1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product Name : aSORB
Synonym : Aluminum Oxide, hydrate; Activated Alumina

1.2 Relevant identified uses of the substance or mixture and uses advised against
Recommended use : Adsorbent

1.3 Details of the supplier of the safety data sheet
Producer : Interra Global
800 Busse Highway, Suite 101
Park Ridge, IL 60068
USA
Telephone : +1 (847) 292-8600

1.4 Emergency telephone number
Emergency : +1 (847) 292-8600

2. HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture
GHS classification in accordance with 29 CFR 1910 (OSHA HCS)
Not a hazardous substance or mixture. No need for classification under GHS.

2.2 GHS label elements, including precautionary statements
Not a hazardous substance or mixture. No need for classification under GHS.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
No other specific dangers known at this time, if properly stored and handled pursuant to these instructions and industry standards.


Emergency Overview

CAUTION: May be harmful if inhaled. May cause difficulty breathing. Inhalation of dust may result in respiratory irritation. Prolonged and repeated exposure of dust may cause lung damage. Contact with the eyes or skin may cause mechanical irritation. Avoid inhalation of dusts. Avoid contact with the skin, eyes and clothing.

3. COMPOSITION/INFORMATION ON INGREDIENTS
Chemical identity : Al₂O₃
Common name : Activated Alumina
Numbers of identity : CAS-Nr.: 1344-28-1
                  : EC-No.: 215-691-6
4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Remove contaminated clothing. Consult a qualified medical professional. Show this data sheet to the doctor in attendance.

If ingested
Not a hazard under normal use conditions. If large amounts are ingested, get medical advice.

Skin contact
Wash with soap and water. Get medical attention if irritation persists.

Eye contact
Flush eyes with plenty of water. Check for and remove any contact lenses if possible. Continue flushing eyes with water for at least 15 minutes. Get medical attention if irritation occurs.

Inhalation
Move individual to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or section 11.

4.3 Indication of any immediate medical attention and special treatment needed
Note to physician Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media : Any media suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Fire hazards : None known
Explosion hazards : None known

5.3 Advice for firefighters
Follow standard fire fighting procedures.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing dust. Ensure adequate ventilation. For personal protection see section 8.

6.2 Environmental precautions
Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.
6.3 Methods and materials for containment and cleaning up
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Vacuuming may be used to avoid dust dispersal. Dispose of material according to local and regional requirements.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust.

7.2 Conditions for safe storage, including any incompatibilities
Segregate from reducing agents.

Suitable materials for containers: carbon steel (iron), Low density polyethylene (LDPE), High density polyethylene (HDPE).

Suitable for any general chemical storage area. Do not store in areas where temperatures may exceed 35 °C

Keep container tightly closed in a cool, well-ventilated area. Keep container dry.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters/exposure limits

OSHA PEL
Activated Alumina : 5 mg/m$^3$ (Inhalation Respirable) (TWA)
Activated Alumina : 15 mg/m$^3$ (TWA)
Activated Alumina : 1 mg/m$^3$ (TLV)

Lower respiratory tract irritation.
Pneumoconiosis.
Neurotoxicity.
Not classifiable as a human carcinogen

8.2 Appropriate engineering controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Personal protective equipment
Safety glasses, lab coat, and dust respirator. Be sure to use an NIOSH approved respirator or equivalent.
9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state : Solid
Color : Off-white
Odor : Odorless
Odor threshold : No data available
pH-value : 9.4 – 10.1 (in 5% slurry)
Melting point : No data available
Freezing Point : No data available
Initial boiling point : 2050 °C
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : Non-flammable
Explosion limits : No data available
Vapor pressure : Not applicable
Vapor density : Not applicable
Relative density : No data available
Solubility : Insoluble
Partition coefficient : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
Moisture (adsorbs water with evolution of heat).

10.2 Chemical stability
The product is stable under normal ambient and anticipated storage and handling conditions of temperature and storage.
10.3  **Possibility of hazardous reactions**
None known.

10.4  **Conditions to avoid**
Avoid deposition of dust and dust formation.

10.5  **Incompatible materials**
None known.

10.6  **Hazardous decomposition products**
None anticipated.

11.  **TOXICOLOGICAL INFORMATION**

11.1  **Information on toxicological effect**
Primary routes of exposure Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

**Acute Toxicity/Effects**

Assessment of acute toxicity: Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.

**Oral**

Information on: Aluminum oxide

<table>
<thead>
<tr>
<th>Type of value</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 10,000 mg/kg (similar to OECD guideline 401)</td>
</tr>
</tbody>
</table>

The data refer to a preparation of the substance. No mortality was observed. No systemic toxicity.

**Inhalation**

Information on: Aluminum oxide

<table>
<thead>
<tr>
<th>Type of value</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 2.3 mg/l (similar to OECD guideline 403)</td>
</tr>
</tbody>
</table>

Exposure time: 4 hours

Tested as dust aerosol. No mortality was observed.

**Irritation / corrosion**

Assessment of irritating effects: Inhalation of dust may cause respiratory tract irritation, coughing and breathing difficulties. Contact with the eyes or skin may cause mechanical irritation.

**Chronic Toxicity/Effects**

**Other Information**

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components. The product has been assessed on the basis of the
components’ available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

**Symptoms of Exposure**
No significant reaction of the human body to the product known.

### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

**Toxicity to fish**
Information on: Aluminum oxide

LC50 (96 h) > 218.64 mg/l, Pimephales promelas (Fish test acute, semistatic) The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Tested above maximum solubility.

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Aquatic invertebrates
Information on: Aluminum oxide

No observed effect concentration (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Tested above maximum solubility. The details of the toxic effect relate to the nominal concentration.

----------------------------------

Aquatic plants
Information on: Aluminum oxide

No observed effect concentration (72 h) > 100 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201, static)

Tested above maximum solubility. The details of the toxic effect relate to the nominal concentration.

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Chronic toxicity to fish
Information on: Aluminum oxide

EC10 (7 d) 0.0938 mg/l, Pimephales promelas (semistatic)

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Chronic toxicity to aquatic invertebrates
Information on: Aluminum oxide

No observed effect concentration (21 d) 0.076 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

----------------------------------

#### 12.2 Persistence and degradability

Assessment biodegradation and elimination (H2O) Not applicable for inorganic substances.

**Additional information**
Other ecotoxicological advice: The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components. The product has been...
assessed on the basis of the components’ available data. To some extent data gaps exist for individual components. According to our present knowledge and experience dangers which are not covered by the current labeling are not to be expected.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:
Dispose of in accordance with federal, state, and local environmental control regulations. All waste materials should be reviewed to determine applicable hazards.

14. TRANSPORT INFORMATION

DOT (U.S.A.)
Not a dangerous good.

IMDG
Not a dangerous good.

Transport hazard classes
Not applicable.

Packing group
Not applicable.

Environmental hazards
See section 12.

Transport in bulk
Not applicable.

Special precautions for users
Not applicable.

15. REGULATORY INFORMATION

15.1 SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313
The following components are subject to reporting levels established by SARA Title III, Section 313.
Aluminum oxide
CAS-No.: 1344-28-1
Revision date: 1994-04-01

Massachusetts Right to Know Components
Aluminum oxide
Pennsylvania Right to Know Components
Aluminum oxide
CAS-No.: 1344-28-1
Revision date: 1994-04-01

New Jersey Right to Know Components
Aluminum oxide
CAS-No.: 1344-28-1
Revision date: 1994-04-01

California Proposition 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Toxic Control Substances Act (TSCA)
TSCA (U.S.A.) released / listed.

15.2 Other classifications

HMIS (U.S.A.)
Health hazard : 1
Fire hazard : 0
Reactivity : 0

National Fire Protection Association (U.S.A.)
Health : 1
Flammability : 0
Reactivity : 0

WHMIS (Canada)
Class D, Division 2, Subdivision B

16. OTHER INFORMATION

16.1 Preparation date:
June 1, 2015

Revision date:
June 29, 2017

Revision Number:
1

16.2 Warranty
The information contained herein is based upon data considered true and accurate. However, Interra Global Corp. makes no warranties, express or implied, as to the accuracy or adequacy of the information contained herein or the results to be obtained from the use thereof. This information is offered solely for the user’s consideration, investigation and verification. Since the
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