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SODA SOLVAY ® DENSE

Revision Date 04/23/2015

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

1.1 Product identifier

- | | |
|---------------------|---------------------------------|
| - Trade name | SODA SOLVAY ® DENSE |
| - Chemical Name | Sodium carbonate |
| - Synonyms | Dense Sodium Carbonate/Soda Ash |
| - Molecular formula | Na ₂ CO ₃ |

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

Uses of the Substance / Mixture

- Glass industry
- Detergent
- Chemical industry
- Metallurgy.
- Purifying flue gas

1.3 Details of the supplier of the safety data sheet

Company

SOLVAY CHEMICALS, INC.
 3333 RICHMOND AVENUE
 77098-3099, HOUSTON
 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 StatementsPrevention

- 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.

Additional Labeling

- The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 1 %

2.3 Other hazards which do not result in classification

None identified

SECTION 3: Composition/information on ingredients**3.1 Substance****Hazardous Ingredients and Impurities**

Chemical Name	Identification number CAS-No.	Concentration [%]
Carbonic acid sodium salt (1:2)	497-19-8	>= 99

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**

- None.

SECTION 5: Firefighting measures

<u>Flash point</u>	Not applicable
<u>Autoignition temperature</u>	Not applicable
<u>Flammability / Explosive limit</u>	no data available

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

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

- Avoid dust formation.

Advice for emergency responders

- 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.

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)

- Contact your supplier for additional information
- This grade of the product is not intended for pharmaceutical, feed or food applications.

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**

Ingredients	Value type	Value	Basis
Carbonic acid sodium salt (1:2)	TWA	10 mg/m ³	Solvay Acceptable Exposure Limit

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
- 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**Appearance**

Form: powder
Physical state: solid
Color: white
 white

Particle size

> 125 µm (85 - 90 %)

Odor

odorless

Odor Threshold

no data available

pH

11.2 (4 g/l) (77 °F (25 °C))
 11.3 (10 g/l) (77 °F (25 °C))

pKa: 6.4

10.3

Melting point/range

1564 °F (851 °C)

<u>Boiling point/boiling range</u>	Not applicable
<u>Flash point</u>	Not applicable
<u>Evaporation rate (Butylacetate = 1)</u>	Not applicable
<u>Flammability (solid, gas)</u>	Not applicable
<u>Flammability / Explosive limit</u>	<u>Explosiveness:</u> Not applicable
<u>Autoignition temperature</u>	Not applicable
<u>Vapor pressure</u>	negligible
<u>Vapor density</u>	Not applicable
<u>Density</u>	<u>Bulk density:</u> 0.97 - 1.10 kg/dm ³ Method: Free flow <u>Relative density:</u> 2.53 (68 °F (20 °C))
<u>Solubility</u>	<u>Water solubility :</u> 71 g/l (32 °F (0 °C)) 212.5 g/l (68 °F (20 °C))
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Thermal decomposition</u>	> 752 °F (> 400 °C)
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> Not applicable
<u>Explosive properties</u>	no data available
<u>Oxidizing properties</u>	Not considered as oxidizing.

9.2 Other information

Molecular weight 106 g/mol

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.
internal evaluation

STOT-repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
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 (LC50 > 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. (EC50 > 100 mg/L)
Published data

12.2 Persistence and degradability**Abiotic degradation****Photodegradation**

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

Biodegradation**Biodegradability**

Not applicable, inorganic substance

Degradability assessment

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

12.3 Bioaccumulative potential**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

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/EC50 > 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

- RCRA Hazardous Waste (40 CFR 302)
- 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**

Inventory Information	Status
United States TSCA Inventory	- One or more components not listed on inventory
Mexico INSQ (INSQ)	- In compliance with the inventory
Canadian Domestic Substances List (DSL)	- One or more components not listed on inventory
New Zealand. Inventory of Chemical Substances	- In compliance with the inventory
Australia Inventory of Chemical Substances (AICS)	- One or more components not listed on inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- One or more components not listed on inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- One or more components not listed on inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- One or more components not listed on inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory

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: 04/23/2015

- 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

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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.