices, www.epa.govt.nz , Health and Safety at Work (Hazardous Substances) Regulations 2017, www.legislation.govt.nz |
| WES | The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz . |
| Other References: | EU ECHA, ingredients SDS's, ChemIDplus |

Review

| Date | Reason for review |
|---------------|---|
| August 2017 | Not applicable – new SDS |
| December 2017 | Change of class 6.9 (respiratory irritation) to 6.1E (respiratory irritation) |
| March 2022 | 5 yearly update |

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 GHS 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 21 1040951**.

