



1. Identification of Substance & Company

Product

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|-----------------------------|---|
| Product name | Trichloroisocyanuric acid |
| Other names | Neo-Chlor 90 (powder), 1,3,5-Trichloro-1,3,5-triazine-2,4,6(1H,3H,5H)-trione |
| Product codes | Not assigned |
| HSNO approval | HSR006483 |
| Approval description | Oxidising Liquids and Solids Group Standard 2020 |
| UN number | 2468 |
| DG class | 5.1 |
| Proper Shipping Name | Trichloroisocyanuric Acid Dry |
| Packaging group | II |
| Hazchem code | 1WE |
| Uses | For the control of algae and bacteria in swimming pools |

Company Details

| | |
|-------------------------|---|
| Company | Argo International Ltd |
| Physical Address | 9 St Benedicts St, Eden Terrace, Auckland |
| Telephone | +64 9 377 5061 |
| Fax | +64 9 309 1992 |
| Email | argo@argoint.co.nz |

Emergency Telephone Number: 0800 764 766 (National Poison Centre)

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR006483, Oxidising Liquids and Solids Group Standard 2020): The substance has been classified as hazardous according to the criteria in the Hazardous substances (Hazard Classification) Notice 2020.

GHS 7 Classes

Oxidising solid cat 2
Acute toxicity cat 4 (oral)
Skin irritation cat 2
Eye damage cat 1
Aquatic acute cat 1
Aquatic chronic cat 1

Hazard Statements

H270 - May intensify fire; oxidizer.
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

SYMBOLS



HSNO Classes

5.1.1B (solid)
6.1D (oral)
6.3A
8.3A
9.1A (acute)
9.1A (chronic)

Hazard Statements

H270 - May intensify fire; oxidizer.
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.



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.
P210 - Keep away from heat. No smoking.
P220 - Keep/Store away from clothing/combustible materials.
P221 - Take any precaution to avoid mixing with combustibles.
P261 - Avoid breathing mist/vapours.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection.
- P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P330 - Rinse mouth.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTRE or doctor/physician.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P332+P313 - If skin irritation occurs: Get medical advice/ attention.
P362 - Take off contaminated clothing and wash before re-use.
P391 - Collect spillage.
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

| Component | CAS/ Identification | Concentration |
|---------------------------|---------------------|---------------|
| Trichloroisocyanuric Acid | 87-90-1 | 100% |

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, 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

- Swallowed** IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Give a glass of water to drink.
- 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: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before re-use.
- Inhaled** Generally, inhalation of fumes/vapours/dusts is unlikely to result in adverse health effects. If coughing, dizziness or shortness of breath is experienced, remove the patient to fresh air immediately. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor.

Advice to Doctor

Treat symptomatically



5. Firefighting Measures

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| Fire and explosion hazards: | This product is an oxidiser. Oxidising materials can increase the intensity of fire. Fire decomposition products may be toxic if inhaled. |
| Suitable extinguishing substances: | Carbon dioxide, extinguishing powder, foam, fog sprays, water jets. |
| Unsuitable extinguishing substances: | Unknown. |
| Products of combustion: | Chlorine, chlorine compounds, oxides of nitrogen, hydrogen cyanide, carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. 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: | 1WE |

6. Accidental Release Measures

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|-----------------------------|---|
| Containment | If greater than 100kg 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 | Not applicable |
| 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. Store locked up. Store in a cool ventilated place. Containers should be kept closed in order to minimise contamination. Keep from extreme heat, sunlight and open flames. Avoid contact with incompatible substances as listed in Section 10. Location compliance certificates must be available if storing >500kg (closed), 50kg (open). Containers (and outer packaging) must bear the prescribed labelling, including the Hazchem code, UN number, flammability 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 dust. |

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 Stds | Ingredient | WES-TWA* | WES-STEL |
|----------------------------|---------------------------|------------------------------|----------------------------|
| | Trichloroisocyanuric Acid | NA | NA |
| | Chlorine | 0.5ppm, 1.5mg/m ³ | 1ppm, 2.9mg/m ³ |

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

General

Personal Protective Equipment (PPE) should not be used as the primary means of exposure protection, except in the event of an accident or emergency situation or where all other means of protection have proven to inadequate.

Clean PPE after use or dispose of as appropriate. Store PPE for re-use in a clean place. Regular training on the correct use of PPE should be provided. In particular the correct fitting and use of respirators and where applicable the cleaning of respirators should be undertaken.

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. 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 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

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|---|---|
| Appearance | White granules or tablets |
| Odour | Sharp Chlorine-bleach odour |
| pH | 2.8 (1% in water) |
| Vapour pressure | no data |
| Viscosity | no data |
| Boiling point | no data |
| Volatile materials | Negligible at normal ambient temperatures |
| Freezing / melting point | Decomposes about 225°C before melting |
| Solubility | 1.28% at 25°C. |
| Specific gravity / density | 1.04kg/m ³ (bulk density), 2.07 (specific gravity) |
| Flash point | no data |
| Danger of explosion | no data |
| Auto-ignition temperature | no data |
| Upper & lower flammable limits | no data |
| Corrosiveness | Corrosive to eyes |

10. Stability & Reactivity

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|---|---|
| Stability | Stable |
| Conditions to be avoided | Oxidising substance - keep away from sources of ignition and flammable materials (see below). |
| Incompatible groups | Reducing agents, combustible materials, flammable substances, other substances that are readily oxidised |
| Substance Specific Incompatibility | none known |
| Hazardous decomposition products | Combustion forms carbon dioxide, and if incomplete, carbon monoxide and smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form hydrogen chloride gas, other compounds of chlorine. |
| Hazardous reactions | none known |



11. Toxicological Information

Summary

IF SWALLOWED: irritation of the mouth, throat and gastrointestinal tract. Harmful if swallowed. May cause a burning sensation in the mouth and throat.

IF IN EYES: may cause stinging, reddening and watering of the eyes. Lengthy exposures or delayed treatment may cause permanent eye damage.

IF ON SKIN: may cause irritation. Symptoms may include, itchiness and reddening of the skin.

IF INHALED: dust may be irritating to the respiratory tract. Symptoms may include headaches, irritation of the nose and throat and increased secretion of mucous.

Supporting Data

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|----------------|--|--|
| Acute | Oral | Using LD ₅₀ 's for ingredients, the Acute Toxicity Estimate (ATE) (oral) for the mixture is between 300 and 2000 mg/kg. Data considered includes: Trichloroisocyanuric Acid 406mg/kg (rat). |
| | Dermal | Using LD ₅₀ 's for ingredients, the Acute Toxicity Estimate (ATE) (dermal) for the mixture is >2000 mg/kg. |
| | Inhaled | Using LD ₅₀ 's for ingredients, the Acute Toxicity Estimate (ATE) (inhalation) for the mixture is >5mg/L/4h. |
| | Eye | The mixture is considered to be corrosive to the eye, because some of the ingredients (Trichloroisocyanuric Acid) present at >3% are considered eye corrosives. |
| | Skin | The mixture is considered to be a skin irritant, because some of the ingredients (Trichloroisocyanuric Acid) present are considered skin irritants in more concentrated form. |
| 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 | 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 substance is considered very toxic towards aquatic organisms with long lasting effects, harmful in the soil environment and toxic towards terrestrial vertebrates.

Supporting Data

| | |
|------------------------------------|--|
| Aquatic | Using EC ₅₀ 's for ingredients, the calculated EC ₅₀ for the mixture is <1mg/L. Data considered includes: Trichloroisocyanuric Acid LC ₅₀ : 0.08mg/L (static, 96hr, rainbow trout), 0.17mg/L (static, 48hr, Daphnia magna), Log Pow = 0.9, BCF: NA, toxic to aquatic organisms after decomposition in water (to form chlorine). 0.05mg/L toxic to fish. |
| Bioaccumulation | Log Pow = 0.9 |
| Degradability | No data |
| Soil | EPA has classified the substance as slightly harmful to the soil environment, with a soil ecotoxicity value between 10 and 100 mg/kg and a soil DT50 value of ≤ 30 days. |
| Terrestrial vertebrate | The mixture has been classified by EPA as ecotoxic to terrestrial vertebrates. Using the LD ₅₀ 's for ingredients, the calculated LD ₅₀ (oral, rat) for the mixture is between 50 and 500 mg/kg. Data considered includes: Trichloroisocyanuric Acid 406mg/kg (rat). |
| 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 |



Trichloroisocyanuric acid

Safety Data Sheet

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.

| | | | |
|---------------------|-----------|------------------------------|-------------------------------|
| UN number: | 2468 | Proper shipping name: | Trichloroisocyanuric Acid Dry |
| Class(es) | 5.1 | Packing group: | II |
| Precautions: | Ecotoxic. | Hazchem code: | 1WE |

IMDG

| | | | |
|---------------------|-----------|------------------------------|-------------------------------|
| UN number: | 2468 | Proper shipping name: | Trichloroisocyanuric Acid Dry |
| Class(es) | 5.1 | Packing group: | II |
| Precautions: | Ecotoxic. | EMS code | F-A, S-Q |

IATA

| | | | |
|---------------------|-----------|------------------------------|-------------------------------|
| UN number: | 2468 | Proper shipping name: | Trichloroisocyanuric Acid Dry |
| Class(es) | 5.1 | Packing group: | II |
| Precautions: | Ecotoxic. | Guide no. | 140 |

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR006483, Oxidising Liquids and Solids Group Standard 2020. All ingredients appear on the New Zealand Inventory of Chemicals NZIoC.

Specific Controls

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 > 100kg is stored. |
| Certified handler | Not required. |
| Tracking | Not required. |
| Bunding & secondary containment | Required if > 100kg is stored. |
| Signage | Required if > 100kg is stored. |
| Location compliance certificate | Required if > >500kg (closed), >50kg (open) is stored. |
| Flammable zone | Must be established if any quantity is stored. |
| Fire extinguisher | If > 200kg present. |

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 HSR006483, Oxidising Liquids and Solids 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 |
| MSDS (SDS) | Material Safety Data Sheet (or Safety Data Sheet) |
| 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 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. |

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: | Suppliers SDS, EU ECHA, ingredients SDS's, ChemIDplus |

Review

| Date | Reason for review |
|--------------|--------------------------|
| 23 July 2021 | Not applicable – 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 and GHS 7 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 9 940 30 80.

