



SAFETY DATA SHEET

SODIUM BICARBONATE

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CAS NUMBER: 144-55-8
PROPER SHIPPING NAME: Not regulated
UN NUMBER: Not regulated

PRODUCT USE: It is a Food Additive (food grade), E500 (acidity regulator, anticaking agent, raising agent), feed additive, buffer and neutraliser in the beverage industry. Used as an abrasive in toothpaste, in dry chemical extinguishers, to absorb odours and in manufacture of specialty chemicals and pharmaceuticals.

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Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

Classified as Non-Hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms legislation and GHS 7th Edition.

EMERGENCY OVERVIEW

Non-hazardous.
 Health injuries are not known or expected under normal use.
 Adverse ecological effects are not known or expected.

PRECAUTIONARY STATEMENTS

Avoid generating excessive dust.
 Do not breathe dust.
 If in contact with eyes, rinse thoroughly.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%	HAZARDOUS
Sodium Bicarbonate	144-55-8	>99	No

SYNONYMS: Bicarbonate of soda; Baking soda; Sodium hydrogen carbonate; Nahcolite; Sodium acid carbonate; Carbonic acid monosodium salt.

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Section 4 - FIRST AID MEASURES

SWALLOWED

If ingested, rinse mouth with water.

If large amounts have been swallowed or symptoms persist, contact a Poison Centre (0800 764 766) or a doctor.

EYE

If this product comes in contact with eyes wash out immediately with water.

If irritation continues, seek medical attention.

SKIN

If skin or hair contact occurs flush skin and hair with running water (and soap if available).

Seek medical attention in the event of irritation.

INHALED

Remove to fresh air. Other measures are usually unnecessary. If symptoms persist, call a doctor.

NOTES TO PHYSICIAN

Treat symptomatically.

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. If safe to do so, remove containers from path of fire.

Cool fire exposed containers with water spray from a protected location.

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 bicarbonate (144-55-8)	13	140	840	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

Store away from oxidizing agents and incompatible materials.

Avoid contamination, store away from Dangerous Goods and Toxic Substances.

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 toxic substances.

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 bicarbonate by WorkSafe New Zealand or Safe Work Australia.

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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 P1 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 crystalline solid.

PHYSICAL PROPERTIES

PROPERTY	VALUE
State:	Divided solid
Odour:	Odourless
Molecular Weight:	84.01
Melting Range (°C):	>500
Boiling Range (°C):	Not applicable
Solubility in water (g/L, 20°C):	~95
pH (1% solution, 25°C):	~8.4
Specific Gravity (water=1, 20°C):	2.208
Bulk Density (kg/m ³):	~900
Volatile Component (%vol):	Not applicable
Relative Vapor Density (air=1):	Not applicable
Vapour Pressure (Pa, 20°C):	66.9
Autoignition Temp (°C):	Not available
Flash Point (°C):	Not applicable
Lower Explosive Limit (%):	Not applicable
Upper Explosive Limit (%):	Not applicable
Decomposition Temp (°C):	>50
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.

CONDITIONS TO AVOID

Avoid excessive heat, moisture, incompatible materials.

INCOMPATIBLE MATERIALS

Reacts with acids to form carbon dioxide. Incompatible with oxidisers. Dangerous reaction with monoammonium phosphate dry chemical extinguishing agent. Moisture accelerates this reaction. Reacts violently with sodium-potassium alloy. Incompatible with acids, acidic salts, aspirin and bismuth salicylate.

Keep containers dry and tightly closed to avoid moisture absorption and contamination.

HAZARDOUS DECOMPOSITION

Thermal decomposition can lead to release of carbon oxides.

HAZARDOUS REACTIONS

Hazardous polymerization will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

ACUTE HEALTH EFFECTS**SWALLOWED**

Health injuries are not known or expected under normal use. Large doses may cause gastrointestinal upsets, with large amounts of carbon dioxide being produced.

EYE

May cause mild irritation.

SKIN

May cause redness in susceptible individuals.

INHALED

Inhalation of dust may cause coughing and irritation of the respiratory tract.

CHRONIC HEALTH EFFECTS

Chronic over-ingestion may cause metabolic alkalosis, cyanosis and hypernatremia.

TOXICITY AND IRRITATION DATA**TOXICITY**

Acute Oral Toxicity, Rat, LD₅₀: >5000 mg/kg

Acute Dermal Toxicity, LD₅₀: No data available.

Acute Inhalation Toxicity, LC₅₀: >4.74mg/L

IRRITATION

Mild irritation of eyes and respiratory tract.

Skin irritation/corrosion Rabbit GLP study 40 CFR 798.4470: Slightly irritating.

Eye irritation/Corrosion Rabbit EPA TSCA 40 CFR 798.4500 Draize test: minimally irritating.

Irritating (dose of 220mg).

Sensitisation (respiratory/contact): Not classified.

Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.

Mutagenic effects: Not classified.

Reproductive or developmental effects: Not classified.

Aspiration hazard: Not available.

Specific target organ toxicity: Not classified.

Section 12 - ECOLOGICAL INFORMATION

ECOTOXICITY

Not considered to be a hazard to the environment.

ECOTOXICITY DATA

Fish (Rainbow Trout), 96h LC₅₀: >7,700 mg/L

Crustacean (*Daphnia magna*), 48h EC₅₀: >1000 mg/l

Invertebrate, (*Apis mellifera* - Honeybee), 48h LC₅₀: >24µ/bee

Persistence and Degradability

Inorganic compound, found naturally in the environment. The natural mineral form is known as nahcolite. Sodium bicarbonate will absorb moisture and gradually decompose into sodium carbonate, water and carbon dioxide.

Mobility

Sodium bicarbonate is present in the environment predominantly as sodium and bicarbonate ions in the aquatic environment.

Environmental Fate (Exposure)

Not expected to present adverse effects on the environment.

Bioaccumulative Potential

Will not accumulate in living tissues.

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.

Consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

Dispose of by: Burial in a licensed landfill or incineration in a licensed apparatus (after admixture with suitable combustible material).

Empty contaminated packaging should be taken for local recycling, recovery or waste disposal. Plastic packaging should not be incinerated in an uncontrolled manner.

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

Non-hazardous.

Controls applying to this substance are:

None, not hazardous.

Carbonic acid monosodium salt, (CAS 144-55-8) is listed on the following inventories:

NZIoC, TSCA, AIIC, DSL, ENCS

Section 16 - OTHER INFORMATION

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

Abbreviations:

ACGIH - American Conference of Governmental Industrial Hygienists.
ACVM - Agricultural Chemicals and Veterinary Medicines.
AIC - Australian Inventory of Industrial Chemicals.
AOX - Absorbable organic halogens.
APF - Assigned Protection Factor.
BOD - Biochemical Oxygen Demand.
China IECSC - Inventory of Existing Chemical Substances Produced or Imported in China.
COD - Chemical Oxygen Demand.
DSL - Canadian Domestic Substances List.
EINECS - European Inventory of Existing Commercial Chemical Substances.
ENCS - Japanese Existing and New Chemical substances.
GHS - Globally Harmonized System of Classification and Labelling of Chemicals.
GRAS - Generally Recognized as Safe
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.
LD₅₀ - Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
NOEC - No Observed Effect Concentration.
NTP - National Toxicology Program.
NZIoC - New Zealand Inventory of Chemicals.
OECD HPV - The Organisation for Economic Co-operation and Development High Production Volume Chemicals.
PEL - Permissible exposure limit.
PPE - Personal Protective Equipment.
Prop 65 - California Proposition 65 List of Chemicals.
RTECS - Registry of Toxic Effects of Chemical substances.
TOC - Total Organic Carbon.
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.
VOC - Volatile Organic Compounds.

Sources of key data used to compile the datasheet:

Manufacturer's SDS
OECD SIDS Assessment of Sodium Bicarbonate

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End of SDS