

SAFETY DATA SHEETS

This SDS packet was issued with item:

078084616

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

078084582 078084608 078772660 078936707 078943015 078943579 078943611 078944104

Material Safety Data Sheet

Printing date 12/17/2013

Version Number 1.2

Reviewed on 12/17/2013

1 Identification**Product identifier**Trade name: **SODASORB 4-8 IND H MED**

MSDS ID Number: 59501-V2.0

Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

W.R. Grace & Co. -Conn.
62 Whittemore Avenue
Cambridge, MA 02140 USA

Other Country Contact Information:

For products distributed beyond the country Manufacturer/Supplier identified above
Consult Section 16 for additional emergency contact information.

www.gracedarex.com**Information department:**

Environmental Health & Safety
USA: +1-617-876-1400 (24 hours)
+1-800-354-5414 (8AM - 5PM) Not functional within Massachusetts

Transport Emergency: Chemtrec +1-800-424-9300 (24 hours)**2 Composition/information on ingredients****Chemical characterization: Mixtures****Description:** The product is a formulated soda lime supplied as granules.

Hazardous components:		
1305-62-0	Calcium hydroxide	50-100%
1310-73-2	Sodium hydroxide	2.0-5.0%

Additional information: Test data shows the preparation to be an irritant (see Section 11).**3 Hazard(s) identification****Classification of the substance or mixture**

The product has to be labeled in accordance with applicable regulations.

Information concerning hazards for human and environment:

Irritating to skin.
Risk of serious damage to eyes.

Safety phrases:

When using do not eat or drink.
Do not breathe dust.

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In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately.
See Section 13 for disposal information.

Hazard description: Irritant.**Inhalation:** Causes respiratory tract irritation.**Eye Contact:** Causes serious eye damage.**Skin Contact:** Harmful in contact with skin and if swallowed.**Skin Absorption:** Not expected to be harmful if absorbed through the skin.**NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 2

Flammability = 0

Reactivity = 0

4 First-aid measures**After inhalation:**

Take affected persons into fresh air and keep quiet.

Seek immediate medical advice.

If symptoms develop, supply fresh air. If required, provide artificial respiration and seek immediate medical treatment.

After skin contact:

Take off immediately all contaminated clothing. Wash with soap and water.

Immediately wash contaminated skin with soap or mild detergent and water. If this chemical soaks clothing, immediately remove clothing and wash skin.

Seek immediate medical advice.

After eye contact:

Rinse opened eye for several minutes under running water.

Seek immediate medical advice.

After swallowing:

Do not induce vomiting; immediately call for medical help.

Wash out mouth with water.

Never give anything by mouth to an unconscious person.

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5 Fire-fighting measures**Suitable extinguishing agents:** Use fire fighting measures that suit the environment.**Special hazards arising from the substance or mixture** No further relevant information available.**Additional information** Collect contaminated fire fighting water separately. It must not enter the sewage system.**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

Environmental precautions: Do not allow to enter sewers/ surface or ground water.**Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Contain and/or absorb spill with inert material (i.e. sand, vermiculite) then place in a suitable container.

Sweep up spilled product into receptacles.

Dispose contaminated material as waste according to section 13 of the MSDS.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling:****Precautions for safe handling**

Risk of serious damage to eyes.

Open and handle receptacle with care.

Prevent formation of dust.

Store in original containers.

Do not breathe dust.

Information about protection against explosions and fires:

Empty containers may retain hazardous residue, both liquid and vapor.

Storage:**Information about storage in one common storage facility:** Store away from water.

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Further information about storage conditions:

Store only in original containers in a dry, well ventilated area.

Keep receptacle tightly sealed.

Protect from exposure to the light.

Specific end use(s) No further relevant information available.**8 Exposure controls/personal protection****Additional information about design of technical systems:** No further data; see item 7.**Components with limit values that require monitoring at the workplace:****1305-62-0 Calcium hydroxide**

PEL	15* 5** mg/m ³ *total dust **respirable fraction
REL	5 mg/m ³
TLV	5 mg/m ³

1310-73-2 Sodium hydroxide

PEL	2 mg/m ³
REL	Short-term value: C 2 mg/m ³
TLV	Short-term value: C 2 mg/m ³

Additional information: The lists that were valid during the creation were used as basis.**Personal protective equipment:****General protective and hygienic measures:**

Avoid contact with the eyes and skin.

Do not breathe dust.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Gloves should be worn to prevent skin contact and should be impermeable and resistant to the product.

Eye protection:

Safety glasses with side shield protection.

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A face shield should also be worn if there is potential exposure to splash or spray.

Body protection: Protective work clothing* **9 Physical and chemical properties****General Information****Appearance:**

Form:	Off-white pellets.
Color:	According to product specification
Odor:	Characteristic
Odour threshold:	Not determined.

pH-value (~): Not applicable.**Change in condition****Melting point/Melting range:** Undetermined.**Flash point:** Not applicable.**Flammability (solid, gaseous):** Not determined.**Decomposition temperature:** Not determined.**Auto igniting:** Product is not selfigniting.**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.
VOC Content (max):	Not determined.

Vapor pressure: Not applicable.**Density: (~)** Not determined.**Vapour density** Not applicable.**Evaporation rate** Not applicable.**Solubility in / Miscibility with****Water:** Slightly soluble.**Partition coefficient (n-octanol/water):** Not determined.**Viscosity:****Dynamic:** Not applicable.**Kinematic:** Not applicable.**Other information**

No further relevant information available.

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10 Stability and reactivity**Thermal decomposition:** No decomposition if used according to specifications.**Possibility of hazardous reactions**

May react with trichloroethylene, producing dichloroacetylene, carbon monoxide and phosgene.

Incompatible materials: No further relevant information available.**Hazardous decomposition products:** None.**Additional information:** See section 7 for information on handling, storage and conditions to be avoided.**11 Toxicological information****Acute toxicity:****LD/LC50 values relevant for classification:****1305-62-0 Calcium hydroxide**

Dermal | LD50 | 7340 mg/kg (rat)

1310-73-2 Sodium hydroxide

Dermal | LD50 | 2000 mg/kg (rat)

Primary irritant effect:**on the skin:**

Caustic effect on skin and mucous membranes.

Causes burns.

on the eye:

Strong irritant with the danger of severe eye injury.

Strong irritant with the danger of severe eye injury.

Additional Toxicological Information:

Toxicity (skin irritation) :Irritant

May cause respiratory irritation.

IARC (International Agency for Research on Cancer) Human Carcinogenicity:**Group 1- Positive, Group 2A- Probable, Group 2B- Possible, Group 3- Not Classifiable**

None of the ingredients is listed.

NTP (National Toxicology Program)**K-Known to be carcinogenic, R-May reasonably be anticipated to be carcinogenic**

None of the ingredients is listed.

12 Ecological information**Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.

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Behavior in environmental systems:**Bioaccumulative potential** Does not accumulate in organisms**Additional ecological information:****General notes:**

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Slightly hazardous for water

* **13 Disposal considerations****Waste treatment methods**

Comply with Federal, State and local regulations.

Waste product is not defined as hazardous by US EPA.

Uncleaned packagings:**Recommendation:**

Disposal must be made according to official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

* **14 Transport information****UN-Number**

DOT, ADR, IMDG, IATA

Not applicable.

UN proper shipping name

DOT, ADR, IMDG, IATA

Not applicable.

Transport hazard class(es)

DOT, ADR, IMDG, IATA

Class

Not applicable.

ADN/R Class:

Not applicable.

-

Packing group

DOT, ADR, IMDG, IATA

Not applicable.

Environmental hazards:

Marine pollutant:

No

Special precautions for user

Not applicable.

**Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code**

Not applicable.

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Transport/Additional information:**DOT****Remarks:** Not Regulated.**ADR****Remarks:** Not Regulated.**IMDG****Remarks:** Not Regulated.**IATA****Remarks:** Not Regulated.**15 Regulatory information****SARA (Superfund Amendments and Reauthorization Act)****Section 302/304 (extremely hazardous substances):**

None of the ingredients is listed.

Section 313 Reportable Ingredients (Chemicals present below reporting threshold are exempt):

None of the ingredients is listed.

SARA Section 312/Tier I & II Hazard Categories:

Health Immediate (acute)	Yes
Health Delayed (chronic)	No
Flammable	No
Reactive	No
Pressure	No

North America Chemical Inventory Status**TSCA (Toxic Substances Control Act - United States):**

All ingredients are listed or exempt from listing unless otherwise noted below.

CEPA (Canadian DSL):

All ingredients are listed or exempt from listing unless otherwise noted below.

California Proposition 65**Chemicals known to cause cancer:**

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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WHMIS Classification(s):

D2B - Toxic material causing other toxic effects

**Carcinogenicity Categories****EPA (Environmental Protection Agency)**

None of the ingredients is listed.

TLV-ACGIH (THE American Conference of Governmental Industrial Hygienists)**Human Carcinogen - A1 Confirmed, A2 Suspected, A3 Unknown Relevance, A4 Not Classifiable**

None of the ingredients is listed.

NIOSH-Cancer (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

OSHA-Cancer (Occupational Safety & Health Administration)

None of the ingredients is listed.

Volatile Organic Compounds (VOC) reported per the Emission Standards for Architectural Coatings:

If no g/L value is provided this product is not subject to above standard.

European EINECS

Inventory listing could not be confirmed for one or more substances.

Philippines Inventory of Chemicals and Chemical Substances PICCS

Inventory listing could not be confirmed for one or more substances.

Inventory of Existing Chemical Substances manufactured or imported in China IECSC

Inventory listing could not be confirmed for one or more substances.

Australian Inventory of Chemical Substances AICS

Inventory listing could not be confirmed for one or more substances.

Japan Existing and New Chemical Substance List ENCS

Inventory listing could not be confirmed for one or more substances.

Korean Existing Chemical Inventory

Inventory listing could not be confirmed for one or more substances.

Non-hazardous Ingredients

7732-18-5 | Water

*

16 Other information

"The data included herein are presented in accordance with various environment, health and safety regulations. It is the responsibility of a recipient of the data to remain currently informed on chemical hazard information, to design and update its own program and to comply with all national, federal, state and local laws and regulations applicable to safety, occupational health, right-to-know and environmental protection."

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Department issuing MSDS:**Other Information:**

In the previous MSDS, version control was by Issue Number and Date. With the change to automated MSDS creation software, version control is now based on printing and review dates which appear at the top of each page. Also consequent on this change, amendments have been made in all Sections of this MSDS. In future updates to MSDS, amended sections will be indicated by an asterisk (*) in the left-hand margin.

The first date of preparation 05/30/2012**Number of revision times and the latest revision date** 2.2 / 12/17/2013**Sources**

Raw material suppliers' safety data sheets were used as key data sources in the preparation of this safety data sheet.

USA



DAREX®

W. R. Grace & Co.
62 Whittemore Avenue
Cambridge, MA 02140

SAFETY DATA SHEET

EMERGENCY PHONE NO. (617) 876-1400

Rev. 1, Ver. 15

SECTION I - IDENTIFICATION

PRODUCT (TRADE) NAME: SODASORB® Absorbent

General Chemical Description: Alkaline carbon dioxide absorbent

NOTE: This MSDS covers the following non-medical grades of SODASORB®:

SODASORB® 4-8 IND H
SODASORB® 4-8 IND HP
SODASORB® 4-8 REG HP
SODASORB® 4-8 REG L
SODASORB® 6-12 IND L

SECTION II - INGREDIENTS

<u>Hazardous Ingredients</u>	<u>% by Weight</u>	<u>OSHA PEL*</u>	Maximum Exposure Value (ppm) (8 hour time-weighted average)
			<u>ACGIH TLV**</u>
calcium hydroxide [CAS#1305-62-0]	above 80	5 mg/m ³	5 mg/m ³
potassium hydroxide [CAS#1310-58-3]	below 3	2 mg/m ³ (ceiling)	2 mg/m ³ (ceiling)
sodium hydroxide [CAS#1310-73-2]	below 2	2 mg/m ³ (ceiling)	2 mg/m ³ (ceiling)

* 29 CFR Section 1910.1000, July 1, 1992

** 1999 recommendation, American Conference of Governmental Industrial Hygienists

Other Ingredients

pH indicator (IND grades only)

% by Weight

below 1

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SAFETY DATA SHEET

SODASORB® Absorbent

SECTION III - PHYSICAL DATA

Solubility in Water: Slightly soluble

Specific Gravity (water=1): Approx. 2

Appearance: White to off-white granules

Odor: No odor

Volatiles (% by weight): 0 - 19 as moisture loss

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Non-flammable (See Section VIII.)

SECTION V - REACTIVITY DATA

Product is stable; hazardous polymerization will not occur.

Will react (be neutralized) with acids. May react with chloroform slightly, producing sodium formate, carbon monoxide, and phosgene. May react with trichloroethylene, producing dichloroacetylene, carbon monoxide, and phosgene.

SECTION VI - SPILL OR LEAK PROCEDURES

Handling Precautions: See Section VIII.

For Small Spills: Scoop up and place in closed fibre-board or lined metal containers. Rinse area with water. Wash area with soapy water and rinse.

For Large Spills: Scrape or shovel into containers.

Dispose of all product wastes and water rinses in accordance with current local, state, and Federal regulations.

Unused material is not a hazardous waste as defined in 40 CFR Sec. 261.3.



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SAFETY DATA SHEET

SODASORB® Absorbent

SECTION VII - HEALTH HAZARD DATA

Threshold Limit Values: See Section II.

	<u>Signs & Symptoms of Acute Exposure</u>	<u>Emergency First Aid Procedures</u>
<u>Inhalation:</u>	Dust can cause irritation and injury to the respiratory system.	Remove to fresh air.
<u>Eyes:</u>	Severe irritation upon contact. Risk of serious damage to eyes.	Immediately flush eyes with water for at least 15 minutes; get medical attention.
<u>Skin:</u>	Irritation upon direct contact.	Wash affected area with water; if irritation occurs and persists, get medical attention. Remove contaminated clothing.
<u>Ingestion:</u>	Harmful if swallowed.	Dilute with weak vinegar solution or a 5% solution of ammonium chloride if these are available. If not, dilute with large quantities of water. Do not induce vomiting. Get medical attention.

CHRONIC EFFECTS: None known.

Medical Conditions Aggravated by Overexposure: Preexisting skin diseases may be aggravated.

GET MEDICAL ATTENTION IF SYMPTOMS PERSIST

SECTION VIII - SPECIAL PRECAUTIONS

Handling and Storing:

- Keep all SODASORB® that has been used with highly flammable anesthetics away from heat, sparks, and open flames, as residual amounts of these materials will be present.
- Avoid breathing dust.
- Avoid skin and eye contact.
- Keep from freezing; absorption rates may be reduced at temperatures below freezing.
- Freezing of product may increase fines.
- Do not leave SODASORB® exposed to air for extended periods; this will cause moisture loss.
- Avoid prolonged storage under direct ultraviolet light; this depletes dye contained in Indicator SODASORB®.

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Obtained by Global Safety Management, www.globalsafety.net.com, (877) 683-7460

1 Identification

- **Product identifier**
- **Trade name: SODASORB® 4-8 IND H MED**
- **Application of the substance / the preparation:**
Absorbent
Intermediate product of varied applicability in industry and trade.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Alltech Associates, Inc.
GRACE Discovery Sciences
2051 Waukegan Road
Deerfield, IL 60015
U. S. A.
- **Information department:**
Health and Safety (9 AM to 5 PM-EST) 1-410-531-4000
MSDS.Davison@grace.com
- **Emergency telephone number:**
Chemtrec North America: +1-800-424-9300
Chemtrec International: +1-703-527-3887
Other Emergencies (24hr): +1-410-531-4000

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger
- **Hazard-determining components of labeling:**

calcium hydroxide
sodium hydroxide

- **Hazard statements**

Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.

- **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves.

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Wear eye protection / face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a poison center/doctor.

Specific treatment (see on this label).

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Classification system:**• **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

• **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

3 Composition/information on ingredients• **Chemical characterization: Mixtures**• **Description:** Mixture of the substances listed below with nonhazardous additions.• **List of Dangerous Components**

1305-62-0	calcium hydroxide	70-90%
	☞ Eye Dam. 1, H318; ☞ Skin Irrit. 2, H315; STOT SE 3, H335	
1310-73-2	sodium hydroxide	< 4%
	☞ Met. Corr. 1, H290; Skin Corr. 1A, H314	

4 First-aid measures• **After inhalation:**

In case of unconsciousness place patient stably in the recovery position for transportation.

• **After skin contact:**

Immediately wash with water at least for 30 minutes and rinse thoroughly.

If skin irritation occur, consult a doctor.

• **After eye contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Then consult a doctor.

• **After swallowing:** Do not induce vomiting; immediately call for medical help.• **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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

No further relevant information available.

5 Fire-fighting measures• **Suitable extinguishing agents:**CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire fighting measures that suit the environment.

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- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Hazardous combustion products** No further relevant information available.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
Protect from frost.
Store in dry conditions.

8 Exposure controls/personal protection

- **Components with limit values that require monitoring at the workplace:**

1305-62-0 calcium hydroxide

PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL	Long-term value: 5 mg/m ³
TLV	Long-term value: 5 mg/m ³

1310-73-2 sodium hydroxide

PEL	Long-term value: 2 mg/m ³
REL	Ceiling limit value: 2 mg/m ³
TLV	Ceiling limit value: 2 mg/m ³

7732-18-5 water, distilled, or of similar purity

PEL	Long-term value: - OSHA TWA: NONE ESTABLISHED
TLV	Long-term value: - ACGIH TWA: NONE ESTABLISHED

- **Additional information:** Valid lists at time of creation were used as basis.
- **Exposure controls**
- **Appropriate engineering controls** No further relevant information available.

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Trade name: SODASORB® 4-8 IND H MED

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Personal protective equipment:**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the skin.
Prevent contact with the eyes and skin.

Breathing equipment:

In case of brief exposure use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air. As appropriate for the employee exposure, use a NIOSH approved respirator and cartridge.
As appropriate for the employee exposure, use a NIOSH approved respirator and cartridge.

Protection of hands:

Protective gloves

Check protective gloves prior to each use for their proper condition.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Recommended thickness of the material: ≥ 0.5 mm

PVC gloves

For the permanent contact gloves made of the following materials are suitable: PVC gloves**Eye protection:**

Tightly sealed goggles

Body protection: Protective work clothing**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Pellets
Color:	Whitish

Odor:	Characteristic
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pH-value:	Not applicable.
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Change in condition

Melting point/Melting range:	Not determined.
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Trade name: **SODASORB® 4-8 IND H MED**

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Boiling point/Boiling range:	Not available.
· Conditions of flammability	
Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not determined.
· Ignition temperature:	Not available.
· Decomposition temperature:	Not available.
· Auto igniting:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	- Vol %
Upper:	- Vol %
· Explosion data - sensitivity to mechanical impact	Not determined.
· Explosion data - sensitivity to static discharge	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Specific Gravity	Not available
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Slightly soluble.
· Coefficient of water/oil distribution:	Not available.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Chemical stability** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
May react with trichloroethylene, producing dichloroacetylene, carbon monoxide and phosgene.
- **Conditions to avoid**
In case of thermal decomposition caused by smouldering and incomplete combustion toxic fumes may be developed.
- **Incompatible materials:** Protect from contamination.
- **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

- Information on the likely routes of exposure
- Delayed and immediate effects and chronic effects from short or long term exposure
- Information on toxicological effects
- Acute toxicity:

- LD/LC50 values that are relevant for classification:

1305-62-0 calcium hydroxide

Oral	LD50	>2000 mg/kg (rat) (OECD 425) ECHA 2011
Dermal	LD50	>2500 mg/kg (rabbit) (OECD 402) ECHA 2011

1310-73-2 sodium hydroxide

Dermal	LD50	1350 mg/kg (rabbit) IUCLID Dataset 18-Feb-2000
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- Primary irritant effect:

- on the skin:

Irritant to skin and mucous membranes.

Irritation of skin	IS	>60 (in-vitro) (OECD 425) comp. product GRACE
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1305-62-0 calcium hydroxide

Irritation of skin	IS	irritating (rabbit) (OECD 404) ECHA 2011
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1310-73-2 sodium hydroxide

Irritation of skin	IS	5.6 (rabbit) (§ 1500.41 in Federal Register Vol. 38, No. 187) ECHA 2014
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- on the eye:

Strong irritant with the danger of severe eye injury.

1305-62-0 calcium hydroxide

Irritation of eyes	IS	irritating (rabbit) (OECD 405) ECHA 2011
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1310-73-2 sodium hydroxide

Irritation of eyes	IS	>2.25 (rabbit) (OECD 405) ECHA 2014
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- Respiratory sensitization No further relevant information available.

- Skin sensitization

1310-73-2 sodium hydroxide

Sensitization	SI	0 (human being) not sensitizing Echa 2014
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- Additional toxicological information:

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

- NTP (National Toxicology Program)

None of the ingredients is listed.

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<ul style="list-style-type: none"> • OSHA-Ca (Occupational Safety & Health Administration)
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None of the ingredients is listed.

<ul style="list-style-type: none"> • CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
--

<ul style="list-style-type: none"> • Carcinogenicity No further relevant information available.

<ul style="list-style-type: none"> • Mutagenicity

<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1310-73-2 sodium hydroxide

<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>AMES Test</td> <td>negative mg/plate (Salmonella typhimurium) Echa 2014</td> </tr> </table> 	AMES Test	negative mg/plate (Salmonella typhimurium) Echa 2014
AMES Test	negative mg/plate (Salmonella typhimurium) Echa 2014	

<ul style="list-style-type: none"> • Reproductive toxicity No further relevant information available.

<ul style="list-style-type: none"> • Specific target organ toxicity (single exposure) No further relevant information available.
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<ul style="list-style-type: none"> • Specific target organ toxicity (repeated exposure) No further relevant information available.
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<ul style="list-style-type: none"> • Aspiration hazard No further relevant information available.

12 Ecological information

<ul style="list-style-type: none"> • Toxicity

<ul style="list-style-type: none"> • Aquatic toxicity:
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<ul style="list-style-type: none"> • Fish toxicity
--

<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1305-62-0 calcium hydroxide
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>LC50 (96 h)</td> <td>160 mg/l (Gambusia affinis) IUCLID Dataset 18-Feb-2000 50.6 mg/l (Oncorhynchus mykiss) ECHA 2011</td> </tr> </table> 	LC50 (96 h)	160 mg/l (Gambusia affinis) IUCLID Dataset 18-Feb-2000 50.6 mg/l (Oncorhynchus mykiss) ECHA 2011
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1310-73-2 sodium hydroxide

<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>LC50 (48h)</td> <td>189 mg/l (Leuciscus idus) IUCLID Dataset (18/Feb/2000)</td> </tr> </table> 	LC50 (48h)	189 mg/l (Leuciscus idus) IUCLID Dataset (18/Feb/2000)
LC50 (48h)	189 mg/l (Leuciscus idus) IUCLID Dataset (18/Feb/2000)	
<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>LC50 (96 h)</td> <td>125 mg/l (Gambusia affinis) MSDS Merck 2014</td> </tr> </table> 	LC50 (96 h)	125 mg/l (Gambusia affinis) MSDS Merck 2014
LC50 (96 h)	125 mg/l (Gambusia affinis) MSDS Merck 2014	

<ul style="list-style-type: none"> • Water flea toxicity
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1305-62-0 calcium hydroxide
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>EC50 (48 h)</td> <td>49.1 mg/l (Daphnia magna) (OECD 202) ECHA 2011</td> </tr> </table> 	EC50 (48 h)	49.1 mg/l (Daphnia magna) (OECD 202) ECHA 2011
EC50 (48 h)	49.1 mg/l (Daphnia magna) (OECD 202) ECHA 2011	

<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1310-73-2 sodium hydroxide

<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>EC50 (48 h)</td> <td>100 mg/l (Daphnia magna) IUCLID Dataset 18-Feb-2000</td> </tr> </table> 	EC50 (48 h)	100 mg/l (Daphnia magna) IUCLID Dataset 18-Feb-2000
EC50 (48 h)	100 mg/l (Daphnia magna) IUCLID Dataset 18-Feb-2000	

<ul style="list-style-type: none"> • Algae toxicity

<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1305-62-0 calcium hydroxide
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>EC10 (72 h)</td> <td>79.22 mg/l (Pseudokirchneriella subcapitata) (OECD 201) crangon septemspinosa</td> </tr> </table> 	EC10 (72 h)	79.22 mg/l (Pseudokirchneriella subcapitata) (OECD 201) crangon septemspinosa
EC10 (72 h)	79.22 mg/l (Pseudokirchneriella subcapitata) (OECD 201) crangon septemspinosa	

<ul style="list-style-type: none"> • Bacterial toxicity

<ul style="list-style-type: none"> <ul style="list-style-type: none"> 1310-73-2 sodium hydroxide

<ul style="list-style-type: none"> <ul style="list-style-type: none"> <table border="1"> <tr> <td>EC50 (15 min)</td> <td>22 mg/l (Photobacterium phosphoreum) MSDS Merck 2014</td> </tr> </table> 	EC50 (15 min)	22 mg/l (Photobacterium phosphoreum) MSDS Merck 2014
EC50 (15 min)	22 mg/l (Photobacterium phosphoreum) MSDS Merck 2014	

<ul style="list-style-type: none"> • Persistence and degradability No further relevant information available.

<ul style="list-style-type: none"> • Bioaccumulative potential No further relevant information available.

<ul style="list-style-type: none"> • Mobility in soil No further relevant information available.
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- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

14 Transport information

- | | |
|--|---------------------------------------|
| • UN-Number | |
| • DOT, ADR, ADN, IMDG, IATA | None |
| • UN proper shipping name | |
| • DOT, ADR, ADN, IMDG, IATA | None |
| • Transport hazard class(es) | |
| • DOT, ADR, ADN, IMDG, IATA | |
| • Class | None |
| • Packing group | |
| • DOT, ADR, IMDG, IATA | None |
| • Environmental hazards: | Not applicable. |
| • Special precautions for user | Not applicable. |
| • Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| • Transport/Additional information: | |
| • DOT | |
| • Quantity limitations | On passenger aircraft/rail: - |
| • IATA | |
| • Remarks: | GRACE recommends CARGO AIRCRAFT only. |

15 Regulatory information

- **SARA**
- **SARA 302/304**
None of the ingredients is listed.
- **SARA 313**
None of the ingredients is listed.
- **SARA 311/312** Immediate (Acute) Health Hazard.
- **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

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- **Proposition 65**

- **Chemicals known to cause cancer:**

- None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

- None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

- None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

- None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

- None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

- None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

- None of the ingredients is listed.

- **Canadian DSL** Compliant.

- **Canadian NDSL** Not available.

- **European EINECS**

- All ingredients are listed.

- **Philippines Inventory of Chemicals and Chemical Substances PICCS**

- All ingredients are listed.

- **Inventory of the Existing Chemical Substances manufactured or imported in China IECSC**

- All ingredients are listed.

- **Australian Inventory of Chemical Substances AICS**

- All ingredients are listed.

- **Existing and New Chemical Substance List ENCS**

1305-62-0	calcium hydroxide	1-181
1310-73-2	sodium hydroxide	1-410

- **Korean Existing Chemical Inventory KECI**

1305-62-0	calcium hydroxide	KE-04518
1310-73-2	sodium hydroxide	KE-31487

- **GHS label elements**

- The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05 GHS07

- **Signal word** Danger

- **Hazard-determining components of labeling:**

- calcium hydroxide

- sodium hydroxide

- **Hazard statements**

- Causes skin irritation.

- Causes serious eye damage.

- May cause respiratory irritation.

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· Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves.

Wear eye protection / face protection.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a poison center/doctor.

Specific treatment (see on this label).

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

· Department issuing SDS: GRACE Safety & Health Department**· Other information: MADE IN USA****· Date of preparation / last revision 02/20/2015 / 2.9****· The first date of preparation 01/28/2015****· Number of revision times and the latest revision date 3.0 / 02/12/2015****· Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

Met. Corr.1: Corrosive to metals, Hazard Category 1

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

— USA —