

MATERIAL SAFETY DATA SHEET

North American Version

Sodium Bicarbonate

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance/preparation

Product Name	:	Sodium Bicarbonate
Chemical Name	:	Sodium hydrogencarbonate
Synonyms	:	Sodium bicarbonate
Chemical Formula	:	NaHCO ₃
Molecular Weight	:	84.02
CAS Number	:	144-55-8
Grades/Trade Names	:	Animal Feed Technical Grade 1 Technical Grade 5 Coarse Industrial Grade USP Grade 1 USP Grade 1 TFF USP Grade 2 USP Grade 5

1.2. Use of the Substance/Preparation

Recommended use	:	Glass industry Chemical industry Detergent Environmental protection Food industry Flue gas emissions Water Treatment Foaming agents Animal feed
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1.3. Company/Undertaking Identification

Address	:	Solvay Chemicals, Inc. PO BOX 27328 Houston, TX 77227-7328 3333 Richmond Ave. Houston, Texas 77098
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1.4. Emergency telephone numbers

General: 1-800-765-8292 (Solvay Chemicals, Inc.,)
All Emergencies (USA & Canada): 1-800-424-9300 (CHEMTREC®)
Transportation Emergencies (INTERNATIONAL/MARITIME): 1-703-527-3887 (CHEMTREC®)
Transportation Emergencies (MEXICO-SETIQ): 01-800-00-214-00 (MEX. REPUBLIC)
525-559-1588 (Mexico City and metro area)

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

General Information

Appearance	:	Crystalline, powder
Color	:	White

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Odor : odorless

Main effects

- Mechanical irritation
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

2.2. Potential Health Effects:

Inhalation

- May be irritating to respiratory tract and mucous membranes.

Eye contact

- May be irritating.

Skin contact

- May be irritating.

Ingestion

- May be irritating.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Other toxicity effects

- See section 11: Toxicological Information

2.3. Environmental Effects:

- See section 12: Ecological Information

3. COMPOSITION OF/INFORMATION ON INGREDIENTS

Sodium Bicarbonate

CAS-No. : 144-55-8
Concentration : >=98.00 %

4. FIRST AID MEASURES

4.1. Inhalation

- Remove the subject from dusty environment and let him blow his nose.

4.2. Eye contact

- Rinse immediately with plenty of water, also under the eyelids.
- If eye irritation persists, consult a specialist.

4.3. Skin contact

- Wash off with plenty of water.

4.4. Ingestion

The following actions are recommended:

- If a large amount is swallowed, get medical attention.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).

If victim is unconscious but breathing:

- Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

5.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Extinguishing media which must not be used for safety reasons

- None

5.3. Special exposure hazards in a fire

- Not combustible.

5.4. Special protective equipment for fire-fighters

- No special precautions required.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Refer to protective measures listed in sections 7 and 8.

6.2. Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- Prevent any mixture with an acid into the sewer/drain (gas formations).

6.3. Methods for cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

7. HANDLING AND STORAGE

7.1. Handling

- Keep away from Incompatible products.

7.2. Storage

- Keep in a dry place.
- Store in original container.
- Keep container closed.
- Keep away from incompatible products.

7.3. Packaging material

- Polyethylene
- Woven plastic material
- Paper + PE.
- Polypropylene

7.4. Other information

- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Limit Values

OSHA PEL

SAEL

Sodium Bicarbonate

10 mg/m³ Total Dust

Nuisance Dust

5mg/m³ (Respirable fraction)
15 mg/m³ (Total dust)

SAEL is Solvay Acceptable Exposure Limit, Time Weighted Average for 8 hour workdays. No specific TLV-STEL (Short Term Exposure Level) has been set. Excursions in exposure level may exceed 3 times the TLV-TWA for no more than a total of 30 minutes during a workday and under no circumstances should they exceed 5 times the TLV-TWA.

8.2. Engineering controls

- Ensure adequate ventilation.
- Provide adequate exhaust ventilation at places where dust is formed.
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.

8.3.2. Hand protection

- Wear suitable gloves.

8.3.3. Eye protection

- Dust proof goggles, if dusty.

8.3.4. Skin and body protection

- Protective clothing

8.3.5. Hygiene measures

- Wash hands before breaks and at the end of the workday.
- When using, do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance	: Crystalline, powder
Color	: White
Odor	: Odorless

9.2. Important Health Safety and Environmental Information

pH	: 8.6 <i>Concentration: 52 g/l</i>
Boiling point/range	: Not applicable ; Thermal decomposition
Flash point	: Not applicable
Flammability	: Product is not flammable.
Explosive properties	: Not explosive
Oxidizing properties	: Not an oxidizer
Vapor pressure	: Not applicable
Relative density / Density	: 2.22
Partition coefficient (n-octanol/water)	: Not applicable
Viscosity	: Not applicable
Vapor density	: Not applicable
Bulk density	: from 0.5 – 1.2 /dm ³ (32-79 lbs/ft ³ - typically 60 lbs/ft ³) <i>Method: Free flow</i>
Solubility	: Water : 96 g/l <i>Temperature: 20°C (68 °F)</i>

Other:
Slightly soluble in alcohol

9.3 Other information

Melting point/range : Not applicable- Decomposition
Decomposition temperature : > 60°C (140°F)

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- None.

10.3. Materials to avoid

- Acids

10.4. Hazardous decomposition products

- None

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological data

Acute oral toxicity

- LD50, rat, > 4,000 mg/kg

Acute inhalation toxicity

- LC50, rat, > 4.74 mg/l

Acute dermal irritation/corrosion

- LD50, rabbit, no data available.

Skin irritation

- rabbit, Mild skin irritation

Eye irritation

- rabbit, Mild eye irritation

11.2 Chronic toxicity/ Carcinogenic Designation:

Chronic toxicity

- No observed effect

Genetic toxicity in vitro

- Remarks: no observed effect

Teratogenicity

- Oral route (gavage), 10 days, Various species, 330 mg/kg, Did not show teratogenic effects in animal experiments.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, *Oncorhynchus mykiss*, LC50, 96 h, 7,700 mg/l
- Fishes, *Oncorhynchus mykiss*, NOEC, 96 h, 2,300 mg/l
- Fishes, *Lepomis macrochirus*, LC50, 96 h, 7,100 mg/l
- Fishes, *Lepomis macrochirus*, NOEC, 96 h, 5,200 mg/l
- Crustaceans, *Daphnia magna*, EC50, 48 h, 4,100 mg/l

- Crustaceans, Daphnia magna, NOEC, 48 h, 3,100 mg/l

12.2. Mobility

- Air
Remarks: not applicable
- Water/ Soil/sediments
Remarks: Solubility
- Water/ Soil/sediments
Remarks: Mobility

12.3. Persistence and degradability

Abiotic degradation

- Water, Hydrolysis
- Result: acid/base equilibrium as a function of pH.
Degradation products: carbonic acid /bicarbonate/ carbonate

Biodegradation

- Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.4. Bioaccumulative potential

- Not Applicable

12.5. Other adverse effects

- No data available

12.6. Remarks

- Ecological injuries are not known or expected under normal use.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment: Sodium bicarbonate is not a listed hazardous waste under 40 CFR 261. However, state and local regulations for waste disposal may be more restrictive. Spilled product should be disposed of in accordance with applicable federal, state and local environmental laws and regulations.

13.2 Packaging treatment: To avoid treatment, use dedicated containers where possible. Rinse the empty containers and treat the effluent in the same way as waste. Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

13.3 RCRA Hazardous Waste: Not Listed

14. TRANSPORT INFORMATION

<u>Mode</u>	<u>DOT</u>	<u>IMDG</u>	<u>IATA</u>
UN Number	Not a regulated hazardous material	Not a regulated hazardous material	Not a regulated hazardous material
Other	It is recommended that ERG guide # 111 be used for all non DOT regulated material.		

15. REGULATORY INFORMATION

15.1 National Regulations (US)

TSCA Inventory 8(b): Yes

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SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355): No

SARA Title III Sec. 311/312 (40 CFR 370): No

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No

CERCLA Hazardous Substance (40CFR Part 302)

Listed: No

Unlisted Substance: No

State Component Listing: None identified

15.2 National Regulations (Canada):

Canadian NSN Registration: DSL

WHMIS Classification: Not listed

This product has been classified in accordance with the hazard criteria of the **Controlled Products Regulations** and the MSDS contains all the information required by the **Controlled Products Regulations**.

15.3 National Regulations (Europe)

EINECS #: 205-633-8

Not classified according to Directive 67/548/EEC.

16. OTHER INFORMATION

16.1 Ratings:

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health = 1 Fire = 0 Instability = 0 Special = None

HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)

Health = 1 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions

16.2 Other Information:

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The previous information is based upon our current knowledge and experience of our product and

is not exhaustive. It applies to the product as defined by the specifications. In case of combinations of mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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16.3 Reason for revision:

Supersedes edition: Solvay Chemicals, Inc. MSDS Bicarb-06-04, dated: 06-30-04

Purpose of revision: Periodic review and update; new format