SAFETY DATA SHEET

SODA ASH DENSE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CAS NUMBER: 497-19-8
PROPER SHIPPING NAME: Not regulated
UN NUMBER: Not regulated
ALKALI

PRODUCT USE: Glass manufacture, chemicals, pulp and paper manufacture, sodium compounds, soaps and detergents, water treatment, aluminium production, textile processing, (eg. bleaching of linen, hemp, cotton), cleaning preparations, petroleum refining, sealing ponds from leakage (sodium ions bind to clay particles, which swell to seal leaks), catalyst in coal liquefaction, photographical agent, food additive.

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Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

Hazardous Substance according to the criteria of the New Zealand Hazardous Substances and New Organisms legislation and GHS 7th Edition.

HAZARD LABELLING
WARNING

HAZARD CLASSIFICATION AND STATEMENTS

GHS	**HSNO**
Serious eye irritation - Category 2	6.4A

Causes serious eye irritation.

PRECAUTIONARY STATEMENTS

PREVENTION
Wear protective gloves, protective clothing, eye protection, face protection and respiratory protection.
Wash hands, face and exposed skin thoroughly after handling.

RESPONSE
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

DISPOSAL
Dispose of contents and packaging in accordance with relevant legislation.
See Section 13 of this SDS Document for more information.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%	HAZARDOUS
Sodium carbonate	497-19-8	100	Yes

SYNONYMS: Sodium Carbonate; Carbonic acid, disodium salt; Disodium carbonate; Washing soda.

Section 4 - FIRST AID MEASURES

Primary routes of exposure include inhalation of dusts and contact with skin and eyes.

MAIN SYMPTOMS CAUSED BY EXPOSURE
Inhalation can lead to cough, wheezing and difficulty breathing, skin and eye contact can cause irritation, redness and pain. Ingestion can cause stomach pain and vomiting.

SWALLOWED
Immediately rinse mouth with water, and then give 2-3 glasses of water to drink. Do not give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical advice if symptoms develop.

EYE
Immediately flush eyes with plenty of water for at least 15 minutes. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention.

SKIN
Immediately wash skin with plenty of soap and water. Get medical attention if symptoms occur.

INHALED
If inhaled, remove to fresh air. Administer oxygen if breathing is difficult. If unwell/symptoms develop or if in doubt get medical attention.

Emergency shower and/or eyewash station required.
PPE required for first aiders: see Section 8

NOTES TO PHYSICIAN
Treat symptomatically based on individual reactions of patient and judgement of doctor.
NOTE: In an emergency dial 111, for advice contact a Poison Centre (0800-764-766).

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Use extinguishing media suitable for surrounding area; water spray, dry chemical, foam or carbon dioxide.
DO NOT use water jet as it may spread the fire.

FIRE FIGHTING
Alert Fire Brigade and tell them location and nature of hazard.
Clear fire area of all non-emergency personnel.
Stay upwind. Eliminate ignition sources.
Wear breathing apparatus plus protective gloves.
Prevent spillage from entering drains or water courses.
Use firefighting procedures suitable for surrounding area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD
Non-combustible solid.
Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZARDS FROM COMBUSTION PRODUCTS
Hazardous decomposition products include carbon dioxide, carbon monoxide and sodium oxide.

PERSONAL PROTECTIVE EQUIPMENT
Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves).

HAZCHEM CODE
Not applicable.

Section 6 - ACCIDENTAL RELEASE MEASURES

Only fully trained personnel should be involved in handling chemicals.
Personal Protective Equipment advice is contained in Section 8 of the SDS.

SPILL RESPONSE
Avoid generating dust. Increase ventilation. Move upwind.
Evacuate all unnecessary personnel. Eliminate all sources of ignition.
Personnel involved in the clean-up should wear full protective clothing.
Stop leak if safe to do so. Avoid walking through spilled material as it can be slippery.
Sweep up or vacuum up. Transfer to a labelled chemical waste container and seal for disposal. See section 13 of the SDS.
Do NOT let product reach drains or waterways. If a significant amount does enter a waterway advise your local waste authority.
Wash spill area with plenty of water after removal of contaminant.

EMERGENCY RESPONSE PLANNING GUIDELINES (AIHA 2016)
No ERPGs have been set for this substance by the American Industrial Hygiene Association.

PROTECTIVE ACTION CRITERIA (SCAPA) - Revision 29

Chemical (CAS Number)	PAC-1	PAC-2	PAC-3	Units
Sodium carbonate (497-19-8)	7.6	83	500	mg/m^3

PAC-1: Mild, transient health effects.
PAC-2: Irreversible or other serious health effects that could impair the ability to take protective action.
PAC-3: Life-threatening health effects.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
Operators should be trained in procedures for safe use of this material.
Use good occupational work practice.
Avoid generating and breathing dust. Avoid contact with skin and eyes.
Avoid contact with incompatible materials.
Avoid all ignition sources. Avoid sources of heat.
Avoid physical damage to containers.
Handle and open container with care. Use in a well-ventilated area.
Always wash hands with soap and water after handling or if accidental exposure occurs. Work clothes should be laundered separately.
Ensure an eye bath and safety shower are available and ready for use.
Observe good personal hygiene practices.

SUITABLE PACKAGING
Original packaging. Multi ply paper bag with sealed plastic liner or heavy gauge plastic bag/bulk bag.

STORAGE INCOMPATIBILITY
Avoid excessive heat, direct sunlight, moisture and high temperatures.
Store away from oxidizing agents.

STORAGE REQUIREMENTS
Store in original packaging until ready for use.
Keep packaging securely sealed to protect from moisture.
Store in a cool, well-ventilated area out of direct sunlight.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.

Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	Measurement	Limit
New Zealand WES 2020	total dust	time weighted average (TWA)	10 mg/m^3
New Zealand WES 2020	respirable dust	time weighted average (TWA)	3 mg/m^3

No exposure limits set for Sodium carbonate by WorkSafe New Zealand or Safe Work Australia.

ENGINEERING CONTROLS

VENTILATION SYSTEM
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to 'Local exhaust ventilation' found on the WorkSafe New Zealand website.

PERSONAL RESPIRATORS
An approved P2 dust mask is recommended when using this product in dusty conditions. For more information see Australian/New Zealand Standard, AS/NZS 1715:2009 and AS/NZS 1716:2012.
If in doubt, seek expert occupational hygiene advice.

EYE PROTECTION
Use approved chemical safety goggles and a full-face shield where splashing is possible. Refer to Personal eye protection Part 1: Eye and face protectors for occupational applications, Australian/New Zealand Standard: AS/NZS 1337.1:2010. Maintain eye wash fountain in work area.

SKIN PROTECTION
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate,

to prevent skin contact. Refer to AS/NZS 2161.1:2016 Occupational Protective Gloves – Selection, use and maintenance. Dispose of contaminated gloves after use. Ensure there is ready access to an emergency shower.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
White hygroscopic, granular or crystalline powder.

PHYSICAL PROPERTIES

PROPERTY	VALUE
State:	Solid
Odour:	Odourless
Molecular Weight:	105.99
Melting Range (˚C):	851
Boiling Range (˚C):	Not available
Solubility in water (g/L, 20˚C):	212.5
pH (1% solution):	~11.4
Relative density:	2.53
Bulk Density (g/cm^3):	0.8-1.2
Volatile Component (%vol):	Not available
Relative Vapor Density(air=1):	Not available
Vapour Pressure (kPa):	Not available
Autoignition Temp (˚C):	Not applicable
Flash Point (˚C):	Not applicable
Lower Explosive Limit (%):	Not applicable
Upper Explosive Limit (%):	Not applicable
Decomposition Temp (˚C):	>400
Viscosity:	Not applicable
Evaporation Rate:	Not applicable

Section 10 – CHEMICAL STABILITY AND REACTIVITY

CHEMICAL STABILITY
Product is stable under normal conditions of use, storage and temperature. Product is hygroscopic.

CONDITIONS TO AVOID
Avoid excessive heat, direct sunlight, moisture, and temperature extremes. Keep containers dry and tightly closed to avoid moisture absorption and contamination. On exposure to air, will gradually absorb one mole of water.

INCOMPATIBLE MATERIALS
Incompatible with oxidizing agents, acids, acid anhydrides, aluminium powder, hydrated lime, fluorine, phosphorous pentoxide, sulfuric acid, ammoniacal silver nitrate, molten lithium, magnesium and sources of ignition. Violent reaction with acids or water generating heat. Violent reaction with phosphorus pentoxide. Mixture with fluorine may ignite and burn fiercely. May cause explosive reaction with magnesium. May cause explosive reaction with aluminium, if aluminium is red hot. Reacts with hydrated lime in the presence of moisture to form corrosive caustic soda.

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon oxides, sodium oxide.

HAZARDOUS REACTIONS
Hazardous polymerization will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

ACUTE HEALTH EFFECTS

SWALLOWED
May cause irritation of the mouth, throat and stomach. Concentrated solutions may be corrosive, resulting in cramps, vomiting, diarrhoea.

EYE
Reddening, burning pain, irritation to the conjunctiva and risk of damage to the cornea.

SKIN
Dust and weak solutions may be irritating to skin of sensitive individuals causing redness and blistering. Repeated/prolonged skin contact may cause dermatitis and ulceration of the skin.
Concentrated solutions may be corrosive, causing severe irritation and burning.

INHALED
Inhalation of dust may be harmful. The material may cause respiratory irritation, including cough, wheezing and difficulty breathing.

CHRONIC HEALTH EFFECTS
Long term exposure to high dust concentrations may cause changes in lung function.

TOXICITY AND IRRITATION DATA

TOXICITY
Acute Oral Toxicity, Rat, LD_{50}: 4090 mg/kg
Acute Dermal Toxicity, LD_{50}: >2000 mg/kg
Acute Inhalation Toxicity, Rat, 2 hour LC_{50}: 2.3 mg/l
Note: Although the Acute inhalation toxicity LC_{50} is between 1.0 and 5.0mg/l, the product is not in the particle size range of 0-100 micron to attract an inhalation toxicity classification. Refer to GHS, 7th edition, section 3.1.2.

IRRITATION/CORROSION
Eyes: Irritating to eyes
Skin: May cause mild irritation

Carcinogenic effects: Not classified or listed by IARC, Ca Prop65, NTP, or NIOSH.
Mutagenic effects: Not available.
Reproductive or developmental effects: No risk for developmental or reproductive toxicity.
Aspiration hazard: Not available.
Specific target organ toxicity: Not available.
Sensitisation (respiratory/contact): Not available.

Section 12 - ECOLOGICAL INFORMATION

ECOTOXICITY
Not toxic in the aquatic environment.

ECOTOXICITY DATA
Fish, (*Lepomis macrochirus*), 96h LC_{50}: 300 mg/L
Crustacean, (*Daphnia magna*), 48h EC_{50}: 265 mg/L
Algae, (*Nitszcheria linearis*) 5 day EC_{50}: 242 mg/L

Persistence and Degradability: When dissolved in water, sodium carbonate forms carbonic acid and sodium hydroxide. Sodium hydroxide is a strong base.
Mobility: Low potential for adsorption in soil.
Bioaccumulation: Log Kow = -6.19; Low potential for bioaccumulation (log Kow <4).

BOD and COD: Not applicable.
Products of Biodegradation: Not applicable to an inorganic substance.

DO NOT discharge into sewer or waterways.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal of Hazardous Substances is subject to the Resource Management Act and Council By-Laws in addition to HSNO requirements. Do not dispose with household rubbish.

PRODUCT
Recycle wherever possible. Special hazard may exist - specialist advice may be required.
Incinerate or bury residue in an authorised landfill, seek permit to dump from Landfill and check that the substance is of an appropriate type for disposal at that site.
Treatment in a biological wastewater treatment system with prior approval and arrangement is also permissible providing that the substance is rendered non-hazardous and does not pose any adverse effects to human health or the environment.
Consult an approved Waste Management company for disposal options.

PACKAGING
Containers may still present a chemical hazard/danger when empty.
Wear appropriate protective equipment as outlined in Section 8 of this SDS when handling empty containers or residues.
Empty containers may be decontaminated. The residual contents of the package must be diluted to below the thresholds for the respective hazard and the diluted residue is 1% or less of the volume of the package.
Puncture containers, to prevent re-use, and bury at an authorised landfill.
Alternatively, contact an appropriate Waste Management Company for guidance and disposal options in your area.
Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Section 14 - TRANSPORT INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG
Not classified as a Dangerous Good under NZS 5433:2020 Transport of Dangerous Goods on Land.

Section 15 - REGULATORY INFORMATION

REGULATIONS
Classified as hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms Act.
This product has been assigned to the following Group Standard by Interchem Agencies Limited: Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020.
EPA Approval number: HSR002503.

Certified handler, tracking and location compliance certification regulations do not apply.

For full HSNO controls and Health and Safety at Work regulations for this substance refer to the New Zealand EPA's Approved Hazardous Substances with Controls website.

Sodium carbonate (CAS 497-19-8) is found on the following inventory lists:
NZIoC, AIIC, TSCA, DSL, EINECS

Section 16 – OTHER INFORMATION

NEW ZEALAND POISON CENTRE 0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

Interpretation and Abbreviations
ACGIH – American Conference of Governmental Industrial Hygienists.
ACVM – Agricultural Chemicals and Veterinary Medicines.
AIIC – Australian Inventory of Industrial Chemicals.
BOD – Biochemical Oxygen Demand.
COD – Chemical Oxygen Demand.
DSL – Canadian Domestic Substances List.
EINECS – European Inventory of Existing Commercial Chemical Substances.
GHS – Globally Harmonized System of Classification and Labelling of Chemicals.
IARC – International Agency for Research on Cancer.
ISHL – Japanese Industrial Safety and Health Law List of Chemicals.
Koc – soil organic carbon-water partition coefficient
Kow - octanol/water partition coefficient
LOEL – Lowest Observed Effect Level.
LD_{LO} – Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
MAK – Maximum workplace concentration in the workplace air that generally does not have known adverse effects on the health of the employee nor cause unreasonable annoyance when a person is repeatedly exposed during long periods, usually 8 hours daily, 40hour working week).
NOAA – National Oceanic and Atmospheric Administration.
NOEC – No Observed Effect Concentration.
NTP – National Toxicology Program.
NZ EPA CCID – New Zealand Environmental Protection Authority Chemical Classification and Information Database.
NZIoC – New Zealand Inventory of Chemicals.
OECD HPV – The Organisation for Economic Co-operation and Development High Production Volume Chemicals.
PPE – Personal Protective Equipment.
Prop 65 – California Proposition 65 List of Chemicals.
SCAPA – Subcommittee on Consequence Assessment and Protective Actions.
STEL – Short term exposure limit.
TSCA – US Toxic Substances Control Act Existing Chemicals.
TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

Sources of key data used to compile the datasheet:
Manufacturers SDS
OECD SIDS Initial Assessment Report of Sodium Carbonate
GHS 7th edition
GESTIS Substance Database

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End of SDS