

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name BICAR® USP Grade 1

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture**

- Detergent
- Environmental protection
- Chemical industry
- Purifying flue gas
- Water treatment
- Foaming agent
- Tanning agents
- Manufacture of pulp, paper and paper products
- Blasting Agent

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)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS)

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS)

Additional Labeling

- The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 2 %

2.3 Other hazards which do not result in classification

- None known.

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical nature Substance

Hazardous Ingredients and Impurities

| Chemical Name | Identification number CAS-No. | Concentration [%] |
|--------------------|----------------------------------|-------------------|
| Sodium bicarbonate | 144-55-8 | >= 98 |

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.

In case of eye contact

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

In case of ingestion

- Rinse mouth with water.
- 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****Effects**

- No hazards to be specially mentioned.
- At high concentrations:
- slight irritation

In case of skin contact**Effects**

- No hazards to be specially mentioned.
- **Repeated or prolonged exposure**
- Contact with dust can cause mechanical irritation or drying of the skin.

In case of eye contact**Effects**

- Dust contact with the eyes can lead to mechanical irritation.

In case of ingestion**Effects**

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

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

- When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5: Firefighting measures

| | |
|--|-------------------|
| <u>Flash point</u> | inorganic |
| <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

- Not combustible.
- Dust may form explosive mixture in air.

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.
- Prevent further leakage or spillage.

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 and materials for containment and cleaning up

- Pick up and transfer to 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

- 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**

- Paper.
- Polyethylene

Unsuitable material

- no data available

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 |
|--|------------|----------------------|---|
| Sodium bicarbonate | TWA | 10 mg/m ³ | Solvay Acceptable Exposure Limit |
| Particles not otherwise specified (PNOS) | | | National Institute for Occupational Safety and Health Includes all inert or nuisance dusts, whether mineral, inorganic, not listed specifically in 1910.1000., See Appendix D - Substances with No Established RELs |
| Particles not otherwise specified (PNOS) | TWA | 15 mg/m ³ | Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants Form of exposure : total dust 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. |
| Particles not otherwise specified (PNOS) | TWA | 5 mg/m ³ | Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants Form of exposure : respirable fraction 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. |
| Particles not otherwise specified (PNOS) | TWA | 10 mg/m ³ | American Conference of Governmental Industrial Hygienists Form of exposure : Inhalable fraction |
| Particles not otherwise specified (PNOS) | TWA | 3 mg/m ³ | American Conference of Governmental Industrial Hygienists Form of exposure : Respirable fraction |

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**

- Use only respiratory protection that conforms to international/ national standards.
- Respirator with a dust filter

Hand protection

- Impervious gloves

Eye protection

P0100000103

Version : 1.04 / US (Z8)

www.solvay.com



- Safety goggles

Skin and body protection

- No special protective equipment required.

Hygiene measures

- 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

| | |
|--------------------------|----------------------------------|
| <u>Appearance</u> | Form: crystalline, powder |
| | Physical state: solid |
| | Color: white |

| | |
|--------------------|----------|
| <u>Odor</u> | odorless |
|--------------------|----------|

| | |
|------------------------------|-------------------|
| <u>Odor Threshold</u> | no data available |
|------------------------------|-------------------|

| | |
|------------------|------------------------------------|
| <u>pH</u> | 8.4 (ca. 8.4 g/l) (77 °F (25 °C)) |
| | 8.6 (ca. 52 g/l) |
| | pKa: 6.3 |

| | |
|-----------------------------------|------------------------|
| <u>Melting point/range</u> | Decomposes on heating. |
|-----------------------------------|------------------------|

| | |
|---|-----------------------|
| <u>Boiling point/boiling range</u> | Thermal decomposition |
|---|-----------------------|

| | |
|---------------------------|-----------|
| <u>Flash point</u> | inorganic |
|---------------------------|-----------|

| | |
|---|-------------------|
| <u>Evaporation rate (Butylacetate = 1)</u> | no data available |
|---|-------------------|

| | |
|---|-------------------------------|
| <u>Flammability (solid, gas)</u> | The product is not flammable. |
|---|-------------------------------|

| | |
|--|---------------------------------------|
| <u>Flammability / Explosive limit</u> | Explosiveness: Not expected |
|--|---------------------------------------|

| | |
|--|----------------|
| <u>Autoignition temperature</u> | Not applicable |
|--|----------------|

| | |
|------------------------------|-----------------------|
| <u>Vapor pressure</u> | Thermal decomposition |
|------------------------------|-----------------------|

| | |
|-----------------------------|----------------|
| <u>Vapor density</u> | Not applicable |
|-----------------------------|----------------|

| | |
|-----------------------|-------------------------|
| <u>Density</u> | 2.21 kg/dm ³ |
|-----------------------|-------------------------|

Bulk density: 0.5 - 1.3 kg/dm³

Relative density: 2.21 - 2.23 (68 °F (20 °C))

| | |
|--|--|
| <u>Solubility</u> | <u>Water solubility :</u> 69 g/l (32 °F (0 °C)) 93 g/l (68 °F (20 °C)) 165 g/l (140 °F (60 °C)) <u>Solubility in other solvents:</u> Alcohol : insoluble |
| <u>Partition coefficient: n-octanol/water</u> | inorganic |
| <u>Thermal decomposition</u> | > 122 °F (50 °C) |
| <u>Viscosity</u> | <u>Viscosity, dynamic :</u> Not applicable |
| <u>Explosive properties</u> | no data available |
| <u>Oxidizing properties</u> | Not expected |

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- Incompatible with acids.
- Decomposes slowly on exposure to water.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- none

10.4 Conditions to avoid

- Exposure to moisture.
- To avoid thermal decomposition, do not overheat.

10.5 Incompatible materials

- Acids

10.6 Hazardous decomposition products

- none

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

LD50 : > 4,000 mg/kg - Rat , male and female
 Method: according to a standardized method
 The product has a low acute toxicity
 Unpublished reports

Acute inhalation toxicity

LC50 - 4.5 h (Dust) : > 4.74 mg/l - Rat , male and female
 Method: according to a standardized method
 Not classified as hazardous for acute inhalation toxicity according to GHS.
 Unpublished reports

Acute dermal toxicity

no data available

Acute toxicity (other routes of administration)

no data available

Skin corrosion/irritation

Rabbit
 slight irritation
 Method: OECD Test Guideline 404
 Unpublished reports

Serious eye damage/eye irritation

Rabbit
 slight irritation
 Method: OECD Test Guideline 405
 Unpublished reports

Respiratory or skin sensitization

no data available

Mutagenicity**Genotoxicity in vitro**

Strain: Escherichia coli
 with and without metabolic activation

negative
 Method: according to a standardized method
 Published data

Ames test
 with metabolic activation

negative
 Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
 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

Rat , female
Application Route: Oral
NOAEL teratogenicity: > 340 mg/kg
Method: according to a standardized method
Highest dose tested
The product is not considered to be embryotoxic / fetotoxic.
Unpublished reports

Rabbit , female
Application Route: Oral
NOAEL teratogenicity: > 330 mg/kg

Method: according to a standardized method
Highest dose tested
The product is not considered to be embryotoxic / fetotoxic.
Unpublished reports

STOT

STOT-single exposure

Routes of exposure: Oral, Inhalation
The substance or mixture is not classified as specific target organ toxicant, single exposure.
internal evaluation

STOT-repeated exposure no data available

Aspiration toxicity no data available

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

LC50 - 96 h : 7,100 mg/l - Lepomis macrochirus (Bluegill sunfish)
flow-through test
Analytical monitoring: yes

Method: according to a standardized method
Unpublished internal reports
Not harmful to fish (LC50 > 100 mg/L)

Acute toxicity to daphnia and other aquatic invertebrates.

EC50 - 48 h : 4,100 mg/l - Daphnia magna (Water flea)
flow-through test
Analytical monitoring: yes

Method: according to a standardized method
Unpublished internal reports
Not harmful to aquatic invertebrates. (EC50 > 100 mg/L)

Chronic toxicity to daphnia and other aquatic invertebrates.

NOEC: > 576 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test

Analytical monitoring: no
Method: OECD Test Guideline 211
Highest concentration tested
Published data
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

12.2 Persistence and degradability**Biodegradation****Biodegradability**

Not applicable, inorganic substance

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

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/EC50 > 100 mg/L)

Chronic aquatic toxicity

No adverse chronic effect observed up to and including the threshold of 1 mg / L.

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.

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 | - Listed on Inventory |
| Canadian Domestic Substances List (DSL) | - Listed on Inventory |
| Australia Inventory of Chemical Substances (AICS) | - Listed on Inventory |
| Japan. CSCL - Inventory of Existing and New Chemical Substances | - Listed on Inventory |
| Korea. Korean Existing Chemicals Inventory (KECI) | - Listed on Inventory |
| China. Inventory of Existing Chemical Substances in China (IECSC) | - Listed on Inventory |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | - Listed on Inventory |

15.2 Federal Regulations**US. EPA EPCRA SARA Title III****SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)**

| | |
|-----------------------------------|----|
| Fire Hazard | no |
| Reactivity Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Acute Health Hazard | no |
| Chronic Health Hazard | no |

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 | 1 slight |
| Flammability | 0 minimal |
| Instability or Reactivity | 0 minimal |

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

| | |
|--------------|---|
| Health | 1 slight |
| 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: 05/20/2015

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA Limit Value - eight hours
- 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.