SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name: Disodium carbonate
- Chemical name: Sodium carbonate
- Synonyms: Disodium carbonate
- Molecular formula: Na2CO3

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

Uses of the Substance / Mixture
- Pharmaceuticals
- Food additive
- Cosmetic additive
- photochemicals

1.3 Details of the supplier of the safety data sheet

Company
SOLVAY CHEMICALS, INC.
3737 Buffalo Speedway,
Suite 800,
Houston, TX 77098
USA
Tel: +1-800-7658292; +1-713-5256800
Fax: +1-713-5257804

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)
Eye irritation, Category 2A
H319: Causes serious eye irritation.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram

Signal Word
- Warning

Hazard Statements
- H319: Causes serious eye irritation.
Precautionary Statements

Prevention
- P264 Wash skin thoroughly after handling.
- P280 Wear eye protection/ face protection.

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.

2.3 Other hazards which do not result in classification
None identified

SECTION 3: Composition/information on ingredients

3.1 Substance

<table>
<thead>
<tr>
<th>Hazardous Ingredients and Impurities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Carbonic acid sodium salt (1:2)</td>
</tr>
</tbody>
</table>

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

3.2 Mixture
Not applicable, this product is a substance.

SECTION 4: First aid measures

4.1 Description of first-aid measures

In case of inhalation
- Move to fresh air.
- If symptoms persist, call a physician.

In case of skin contact
- Wash off with soap and water.
- If symptoms persist, call a physician.

In case of eye contact
- In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- If eye irritation persists, consult a specialist.

In case of ingestion
- Rinse mouth with water.
- Do NOT induce vomiting.
- If symptoms persist, call a physician or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Symptoms
- At high concentrations:
  - Cough

**Effects**
- May cause nose, throat, and lung irritation.

**Repeated or prolonged exposure**
- Risk of sore throat, nose bleeds

**In case of skin contact**
**Effects**
- Prolonged skin contact may cause skin irritation.

**In case of eye contact**
**Symptoms**
- Redness
- Lachrymation
- Swelling of tissue

**Effects**
- Severe eye irritation

**In case of ingestion**
**Symptoms**
- Severe irritation
- Nausea
- Abdominal pain
- Vomiting
- Diarrhea

4.3 **Indication of any immediate medical attention and special treatment needed**

**Notes to physician**
- If accidentally swallowed obtain immediate medical attention.

### SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th><strong>Flash point</strong></th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability / Explosive limit</strong></td>
<td>no data available</td>
</tr>
</tbody>
</table>

5.1 **Extinguishing media**

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

**Unsuitable extinguishing media**
- None.

5.2 **Special hazards arising from the substance or mixture**

**Specific hazards during fire fighting**
- Not combustible.

**Hazardous combustion products:**
- none
- Barium oxide
- Other hazardous decomposition products may be formed.
5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

### SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

**Advice for non-emergency personnel**
- Evacuate personnel to safe areas.
- Avoid dust formation.

**Advice for emergency responders**
- Use personal protective equipment.
- Sweep up to prevent slipping hazard.

6.2 Environmental precautions
- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.
- Prevent any mixture with an acid into the sewer/drain (gas formations).
- Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up
- Sweep up and shovel into suitable containers for disposal.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections
- Refer to protective measures listed in sections 7 and 8.

### SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Ensure adequate ventilation.
- Minimize dust generation and accumulation.
- Avoid contact with skin and eyes.
- Keep away from incompatible products

**Hygiene measures**
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities
Technical measures/Storage conditions
- Store in original container.
- Keep in a dry place.
- Keep in properly labeled containers.
- Keep container closed.
- Keep away from:
  - Incompatible products

Packaging material
Suitable material
- Polyethylene
- Woven plastic material.

Unsuitable material
- Material moisture permeable

7.3 Specific end use(s)
- This product is not intended to be used for parenteral applications.
- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Value type</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particles not otherwise specified (PNOS)</td>
<td>TWA</td>
<td>15 mg/m³</td>
<td>Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Form of exposure: total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Form of exposure: respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Form of exposure: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Control measures

Engineering measures
- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- Effective dust mask
- In case of insufficient ventilation, wear suitable respiratory equipment.
- Effective dust mask
- Use only respiratory protection that conforms to international/national standards.
- Use NIOSH approved respiratory protection.

Hand protection
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Wear suitable gloves.

Suitable material
- Neoprene
- Natural Rubber

Eye protection
- Safety goggles

Skin and body protection
- Dust impervious protective suit
- Rubber or plastic boots
- Rubber or plastic apron

Hygiene measures
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.
SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>powder</td>
</tr>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Particle size</td>
<td>&lt; 160 µm (80 - 100 %)</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>odorless</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>no data available</td>
</tr>
<tr>
<td><strong>Molecular weight</strong></td>
<td>106 g/mol</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>11.2 (4 g/l) (77 °F (25 °C))</td>
</tr>
<tr>
<td></td>
<td>11.3 (10 g/l) (77 °F (25 °C))</td>
</tr>
<tr>
<td><strong>pKa</strong></td>
<td>6.4 - 10.3</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Melting point/range: 1564 °F (851 °C)</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Boiling point/boiling range: ()</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation rate (Butylacetate = 1)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability / Explosive limit</strong></td>
<td>Explosiveness: Not applicable</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>negligible</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>Bulk density: 0.5 - 0.8 kg/dm³</td>
</tr>
<tr>
<td></td>
<td>Method: Free flow</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>2.53 (68 °F (20 °C))</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Water solubility:</td>
</tr>
<tr>
<td></td>
<td>71 g/l (32 °F (0 °C))</td>
</tr>
<tr>
<td></td>
<td>215 g/l (68 °F (20 °C))</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>&gt; 752 °F (&gt; 400 °C)</td>
</tr>
</tbody>
</table>
Viscosity

Viscosity, dynamic: Not applicable

Explosive properties

no data available

Oxidizing properties

Not considered as oxidizing.

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- Decomposes by reaction with strong acids.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- no data available

10.4 Conditions to avoid

- Exposure to moisture.

10.5 Incompatible materials

- Finely divided aluminum

10.6 Hazardous decomposition products

- none

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

LD50: 2,800 mg/kg - Rat, male and female
The product has a low acute toxicity
Unpublished reports

Acute inhalation toxicity

no data available

Acute dermal toxicity

LD50: > 2,000 mg/kg - Rabbit
Method: according to a standardized method
Not classified as hazardous for acute dermal toxicity according to GHS.
No mortality observed at this concentration.
Unpublished reports

Acute toxicity (other routes of administration)

no data available
Skin corrosion/irritation
Rabbit
Not classified as irritating to skin
Method: OECD Test Guideline 404
Unpublished reports

Serious eye damage/eye irritation
Rabbit
Irritating to eyes.
Method: according to a standardized method
Unpublished reports

Respiratory or skin sensitization
no data available

Mutagenicity
Genotoxicity in vitro
By analogy
Ames test
with metabolic activation
Product is not considered to be genotoxic
Published data

Strain: Escherichia coli
without metabolic activation
negative
Product is not considered to be genotoxic
Published data

Genotoxicity in vivo
no data available

Carcinogenicity
no data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
ACGIH
Toxicity for reproduction and development

Toxicity to reproduction / fertility  no data available

Developmental Toxicity/Teratogenicity

Mouse, female
Application Route: Oral
NOAEL teratogenicity: >= 580 mg/kg
NOAEL maternal: >= 580 mg/kg
Method: according to a standardized method
no embryotoxic or teratogenic effects have been observed
Unpublished reports

STOT

STOT-single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
internal evaluation

STOT-repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure according to GHS criteria.
internal evaluation

Aspiration toxicity  no data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

LC50 - 96 h: 300 mg/l - Lepomis macrochirus (Bluegill sunfish)
static test
Analytical monitoring: no
Method: according to a standardized method
Not harmful to fish (LC/LL50 > 100 mg/L)
Published data

Acute toxicity to daphnia and other aquatic invertebrates.

EC50 - 48 h: 200 - 227 mg/l - Ceriodaphnia dubia (water flea)
semi-static test
Method: according to a standardized method
Not harmful to aquatic invertebrates. (EC/EL50 > 100 mg/L)
Published data

Toxicity to aquatic plants  no data available
Toxicity to microorganisms  no data available

Chronic toxicity to fish  no data available

Chronic toxicity to daphnia and other aquatic invertebrates.  no data available

Chronic Toxicity to aquatic plants  no data available

12.2 Persistence and degradability

**Abiotic degradation**

**Photodegradation**

hydrolyzes
Test substance: Water
carbonic acid/bicarbonate/carbonate
acid/base equilibrium as a function of pH

**Physical- and photo-chemical elimination**  no data available

**Biodegradation**

**Biodegradability**  Not applicable, inorganic substance

**Degradability assessment**

The product is not considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

**Partition coefficient: n-octanol/water**  no data available

**Bioconcentration factor (BCF)**  Not applicable, inorganic substance
12.4 Mobility in soil

Adsorption potential (Koc)

Air
Not applicable

Solubility(ies)
Water

Mobility
Water

Soil/sediments
not significant

Known distribution to environmental compartments
no data available

12.5 Results of PBT and vPvB assessment

Not applicable, inorganic substance

12.6 Other adverse effects

no data available

Ecotoxicity assessment

Acute aquatic toxicity
Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)

Chronic aquatic toxicity
Not classified due to data which are conclusive although insufficient for classification.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal
- Contact waste disposal services.
- If recycling is not practicable, dispose of in compliance with local regulations.
- Dilute with plenty of water.
- Neutralize with acid.
- In accordance with local and national regulations.

Waste Code
- Environmental Protection Agency
- Hazardous Waste – NO
Advice on cleaning and disposal of packaging
- Where possible recycling is preferred to disposal or incineration.
- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

**DOT**
not regulated

**TDG**
not regulated

**NOM**
not regulated

**IMDG**
not regulated

**IATA**
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

**15.1 Notification status**

<table>
<thead>
<tr>
<th>Inventory Information</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States TSCA Inventory</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Mexico INSQ (INSQ)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Canadian Domestic Substances List (DSL)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>New Zealand. Inventory of Chemical Substances</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Japan. CSCL - Inventory of Existing and New Chemical Substances</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Korea. Korean Existing Chemicals Inventory (KECI)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>China. Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)</td>
<td>If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.</td>
</tr>
</tbody>
</table>

**15.2 Federal Regulations**

**US. EPA EPCRA SARA Title III**

Section 313 Toxic Chemicals (40 CFR 372.65)
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)
This material does not contain any components with a CERCLA RQ.

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification
- Health: 2 moderate
- Flammability: 0 minimal
- Instability or Reactivity: 0 minimal
- Special Notices: None

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification
- Health: 2 moderate
- Flammability: 0 minimal
- Reactivity: 0 minimal
- PPE: Determined by User; dependent on local conditions

Further information
- Product evaluated under the US GHS format.

Date Prepared: 03/16/2017

Key or legend to abbreviations and acronyms used in the safety data sheet
- TWA: 8-hour, time-weighted average
- SAEL: Solvay Acceptable Exposure Limit
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.