SODIUM CARBONATE

VWR International, Pty Ltd

Chemwatch Hazard Alert Code: 3

Chemwatch: **10252**
Version No: **10.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

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S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	SODIUM CARBONATE
Chemical Name	sodium carbonate
Synonyms	Baros, C-Na2-O3 (CAS RN: 7542-12-3), Colyte, DSA, Deltrex Best, Dense Soda Ash, EPA Pesticide Chemical Code 073505, Ikon Dense Soda Ash, Merck sodium carbonate anhydrous AnalaR 10240, Na2CO3, Natrii hydrogencarbonas, Natron, Redox SOCARB50, Sel De vichy, Soda, Soda (VAN), Trona, brysodash, calcined soda, carbonic acid disodium salt, crystol carbonate, disodium carbonate, hydrated soda ash, natrium bicarbonicum, natrium hydrogencarbonicum, soda ash soda ash dense / light, soda ash sodium carbonate, soda ash briquettes, soda ash dense, soda ash light, soda(calcined), sodium bicarbonate [USAN:JAN], sodium carbonate, sodium carbonate anhydrous, sodium carbonate decahydrate (CAS 7542-12-3), sodium carbonate, anhydrous AnalaR, sodium hydroxyformate, washing soda
Proper shipping name	Not Applicable
Chemical formula	CH2O3.2Na
Other means of identification	Not Available
CAS number	497-19-8

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Manufacture of sodium salts, glass, builder in soaps, detergents, cleaners. As a water softener; in photography; in textile bleaches; in pulp and paper manufacture; aluminium production; petroleum refining; sealing ponds from leakage; coal liquefaction catalyst; food additive., A naturally occurring form of sodium carbonate decahydrate with 17% sodium bicarbonate, called Natron (CAS RN: 7542-12-3), is commercially available and. has been used for thousands of years as a cleaning product for both the home and body. Blended with oil, it was an early form of soap. It softens water while removing oil and grease., The mineral was used in Egyptian mummification because it absorbs water and behaves as a drying agent. Moreover, when exposed to moisture the carbonate in natron increases pH (raises alkalinity), which creates a hostile environment for bacteria. In some cultures natron was thought to enhance spiritual safety for both the living and the dead. Natron was added to castor oil to make a smokeless fuel, which allowed Egyptian artisans to paint elaborate artworks inside ancient tombs without staining them with soot., Natron is an ingredient for making a distinct color called Egyptian blue. It was used along with sand and lime in ceramic and glass-making by the Romans and others at least until 640 AD. The mineral was also employed as a flux to solder precious metals together.

Details of the supplier of the safety data sheet

Registered company name	VWR International, Pty Ltd		
Address	Unit 1/31 Archimedes Place 4172 QLD Australia		
Telephone	61 7 3009 4100 ; 1300 727 696		
Fax	61 7 3009 4199 ; 1300 135 123		
Website	http://au.vwr.com		
Email	csaus@au.vwr.com		

Emergency telephone number

Association / Organisation	Not Available		
Emergency telephone numbers	61 7 3009 4100 ; 1300 727 696		
Other emergency telephone numbers	61 7 3009 4100 ; 1300 727 696		

SECTION 2 HAZARDS IDENTIFICATION

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Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	2	
Body Contact	3	
Reactivity	1	
Chronic	2	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	None
GHS Classification[2]	Eye Irrit. 2
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Label elements

GHS label elements	
SIGNAL WORD	**WARNING**

Hazard statement(s)

H319	Causes serious eye irritation

Precautionary statement(s) Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name
497-19-8	>=99	sodium carbonate

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ 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 without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:
- Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.
* Activated charcoal does not absorb alkali.
* Gastric lavage should not be used.

Supportive care involves the following:
- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:
- Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	Decomposes on heating and produces acrid and toxic fumes of: , carbon monoxide (CO) ,

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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Minor Spills	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. ▸ **CAUTION**: Advise personnel in area.

	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry area protected from environmental extremes. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ **DO NOT** use aluminium or galvanised containers ▸ Polyethylene or polypropylene container. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Sodium carbonate: ▸ aqueous solutions are strong bases ▸ reacts violently with finely divided aluminium, fluorine, lithium, phosphorus pentoxide, sulfuric acid ▸ reacts with fluorine gas at room temperature, generating incandescence.

PACKAGE MATERIAL INCOMPATIBILITIES

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
sodium carbonate	10(ppm)	30(ppm)	50(ppm)	500(ppm)

Ingredient	Original IDLH	Revised IDLH
SODIUM CARBONATE	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or

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	▸ task.
Skin protection	See Hand protection below
Hand protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C. apron. ▸ Barrier cream.
Thermal hazards	

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the SODIUM CARBONATE

Material	CPI
NATURAL RUBBER	A
NITRILE	A

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion

Respiratory protection

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	White hygroscopic odourless powder / granular mildly alkaline solid: mixes with water (215 g/l, 20 C; 45.5 g/100 ml, 100 C). Soluble in glycerol and slightly soluble in alcohol. Bitter alkaline taste. On exposure to air, will gradually absorb one mole of water.

Physical state	Divided Solid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not applicable
pH (as supplied)	Not applicable	**Decomposition temperature**	>400
Melting point / freezing point (°C)	851	**Viscosity (cSt)**	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	106
Flash point (°C)	Not Available	**Taste**	Not Available
Evaporation rate	Not applicable	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not applicable	**Volatile Component (%vol)**	Not applicable
Vapour pressure (kPa)	Not applicable	**Gas group**	Not Available
Solubility in water (g/L)	Miscible	**pH as a solution(1%)**	11.3

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Vapour density (Air = 1)	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs.
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.
Skin Contact	The material produces mild skin irritation; evidence exists, or practical experience predicts, that the material either ▸ produces mild inflammation of the skin in a substantial number of individuals following direct contact, and/or ▸ produces significant, but mild, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic).
Eye	510sodacarb Alkaline salts may be intensely irritating to the eyes and precautions should be taken to ensure direct eye contact is avoided. Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain.
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness.

sodium carbonate	TOXICITY	IRRITATION
	Dermal (Rat) LD50: >2000 mg/kg *	Eye (rabbit): 100 mg/24h moderate
	Inhalation (Guinea pig) LC50: 800 mg/m3/2h	Eye (rabbit): 100 mg/30s mild
	Inhalation (Mouse) LC50: 1200 mg/m3/2h	Eye (rabbit): 50 mg SEVERE
	Inhalation (rat) LC50: 2300 mg/m3/2h	Skin (rabbit): 500 mg/24h mild
	Intraperitoneal (Mouse) LD50: 117 mg/kg	
	Oral (Mouse) LD50: 6600 mg/kg	

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	Oral (Rat) LD50: 2800 mg/kg *	
	Oral (rat) LD50: 4090 mg/kg	
	Subcutaneous (Mouse) LD50: 2210 mg/kg	
	Not Available	Not Available

** Value obtained from manufacturer's msds*
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

SODIUM CARBONATE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Acute Toxicity	Not Applicable	**Carcinogenicity**	Not Applicable
Skin Irritation/Corrosion	Not Applicable	**Reproductivity**	Not Applicable
Serious Eye Damage/Irritation	Eye Irrit. 2	**STOT - Single Exposure**	Not Applicable
Respiratory or Skin sensitisation	Not Applicable	**STOT - Repeated Exposure**	Not Applicable
Mutagenicity	Not Applicable	**Aspiration Hazard**	Not Applicable

CMR STATUS

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

for sodium carbonate
Environmental fate::
The hazard of sodium carbonate for the environment is mainly caused by the pH effect of the carbonate ion. For this reason the effect of sodium carbonate on the organisms depends on the buffer capacity of the aquatic or terrestrial ecosystem.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

SECTION 14 TRANSPORT INFORMATION

Continued...

Labels Required

Marine Pollutant: NO	
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

sodium carbonate(497-19-8) is found on the following regulatory lists	"Australia Hazardous Substances Information System - Consolidated Lists","OECD List of High Production Volume (HPV) Chemicals","Australia High Volume Industrial Chemical List (HVICL)","International Numbering System for Food Additives","International Council of Chemical Associations (ICCA) - High Production Volume List","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","Australia Inventory of Chemical Substances (AICS)","FisherTransport Information","Sigma-AldrichTransport Information","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","IMO IBC Code Chapter 17: Summary of minimum requirements","GESAMP/EHS Composite List - GESAMP Hazard Profiles","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)"

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.