

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)
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 Emergency No. : Same as above

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Identity of Substance/Mixture : Certified reference material: NMIJ CRM 3005-a
 Sodium Carbonate
 Recommended Use of the Chemical and Restriction on Use : This CRM is intended for use in the standardization of titrants for acidimetry and so on. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification: Acute Toxicity : Hazard Category 4
 Serious eye damage/ Eye irritation : Hazard Category 1
 Specific Target Organ Toxicity/Systemic Toxicity (Single Exposure) : Hazard Category 3 (respiratory tract irritation, anesthetic action)

GHS Classification:



Signal Word: Danger
 Hazards Statement: Causes serious eye damage
 Toxic, if inhaled.
 May cause an irritation on respiratory organ
 May cause drowsiness or dizziness

Precautionary Statement: [Precaution]
 Use outdoors or in a well-ventilated area.
 Do not breathe dust, fume, mist, vapors, spray, etc.

Wear protective glasses / face protection.

[Action]

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.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Get medical advice/attention if you feel unwell.

[Storage]

Store in a closed container at room temperature, keeping humidity at about 60 % or less. Protect from effects of acid and alkali.

[Disposal]

Incinerate this reference material and its containers in an appropriate incinerator. Or entrust disposal of this reference material and its containers to a professional waste disposal company licensed by prefectural government.

The other hazards than the above do not result in classification or are not covered by the GHS.

3. Composition/Information on Ingredients

Substance or Mixture	: Substance
Chemical Identity	: Sodium carbonate
Synonym	: Soda ash
Content	: 99.9 % or above
Chemical Formula	: Na_2CO_3
Molecular Weight	: 105.99
Reference Number in Gazetted List in Japan	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (1)-164 Industrial Safety and Health Act : Published
CAS Number	: 497-19-8
Hazardous Ingredient	: None

4. First-aid Measures

If in eyes	: Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If on skin	: Rinse thoroughly with clean water.
If inhaled	: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If swallowed	: Rinse mouth thoroughly with water. Drink a lot of water then it induces vomiting. Seek medical attention, if necessary.

5. Fire-fighting Measures

Extinguishing Media	: This material is incombustible. Use a fire extinguishing agent suitable for surrounding fire.
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- Fire-Specific Hazards : May form irritating or toxic fume (or gas) at the time of fire. Extinguish from windward, Use personal protective equipment to avoid inhaling fume or toxic gases.
- Specific Fire-Fighting Method : Remove any combustible sources from the seat of fire and extinguish using appropriate extinguishing agent. Transfer the movable container to a safe place promptly. If impossible to transfer, use water spray to cool the periphery.
- Protection of Fire-Fighters : Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fire protection clothing, breathing apparatus, and circulating oxygen respirator.

6. Accidental Release Measures

- Personal Precaution : Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed.
- Personal Protective Equipment and Emergency Procedures : Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
- Environmental Precautions : Take precautions to prevent spillage from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding environment.
- Recovery and Neutralization : Collect scattered chemicals in empty containers. Rinse away the remains with plenty of water.
- Prevention of Secondary Disaster : Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

7. Handling and Storage

- Handling : Releases carbon dioxide gas if in contact with acid, raising internal pressure of a tightly-closed container. Generates acid mist together with carbon dioxide gas.
- Engineering Precautions : Use local ventilation system in indoor handling areas.
- Local and General Ventilation : Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers. Prevent spill, overflow and scattering, and avoid vapor generation. Keep container tightly closed after using this reference material. Wash hands, face etc. thoroughly and gargle after handling this reference material. Do not bring gloves and other contaminated personal protective equipment into staff room.
- Precautions for Safe Handling

Make a place handling this reference material a restricted area to keep out unauthorized people.
 Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.
 Do not eat, drink, or smoke during handling

Storage

- Appropriate Storage Conditions : Keep out of direct sunlight and store in dry place. Seal the container and avoid contact with air.
 Upon long-term storage, this CRM may be solidified.
- Safe Container Packaging Material : Polyethylene, glass, polypropylene

※ Please refer the certificate about the details of appropriate storage conditions and precautions for the use as reference material.

8. Exposure Controls/Personal Protection

Threshold Limit Value

- Work environment evaluation criteria : Not specified

Permissible Concentration

- ACGIH TLV-TWA : Not specified
- Values recommended by Japan Society for Occupational Health : Not specified
- OSHA PEL TWA : Not specified

Engineering Controls

- Ventilation/Exhaust : Use local ventilation system in indoor handling area.
 Install safety shower and facilities to rinse eyes and to wash hands in the vicinity of a place handling this reference material and label them clearly.

Personal Protective Equipment (PPE)

- Respiratory System : Protective gas mask for dust, Self-contained compressed air breathing apparatus.
- Hands : Protective gloves
- Eyes : Protective glasses. Eye protector with side plates (or Goggle type)
- Skin and Body : Protective clothing, protective boots
- Hygiene Controls : Handle this reference material in accordance with industrial health and safety standards.
 Do not eat, drink or smoke when using this reference material.
 Wash hands thoroughly after handling.

9. Physical and Chemical Properties

- Appearance, etc. : Powder

• Color	:	White
• Odor	:	Odorless
• pH	:	No data
• Melting point	:	851 °C
• Boiling point	:	No data
• Flashing point	:	No data
• Explosive range	:	No data
• Vapor pressure	:	No data
• Relative vapor density(Air=1)	:	No data
• Specific gravity or bulk specific gravity	:	2.533 g/cm ³
• Solubility	:	Soluble in water (7.1 g/100 g (water) at 0 °C, 48.5 g/100 g(water) at 104 °C) and insoluble in ethanol.
• <i>n</i> -Octanol/water partition coefficient (Log Po/w)	:	No data
• Auto-ignition temperature	:	No data

10. Stability and Reactivity

- ◇Chemical Stability
 - No data available
- ◇Reactivity
 - No data available
- ◇Conditions to Avoid
 - Sunlight, heat, humidity and acids.
- ◇Hazardous Decomposition Products
 - Carbon dioxide

11. Toxicological Information

Acute Toxicity	Rat: No classification under the JIS classification criteria for either LD50 = 2800mg/kg or 4090mg/kg (SIDS (access in July 2008)); Equivalent to Category 5 in the UN GHS Rat: Category 4 based on LC50 (equivalent to 4 hours) = 1.2 mg/L (SIDS (access in July 2008))
Skin Corrosion/ Irritation	Skin irritation: Rabbit 500mg/24 hours Mild Both in the rabbit test and the human patch test, it was concluded to be “no irritation” (JETOC).
Serious Eye Damage/ Eye Irritation	The tests using rabbits showed contradictory results: “not irritating” to “highly irritating” (SIDS (access in July 2008)). In one of these tests, when eyes were not rinsed, all rabbits developed symptoms in their cornea, iris and conjunctiva (red flare and edema) and these symptoms remained even after the completion of the 14-day observation period. In this test, it is reported that the Draize maximum mean total score (MMTS) was 105. In another test in which eyes were not rinsed, corneal opacity occurred in one hour after exposure and serious effects remained

	for seven days. The Draize average scores were 3.8 for cornea and 2 for iris. Some animals developed corneal pannus and keratoconus.
	Classified as Category 1 as the above test results indicate serious irreversible damages.
	HSDB (2003): pH = 11.58 (5 wt% aqueous solution at 25 °C)
Germ Cell Mutagenicity	No data available
Carcinogenicity	No data available
Reproductive Toxicity	In the oral administration test conducted for rats, rabbits and mice during their organogenic period, no negative effect was observed in development of child animals while there were not sufficient data for effects on reproductive function and fertility of parent animals (JETOC).
Specific Target Organ Toxicity/Systemic Toxicity (Single Exposure)	Classified as Category 3 (Airway irritation) based on the following report (SIDS (access in July 2008)): In the test using rats, mice and guinea pigs, right after inhalation exposure, they developed breathing disorders, including breathing difficulty and wheezing sound, but recovered in three to four hours. After the oral administration to rats, ataxia, collapse and lethargy were observed. For those which survived, these symptoms disappeared before the fifth day (SIDS (access in July 2008)). It is also reported that no animals died though lethargy was observed in 24 hours after dermal administration (SIDS (access in July 2008)). Classified as Category 3 (Anesthetic action) as these symptoms are reversible.
Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure)	In the 3.5-month-long inhalation exposure test using rats (0.07mg/L), some rats developed histological change in their respiratory system, but there are not sufficient data for classification (JETOC).

12. Ecological Information

Persistence and Degradability

- No data available

Bioaccumulative Potential

- No data available

Ecotoxicity

- Toxicity on fish *Lepomis macrochirus* LC₅₀=300mg/L/96hr (SIDS)
- Other data on Toxicity

[Acute Toxicity]

Ceriodaphnia EC₅₀:200-227mg/L/48hr (SIDS)

Daphnia magna EC₅₀:265mg/L/48hr (SIDS)

[Chronic toxicity]

No classification for acute toxicity + Aqueous solubility \geq 1mg/L (SIDS)

Classified based on the SIDS data (JETOC)

13. Disposal Considerations

- Dispose in accordance with applicable regional, national and local laws and regulations.
- Dispose of containers after thoroughly removing their contents.

14. Transport Information

UN Number	: Not specified
UN Classification	: Not specified
Shipping Name	: Sodium Carbonate
Packing Group	: —
ICAO/IATA	: —
Marine Pollutant	: Not specified
Precautions	: Check before transport if containers are free from leakage. Load in a way to avoid overturning, falling and being broken, and take all necessary measures to prevent collapsing.

15. Regulatory Information

- No applicable laws and regulations

16. Other Information

Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.
