



LIMITED

1. Identification of Substance & Company

Product

| | |
|----------------------|---|
| Product name | Denka CSA #20 |
| Other names | Not applicable |
| Product code | Denka CSA #20 |
| HSNO approval | HSR002542 |
| Approval description | Construction Products (Corrosive [8.2C]) Group Standard 2017 |
| Proper Shipping Name | NA |
| UN number | NA |
| DG class | NA |
| Packaging group | NA |
| Hazchem code | NA |
| Uses | Special expansive hydraulic binder for cement base materials. |

Company Details

| | | |
|-----------|---|--|
| Company | Demden Limited | |
| Address | 29 Grey Street Tauranga New Zealand | P.O. Box 704 Tauranga 3144 New Zealand |
| Telephone | +64 7 575 5410 | |
| Website | www.demden.co.nz | |

Emergency Telephone Number: 0800-764 766

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002542, Construction Products (Corrosive [8.2C]) Group Standard 2017). The substance has been classified as hazardous according to the criteria in the Hazardous substances (Minimum Degrees of Hazard) Notice 2017.

Classes

Hazard Statements:

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|-------------------------------|---|
| 8.2C | H314 - Causes severe skin burns and eye damage. |
| 8.3A | H318 - Causes serious eye damage. |
| 6.1E (respiratory irritation) | H335 - May cause respiratory irritation. |
| 9.1D | H402 - Harmful to aquatic life. |

SYMBOLS

DANGER



Other Classifications

There are no other classifications that are known to apply.

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.
- P260 - Do not breathe dusts.
- P264 - Wash hands thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/eye protection/face protection.
- P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P363 - Wash contaminated clothing before reuse.



P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
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.
P312 - Call a POISON CENTRE or doctor/physician if you feel unwell.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

| Component | CAS/ Identification | Conc (% w/w) |
|-------------------------|---------------------|--------------|
| Calcium Oxide | 1305-78-8 | 15-25% |
| Calcium Sulphate | 7778-18-9 | 45-55% |
| Calcium Sulphoaluminate | 12004-14-7 | 25-35% |

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

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).

If medical advice is needed, have this SDS, product container or label at hand. . If exposed or concerned: Get medical advice/attention.

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Contact a doctor immediately.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Get medical advice.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Get medical attention.

Inhaled IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. If experiencing respiratory symptoms: Immediately call a POISON CENTER or doctor/physician.

Advice to Doctor

Treat symptomatically

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. Contaminated water will be strongly alkaline.
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 If greater than 10000kg is stored, secondary containment and emergency plans to manage any potential spills must be in place.

Emergency procedures In the event of large spillage (>100kg) of the solid or concentrated aqueous solution alert the fire brigade to location and give brief description of hazard.
Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of

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| Clean-up method | any unprotected personnel. Contain spill. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. Collect product avoiding any dust formation, 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 | The dust may form irritating atmosphere. The product will react exothermically with water. Contaminated water will be strongly alkaline. Do not allow contaminated water to enter the environment. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. 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 in a cool, dry place. Avoid contact with incompatible substances as listed in Section 10. |
| Handling | Keep exposure to a minimum, and minimise the quantities kept in work areas. Minimise dust generation and accumulation. 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 Standards | Ingredient | WES-TWA | WES-STEL |
|---------------------------------|-------------------------|---------------------|------------------|
| | Calcium Oxide | 2mg/m ³ | Data unavailable |
| | Calcium Sulphate | 10mg/m ³ | Data unavailable |
| | Calcium Sulphoaluminate | Data unavailable | Data unavailable |

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

| | | |
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| 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. |
| Skin |  | Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves, e.g. nitrile rubber, NBR gloves. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. Open wounds, abrasions or irritated skin should not be exposed to this material. |

**Respiratory**

To prevent irritation a well fitted dust mask should be used (this is not recommended when exposure is close to the WES). A fine particulate half or full face respirator with an effective seal is recommended when airborne concentrations approach the WES (section 8) should be used. If exposure to the concentrated aqueous solution, dust and mist is likely, a full face respirator with a particulate filter is recommended.

WES Additional Information

No additional information

9. Physical & Chemical Properties

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|---|---|
| Appearance | Solid white powder |
| Odour | No odour |
| pH | Dissolved product is alkaline. The pH value becomes 11-13. |
| Vapour pressure | Not applicable |
| Viscosity | Not applicable |
| Boiling point | Not available |
| Volatile materials | Not applicable |
| Freezing / melting point | Not available |
| Solubility | Partially soluble in water. Will solidify over a period of hours if moistened or wet. |
| Specific gravity / density | 2.90 – 2.96 g/mL at 20°C |
| Flash point | Non flammable |
| Danger of explosion | Not explosive |
| Auto-ignition temperature | Non flammable |
| Upper and lower flammable limits | Non flammable |
| Corrosiveness | Non corrosive to metals, corrosive to skin and eyes. |

10. Stability & Reactivity

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| Stability | This product is unlikely to react or decompose under normal storage conditions. This product will not undergo polymerisation reactions. Keep dry until used. |
| Conditions to be avoided | Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames. Minimise exposure to water and moisture in the air. |
| Incompatible groups | Strong acids, water, halogenated compounds. |
| Hazardous decomposition products | Reaction with strong acids generates toxic gases (e.g. sulphur oxides). |
| Hazardous reactions | Reactions with strong acids liberates heat. This material will react exothermically with water. The contaminated water will be strongly alkaline. Calcium oxide can react with metals such as aluminium and brass leading to the production of hydrogen. |

11. Toxicological Information**Summary**

IF SWALLOWED: can cause chemical burns in the mouth and gastrointestinal tract. May cause nausea and vomiting.

IF IN EYES: direct contact may cause eye damage. Dusts may be irritating.

IF IN ON SKIN: direct contact may cause chemical burns.

IF INHALED: fine dust may result in irritation of the throat and respiratory system.

Supporting Data

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|--------------|----------------|---|
| Acute | Oral | No data for mixture is available. Ingestion of this product may cause gastrointestinal irritation. Using LD ₅₀ 's for ingredients, the estimated LD ₅₀ (oral, rat) for the mixture is > 5,000 mg/kg. |
| | Dermal | No evidence of dermal toxicity (see skin below) |
| | Inhaled | No evidence of acute inhalation toxicity, however inhalation of dusts may result in respiratory irritation (see systemic toxicity below). |
| | Eye | The mixture is considered to be corrosive to the eye, because one of the ingredients (Calcium Oxide), present at >10% is considered an eye corrosive. The dust is considered a corrosive, on contact with water forms calcium hydroxide, which is caustic and may cause serious eye damage. |
| | Skin | This product may be corrosive to the skin, especially if the skin is moist. The mixture is classified as a skin corrosive 8.3C, because one of the ingredients (Calcium Oxide) present > 10% is considered a skin corrosive. |



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| Chronic | Sensitisation | The mixture is not considered to be a sensitizer, because none of the ingredients present in greater than 0.1% are known to be sensitizers. |
| | Mutagenicity | No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a mutagen. |
| | Carcinogenicity | No data for mixture is available. No ingredient present at concentrations > 0.1% is considered a carcinogen. |
| | Reproductive / Developmental | No data for mixture is available. 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 | Exposure the dust of this product may result in respiratory irritation. Open wounds , abrasions or irritated skin. |

12. Ecological Data

Summary
This mixture is considered to be harmful in the aquatic environment (classed 9.1D). Water contaminated with this product is alkaline and should not be allowed to enter the environment.

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| Supporting Data | |
| Aquatic | No data for mixture is available. Using EC ₅₀ 's for ingredients, the estimated EC ₅₀ for the mixture is > 100 mg/L. Data considered includes: Calcium oxide reacts with water to form calcium hydroxide (CAS # 1305-62-0) which has been classified as 9.1D with an LC ₅₀ of 33.884 mg/L. Ecotoxicity is also associated with a change in pH (>11). |
| Bioaccumulation | No data |
| Degradability | No data |
| Soil | No data available for the mixture. This product is not classified as ecotoxic in the soil environment. The soil toxicity value for the mixture is estimated to be ≥ 100 mg/kg. |
| Terrestrial vertebrate | This product is not considered harmful to terrestrial vertebrates. No LC ₅₀ (diet) data for ingredients are available and the classification is based on the LD ₅₀ (oral) – see section 11 – oral toxicity. |
| Terrestrial invertebrate | The mixture is not considered harmful to terrestrial invertebrates. |
| Biocidal | Not applicable |

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

| | | | |
|---------------------|----|------------------------------|------------------|
| UN number: | NA | Proper shipping name: | NA |
| Class(es): | NA | Packing group: | NA |
| Precautions: | NA | Hazchem code: | 1T (recommended) |

IMDG:

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.



IATA:

| | | | |
|---------------------|-----------|------------------------------|---------------|
| UN number: | 1910 | Proper shipping name: | CALCIUM OXIDE |
| Class(es): | 8 | Packing group: | III |
| Sub risk | NA | Hazchem code: | 4W |
| Precautions: | Corrosive | ERG code | 8L |

15. Regulatory Information

This product has been transferred to HSNO (transferred substance), EPA approval code: HSR002542, Construction Products (Corrosive [8.2C]) Group Standard 2017.
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 storing >10000 kg. |
| Certified handler | Not required. |
| Tracking | Not required. |
| Bundling and secondary containment | Required if storing >10000 kg. |
| Signage | Required if storing >1000 kg. |
| Location compliance certificate | 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 HSR002542, Construction Products (Corrosive [8.2C]) Group Standard 2017. 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) |
| 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 |
| 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. |



LIMITED

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, GESTIS

Review

| | |
|-----------------------|--|
| Date | Reason for review |
| November 2009 | New SDS |
| May 2014 | Update – review classification (respiratory irritation). |
| October 2014 | new address. Formatting. |
| September 2019 | 5 Year 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 HSNO classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological), full formulation details were not available. 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**.

