



LIMITED

Denka Power CSA Type S

Safety Data Sheet

1. Identification of Substance & Company

Product

Product name	Denka Power CSA Type S
Other names	Not applicable
Product code	Denka Power CSA Type S
HSNO Approval	HSR002544
Approval description	Construction Products (Subsidiary Hazard) Group Standard 2020
Proper Shipping Name	NA
UN number	NA
DG class	NA
Packaging group	NA
Hazchem code	NA
Uses	Cement/mortar additive for civil engineering and construction

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

NZ Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002544, Construction Products (Subsidiary Hazard) 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

Eye damage category 1
Skin irritant category 2
STOT* single exposure category 3

Hazard statements:

H318 - Causes serious eye damage.
H315 - Causes skin irritation.
H335 - May cause respiratory irritation.

*STOT – System Target Organ Toxicity

SYMBOLS

DANGER



Other Classifications

This substance becomes alkaline (pH 9~12) in contact with water. The wet substance may be corrosive to eyes, irritating to skin and mucous membranes. If swallowed, it may cause irritation of the throat and gastrointestinal tract. The wet substance may be harmful to aquatic organism because of the change of pH of the water.

Precautionary Statements

Prevention	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.
-------------------	---



Response P101 - If medical advice is needed, have product container or label at hand.
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.

Storage P405 - Store locked up.

Disposal P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Conc (% w/w)
Compound of sintered cement and calcium sulfoaluminate composite*	960375-09-1	100%

* constituents of "Compound of sintered cement and calcium sulfoaluminate composite" include, calcium oxide, calcium sulfate, aluminium oxide and magnesium oxide.

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: 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 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 any unprotected personnel. Contain spill. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses.
Clean-up method	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	Sweep 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

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. Handle in well-ventilated area. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of dust. Wash face and hands after handling.

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	-
	Calcium Sulphate	10mg/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. Nitrile rubber, NBR gloves are recommended. 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

To prevent respiratory 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. 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

No additional information

9. Physical & Chemical Properties

Appearance	grey solid (powder)
Odour	odourless
Odour Threshold	no data
pH	11-13 (when in contact with water)
Freezing/melting point	no data
Boiling Point	no data
Flashpoint	non flammable
Flammability	non flammable
Upper & lower flammable limits	no LEL or UEL
Vapour pressure	no data
Vapour density	no data
Specific gravity/density	2.70-3.15g/cm ³ (20°C)
Solubility	poorly soluble in water
Partition coefficient	no data
Auto-ignition temperature	no data
Decomposition temperature	no data
Viscosity	no data
Particle Characteristics	no data

10. Stability & Reactivity

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. This substance will solidify after reaction with water.

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**

Acute	Oral	No data for mixture is available. Ingestion of this product may cause gastrointestinal irritation or burns in the mouth. Using LD ₅₀ 's for ingredients, the estimated LD ₅₀ (oral, rat) for the mixture is > 5,000 mg/kg.
	Dermal Inhaled	No evidence of dermal toxicity (see skin below) 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, calcium formate), 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 irritant, because one of the ingredients (Calcium Oxide) present > 10% is considered a skin corrosive. Note: this substance will be alkaline with wet.
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 (does not trigger classification under GHS). Water contaminated with this product is alkaline and should not be allowed to enter the environment.

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 considered harmful towards aquatic organisms 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

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:	NA

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:	NA	Proper shipping name:	NA
Class(es):	NA	Packing group:	NA
Sub risk	NA	Hazchem code:	NA
Precautions:	NA	ERG code	NA

15. Regulatory Information

This product is an approved substances under the Hazardous Substances and New Organisms Act (HSNO). EPA approval code: HSR002544, Construction Products (Subsidiary Hazard) Group Standard 2020. All ingredients appear on the NZIoC

Specific Controls

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any quantity.
Packaging	All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied.
Inventory	An inventory of all hazardous substances must be prepared and maintained
Labelling	Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan	Required if storing >10000 kg.
Certified handler	Not required.
Tracking	Not required.
Bunding and secondary containment	Required if storing >10000 kg.
Signage	Required if storing >1000 kg.
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	Approval HSR002544, 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)
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 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:	EU ECHA, ingredients SDS's, ChemIDplus, GESTIS

Review

Date	Reason for review
May 2023	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 GHS 7 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 21 1040951.

