1. Identification

1.1. Product identifier

Product Code(s) 2008
Product Name BSA 96

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

Recommended use Refractory
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Manufacturer
Almatis GmbH
Lyoner Str. 9
60528 Frankfurt
Germany
+ 49 69 9573410

For further information, please contact info@almatis.com

1.4. Emergency telephone number

Emergency Telephone +1 501-776-4677 3E Global Incident Response Hotline (Almatis access code: 334735)

Emergency Telephone - §45 - (EC)1272/2008
Europe 112

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

2.2. Label elements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

Hazard statements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

2.3. Other hazards
No information available

3. Composition/information on ingredients
3.1 Substances
Not applicable

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>EC No</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>215-691-6</td>
<td>1344-28-1</td>
<td>&gt;95</td>
<td></td>
<td>01-2119529248-35-0024</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0086</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01-2119529248-35-0087</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>236-675-5</td>
<td>13463-67-7</td>
<td>0.5-2</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16

4. First-aid measures

4.1. Description of first aid measures

Inhalation
Remove to fresh air.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact
Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Ingestion
Clean mouth with water and drink afterwards plenty of water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
Contact with dust can cause mechanical irritation or drying of the skin.

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

Note to physicians
Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical
Avoid generation of dust. Fine dust dispersed in air may ignite.

5.3. Advice for firefighters
Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions**
Avoid generation of dust.

**For emergency responders**
Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions**
See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards**
Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

**Reference to other sections**
See section 8 for more information. See section 13 for more information.

## 7. Handling and storage

### 7.1. Precautions for safe handling

**Advice on safe handling**
Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust.

**General hygiene considerations**
Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions**
Keep container tightly closed in a dry and well-ventilated place.

### 7.3. Specific end use(s)

**Risk Management Methods (RMM)**
The information required is contained in this Material Safety Data Sheet.

## 8. Exposure controls/personal protection

### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide 1344-28-1</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Titanium dioxide 13463-67-7</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Italy</td>
<td>Portugal</td>
<td>Netherlands</td>
<td>Finland</td>
<td>Denmark</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>-------------</td>
<td>---------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
<td>-</td>
<td>TWA: 5 mg/m³</td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td>STEL: 24 mg/m³</td>
<td>-</td>
<td>-</td>
<td>TWA: 2 mg/m³</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
<td>-</td>
<td>TWA: 6 mg/m³</td>
</tr>
<tr>
<td>13463-67-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 3 mg/m³</td>
<td>TWA: 2.5 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
</tr>
<tr>
<td>1344-28-1</td>
<td>STEL 10 mg/m³</td>
<td>STEL 24 mg/m³</td>
<td>STEL 15 mg/m³</td>
<td>TWA: 30 mg/m³</td>
<td>STEL 12 mg/m³</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 3 mg/m³</td>
<td>STEL 30 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
</tr>
<tr>
<td>13463-67-7</td>
<td>STEL 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
<td>TWA: 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 10 mg/m³</td>
<td></td>
<td></td>
<td>STEL 10 mg/m³</td>
</tr>
</tbody>
</table>

Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>-</td>
<td>60 µg/g creatinine - urine (Aluminum) - no restrictions</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL)  No information available.

Predicted No Effect Concentration (PNEC)  No information available.

### 8.2. Exposure controls

#### Engineering controls

Apply technical measures to comply with the occupational exposure limits.

#### Personal protective equipment

**Eye/face protection**

Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.

**Hand protection**

Wear suitable gloves tested to EN 374.

**Skin and body protection**

If there is a risk of contact:. Wear suitable protective clothing.

**Respiratory protection**

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

Avoid release to the environment. Avoid creating dust.

### 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

**Physical state**  Powder granules Balls

**Appearance**  No information available

**Color**  light brown

**Odor**  None.

**Odor threshold**  No information available
<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks  • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>9.00 - 10.50</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>&gt;1600 °C</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability or explosive limits</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Lower flammability or explosive limits</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
<td></td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>insoluble</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
<td>None known</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks  • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Liquid Density</td>
<td>3.4-3.6 g/cm³</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>800-2800 kg/m³</td>
<td></td>
</tr>
</tbody>
</table>

10. Stability and reactivity

10.1. Reactivity

Reactivity                                   No information available.

10.2. Chemical stability

Stability                                    Stable under normal conditions.

Explosion data
- Sensitivity to mechanical impact: None.
- Sensitivity to static discharge: None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: None under normal processing.

10.4. Conditions to avoid

Conditions to avoid: Avoid dust formation.

10.5. Incompatible materials

Incompatible materials: None known based on information supplied.

10.6. Hazardous decomposition products


11. Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

- **Inhalation**: Specific test data for the substance or mixture is not available.
- **Eye contact**: Specific test data for the substance or mixture is not available.
- **Skin contact**: Specific test data for the substance or mixture is not available.
- **Ingestion**: Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

No information available.

Numerical measures of toxicity

<table>
<thead>
<tr>
<th>Component Information</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>&gt; 10000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

- **Skin corrosion/irritation**: No information available.
- **Serious eye damage/eye irritation**: No information available.
- **Respiratory or skin sensitization**: No information available.
- **Germ cell mutagenicity**: No information available.
- **Carcinogenicity**: No information available.
- **Reproductive toxicity**: No information available.
- **STOT - single exposure**: No information available.
- **STOT - repeated exposure**: No information available.
- **Aspiration hazard**: No information available.

12. Ecological information

12.1. Toxicity
Ecotoxicity

The environmental impact of this product has not been fully investigated.

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>PBT and vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>The substance is not PBT / vPvB PBT assessment does not apply</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>The substance is not PBT / vPvB PBT assessment does not apply</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects

Other adverse effects No information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

IMDG

14.1 UN number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Marine pollutant Not applicable
14.6 Special Provisions None
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

RID

14.1 UN number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards  Not applicable
14.6 Special Provisions  None

ADR
14.1 UN number  Not regulated
14.2 UN proper shipping name  Not regulated
14.3 Transport hazard class(es)  Not regulated
14.4 Packing group  Not regulated
14.5 Environmental hazards  Not applicable
14.6 Special Provisions  None

IATA
14.1 UN number  Not regulated
14.2 UN proper shipping name  Not regulated
14.3 Transport hazard class(es)  Not regulated
14.4 Packing group  Not regulated
14.5 Environmental hazards  Not applicable
14.6 Special Provisions  None

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009  Not applicable

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>ENCS</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>IECSC</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>KECL</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>PICCS</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
<tr>
<td>AICS</td>
<td>Contact supplier for inventory compliance status</td>
</tr>
</tbody>
</table>

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
15.2. Chemical safety assessment

Chemical Safety Report

No information available

16. Other information

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

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend  Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
TWA  TWA (time-weighted average)  STEL  STEL (Short Term Exposure Limit)
Ceiling  Maximum limit value  *  Skin designation

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AÉGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIO SH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Prepared By

Product Safety Department
Almatis B.V.
Theemsweeg 30
3197 KM Botlek Rt
The Netherlands
+31-181-270124
info@almatis.com

Revision date

10-Jul-2019

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet