

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2015

Reviewed on 10/20/2015

## 1 Identification

- **Product identifier**
- **Trade name:** ALUMINUM OXIDE (ALUMINA)
- **Article number:** 10400
- **CAS Number:**  
1344-28-1
- **EC number:**  
215-691-6
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2B H320 Causes eye irritation.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
Harmful if swallowed or if inhaled.  
Causes eye irritation.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.

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Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

Store away from oxidizing agents.

Store in a well-ventilated place. Keep cool.

Store in a closed container.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

1344-28-1 aluminium oxide

· **Identification number(s)**

· **EC number:** 215-691-6

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **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.

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## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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** 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:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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.
- **Control parameters**

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

### 1344-28-1 aluminium oxide

PEL	Long-term value: 15*, 15** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

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*Immediately remove all soiled and contaminated clothing.*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes.*

*Avoid contact with the eyes and skin.*

· **Breathing equipment:** *Not required.*

· **Protection of hands:**

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*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.*

· **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

· **Eye protection:**



*Tightly sealed goggles*

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Crystalline powder

**Color:** White

· **Odor:** Odorless

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

**Melting point/Melting range:** 2050 °C (3722 °F)

**Boiling point/Boiling range:** 2980+-60 °C (5396+-140 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 3.97 g/cm<sup>3</sup> (33.13 lbs/gal)

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· <b>Bulk density at 20 °C (68 °F):</b>	920 kg/m <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
<b>Organic solvents:</b>	0.0 %
<b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

Substance is not listed.

- **NTP (National Toxicology Program)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **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** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	No
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	-

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is listed.

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· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

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

1344-28-1 aluminium oxide

A4

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

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

Harmful if swallowed or if inhaled.

Causes eye irritation.

· **Precautionary statements**

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

Store away from oxidizing agents.

Store in a well-ventilated place. Keep cool.

Store in a closed container.

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

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**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.*

· **Date of preparation / last revision** 10/20/2015 / -

· **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)*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

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

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B*

US



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.10.2015

Revision: 20.10.2015

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**

- **Trade name:** ALUMINUM OXIDE (ALUMINA)

- **Article number:** 10400

- **CAS Number:**

1344-28-1

- **EC number:**

215-691-6

- **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: www.emgrid.com.au

- **Further information obtainable from:** Product safety department

- **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2 H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

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**Safety data sheet**  
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Trade name: ALUMINUM OXIDE (ALUMINA)

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## · Hazard pictograms



GHS07

· Signal word *Warning*

## · Hazard statements

*Harmful if swallowed or if inhaled.**Causes serious eye irritation.*

## · Precautionary statements

*Avoid breathing dust/fume/gas/mist/vapours/spray.**Wear eye protection / face protection.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If eye irritation persists: Get medical advice/attention.**Rinse mouth.**Store away from oxidizing agents.**Store in a well-ventilated place. Keep cool.**Store in a closed container.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

## · Other hazards

## · Results of PBT and vPvB assessment

· **PBT:** Not applicable.· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· Chemical characterisation: **Substances**· CAS No. **Description**

1344-28-1 aluminium oxide

## · Identification number(s)

· **EC number:** 215-691-6

### 4 First aid measures

## · Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.· **After skin contact:** Generally the product does not irritate the skin.· **After eye contact:***Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*· **After swallowing:** If symptoms persist consult doctor.· **Information for doctor:**· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** 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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Control parameters**

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

1344-28-1 aluminium oxide
---------------------------

NES	Long-term value: 10 mg/m <sup>3</sup>
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- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**

- **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.

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Trade name: ALUMINUM OXIDE (ALUMINA)

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Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· **Respiratory protection:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Crystalline powder

**Colour:** White

· **Odour:** Odourless

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

**Melting point/Melting range:** 2050 °C

**Boiling point/Boiling range:** 2980+/-60 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

· **Vapour pressure:** Not applicable.

· **Density at 20 °C:** 3.97 g/cm<sup>3</sup>

· **Bulk density at 20 °C:** 920 kg/m<sup>3</sup>

· **Relative density** Not determined.

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· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>VOC (EC)</b>	0.00 %
· <b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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**Safety data sheet**  
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Revision: 20.10.2015

Trade name: ALUMINUM OXIDE (ALUMINA)

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· **Other adverse effects** No further relevant information available.**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· <b>UN-Number</b>	
· <b>ADG, ADN, IMDG, IATA</b>	Void
· <b>UN proper shipping name</b>	
· <b>ADG, ADN, IMDG, IATA</b>	Void
· <b>Transport hazard class(es)</b>	
· <b>ADG, ADN, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>Packing group</b>	
· <b>ADG, IMDG, IATA</b>	Void
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	-

**15 Regulatory information**· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Australian Inventory of Chemical Substances**

Substance is listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**

GHS07

· **Signal word** Warning

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· **Hazard statements**

*Harmful if swallowed or if inhaled.*

*Causes serious eye irritation.*

· **Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapours/spray.*

*Wear eye protection / face protection.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*If eye irritation persists: Get medical advice/attention.*

*Rinse mouth.*

*Store away from oxidizing agents.*

*Store in a well-ventilated place. Keep cool.*

*Store in a closed container.*

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.*

· **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*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

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

*VOC: Volatile Organic Compounds (USA, EU)*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2015

Reviewed on 10/20/2015

## 1 Identification

- **Product identifier**
- **Trade name:** ALUMINUM OXIDE (ALUMINA)
- **Article number:** 10400
- **CAS Number:**  
1344-28-1
- **EC number:**  
215-691-6
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2B H320 Causes eye irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Not applicable.



Irritant

Irritating to eyes.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

- **Code letter and hazard designation of product:**



Irritant

- **Risk phrases:**  
Irritating to eyes.

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# Safety Data Sheet

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

(Contd. of page 1)

· **Safety phrases:**

*In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
This material and its container must be disposed of as hazardous waste.*

· **Hazard description:**

· **WHMIS-symbols:**

*D2B - Toxic material causing other toxic effects*



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



*Health = 1*

*Fire = 0*

*Reactivity = 0*

· **HMIS-ratings (scale 0 - 4)**

HEALTH	1
FIRE	0
REACTIVITY	0

*Health = 1*

*Fire = 0*

*Reactivity = 0*

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

*1344-28-1 aluminium oxide*

· **Identification number(s)**

· **EC number:** 215-691-6

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:**

*Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **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.*

CA

(Contd. on page 3)

# Safety Data Sheet

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Trade name: ALUMINUM OXIDE (ALUMINA)

(Contd. of page 2)

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **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** 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:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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.
- **Control parameters**

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

### 1344-28-1 aluminium oxide

EL	Long-term value: 1.0 mg/m <sup>3</sup> respirable, as Al
EV	Long-term value: 10 mg/m <sup>3</sup> total dust

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **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.

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

(Contd. of page 3)

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Crystalline powder

**Color:** White

· **Odor:** Odorless

· **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

**Melting point/Melting range:** 2050 °C

**Boiling point/Boiling range:** 2980+/-60 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C:** 3.97 g/cm<sup>3</sup>

· **Bulk density at 20 °C:** 920 kg/m<sup>3</sup>

· **Relative density** Not determined.

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# Safety Data Sheet

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Trade name: ALUMINUM OXIDE (ALUMINA)

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- |  |  |
|--|--|
| · Vapour density                           | Not applicable.                            |
| · Evaporation rate                         | Not applicable.                            |
| · Solubility in / Miscibility with Water:  | Insoluble.                                 |
| · Partition coefficient (n-octanol/water): | Not determined.                            |
| · Viscosity:                               |  |
| Dynamic:                                   | Not applicable.                            |
| Kinematic:                                 | Not applicable.                            |
| Organic solvents:                          | 0.0 %                                      |
| Solids content:                            | 100.0 %                                    |
| · Other information                        | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

### · IARC (International Agency for Research on Cancer)

Substance is not listed.

### · NTP (National Toxicology Program)

Substance is not listed.

### · OSHA-Ca (Occupational Safety Health Administration)

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.

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# Safety Data Sheet

## acc. to OSHA HCS

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

(Contd. of page 5)

- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |  |                 |
|--|-----------------|
| · <b>UN-Number</b>   |                 |
| · <b>DOT, TDG, ADN, IMDG, IATA</b>   | Void            |
| · <b>UN proper shipping name</b>   |                 |
| · <b>DOT, TDG, ADN, IMDG, IATA</b>   | Void            |
| · <b>Transport hazard class(es)</b>  |                 |
| · <b>DOT, TDG, ADN, IMDG, IATA</b>   |                 |
| · <b>Class</b>   | Void            |
| · <b>Packing group</b>   |                 |
| · <b>DOT, TDG, IMDG, IATA</b>  | Void            |
| · <b>Environmental hazards:</b>  |                 |
| · <b>Marine pollutant:</b>   | No              |
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>  | -               |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· **Section 355 (extremely hazardous substances):**  
Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**  
Substance is listed.

· **TSCA (Toxic Substances Control Act):**  
Substance is listed.

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Printing date 10/20/2015

Reviewed on 10/20/2015

**Trade name: ALUMINUM OXIDE (ALUMINA)**

(Contd. of page 6)

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

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

1344-28-1 aluminium oxide

A4

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

Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Irritant

· **Risk phrases:**

Irritating to eyes.

· **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

This material and its container must be disposed of as hazardous waste.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.

· **Date of preparation / last revision** 10/20/2015 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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**Safety Data Sheet**  
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Printing date 10/20/2015

Reviewed on 10/20/2015

**Trade name: ALUMINUM OXIDE (ALUMINA)**

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*IATA: International Air Transport Association**ACGIH: American Conference of Governmental Industrial Hygienists**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**WHMIS: Workplace Hazardous Materials Information System (Canada)**Acute Tox. 4: Acute toxicity, Hazard Category 4**Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B*

CA

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.10.2015

Revision: 20.10.2015

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

- **1.1 Product identifier**
- **Trade name:** ALUMINUM OXIDE (ALUMINA)
- **Article number:** 10400
- **CAS Number:**  
1344-28-1
- **EC number:**  
215-691-6
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

- 
- **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H302+H332 Harmful if swallowed or if inhaled.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P420 Store away from oxidizing agents.  
P403+P235 Store in a well-ventilated place. Keep cool.

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# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 20.10.2015

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

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- P501* Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
1344-28-1 aluminium oxide
- **Identification number(s)**
- **EC number:** 215-691-6

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **6.4 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.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** No special measures required.

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**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.10.2015

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Trade name: ALUMINUM OXIDE (ALUMINA)

(Contd. of page 2)

- 7.2 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: Not required.
- Further information about storage conditions: Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

#### · 8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:

##### 1344-28-1 aluminium oxide

WEL	Long-term value: 10* 4** mg/m <sup>3</sup> *inhalable dust **respirable dust
-----	---

- Additional information: The lists valid during the making were used as basis.

#### · 8.2 Exposure controls

- 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.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- Respiratory protection: Not required.

- Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:



Tightly sealed goggles

### SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Crystalline powder

(Contd. on page 4)

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Trade name: ALUMINUM OXIDE (ALUMINA)

(Contd. of page 3)

<b>Colour:</b>	White
<b>· Odour:</b>	Odourless
<b>· Odour threshold:</b>	Not determined.
<b>· pH-value:</b>	Not applicable.
<b>· Change in condition</b>	
<b>Melting point/Melting range:</b>	2050 °C
<b>Boiling point/Boiling range:</b>	2980+-60 °C
<b>· Flash point:</b>	Not applicable.
<b>· Flammability (solid, gaseous):</b>	Product is not flammable.
<b>· Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
<b>· Self-igniting:</b>	Not determined.
<b>· Danger of explosion:</b>	Product does not present an explosion hazard.
<b>· Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
<b>· Vapour pressure:</b>	Not applicable.
<b>· Density at 20 °C:</b>	3.97 g/cm <sup>3</sup>
<b>· Bulk density at 20 °C:</b>	920 kg/m <sup>3</sup>
<b>· Relative density</b>	Not determined.
<b>· Vapour density</b>	Not applicable.
<b>· Evaporation rate</b>	Not applicable.
<b>· Solubility in / Miscibility with water:</b>	Insoluble.
<b>· Partition coefficient (n-octanol/water):</b>	Not determined.
<b>· Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
<b>· Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>VOC (EC)</b>	0.00 %
<b>Solids content:</b>	100.0 %
<b>· 9.2 Other information</b>	No further relevant information available.

## SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.

(Contd. on page 5)

**Safety data sheet**  
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Revision: 20.10.2015

Trade name: ALUMINUM OXIDE (ALUMINA)

(Contd. of page 4)

· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |  |      |
|--|------|
| · <b>14.1 UN-Number</b>                  |      |
| · <b>ADR, ADN, IMDG, IATA</b>            | Void |
| · <b>14.2 UN proper shipping name</b>    |      |
| · <b>ADR, ADN, IMDG, IATA</b>            | Void |
| · <b>14.3 Transport hazard class(es)</b> |      |
| · <b>ADR, ADN, IMDG, IATA</b>            |      |
| · <b>Class</b>                           | Void |
| · <b>14.4 Packing group</b>              |      |
| · <b>ADR, IMDG, IATA</b>                 | Void |
| · <b>14.5 Environmental hazards:</b>     |      |
| · <b>Marine pollutant:</b>               | No   |

(Contd. on page 6)

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**Trade name: ALUMINUM OXIDE (ALUMINA)**

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- |   |                 |
|---|-----------------|
| · <b>14.6 Special precautions for user</b>  | Not applicable. |
| · <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| · <b>UN "Model Regulation":</b>   | -               |

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

### SECTION 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.*

· **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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

Acute Tox. 4: Acute toxicity, Hazard Category 4

GB

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 20.10.2015

Herziening van: 20.10.2015

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** ALUMINUM OXIDE (ALUMINA)
- **Artikelnummer:** 10400
- **CAS-nummer:**  
1344-28-1
- **EC-nummer:**  
215-691-6
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**  
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Aurion**  
Binnenhaven 5  
6709 PD Wageningen  
The Netherlands  
Tel: 31 317 415094  
Fax: 31 317 415955  
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.

Acute Tox. 4 H332 Schadelijk bij inademing.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS07

- **Signaalwoord** Waarschuwing

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

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**Handelsnaam: ALUMINUM OXIDE (ALUMINA)**

(Vervolg van blz. 1)

- **Gevarenaanduidingen**

H302+H332 *Schadelijk bij inslikken en bij inademing.*

- **Veiligheidsaanbevelingen**

P261 *Inademing van stof/rook/gas/nevel/damp/spuitnevel vermijden.*

P301+P312 NA *INSLIKKEN: bij onwel voelen een ANTIGIFCENTRUM/arts raadplegen.*

P304+P340 NA *INADEMING: de persoon in de frisse lucht brengen en ervoor zorgen dat deze gemakkelijk kan ademen.*

P420 *Gescheiden van oxydatiemiddelen bewaren.*

P403+P235 *Op een goed geventileerde plaats bewaren. Koel bewaren.*

P501 *De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.*

- **2.3 Andere gevaren**

- **Resultaten van PBT- en zPzB-beoordeling**

- **PBT:** Niet bruikbaar.

- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**

- **CAS-Nr. omschrijving**

1344-28-1 aluminiumoxide

- **Identificatienummer(s)**

- **EC-nummer:** 215-691-6

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**

- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.

- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid

- **Na oogcontact:**

*De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.*

- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen

- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.

- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**

*Geen verdere relevante informatie verkrijgbaar.*

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**

- **Geschikte blusmiddelen:**

*CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.*

- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**

*Geen verdere relevante informatie verkrijgbaar.*

- **5.3 Advies voor brandweerlieden**

- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** Niet nodig.

(Vervolg op blz. 3)

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**Handelsnaam: ALUMINUM OXIDE (ALUMINA)**

(Vervolg van blz. 2)

- **6.2 Milieuvorzorgsmaatregelen:** Geen speciale maatregelen noodzakelijk.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:** Mechanisch opnemen.
- **6.4 Verwijzing naar andere rubrieken**  
 Informatie inzake veilig gebruik - zie hoofdstuk 7.  
 Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
 Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
 Bij een deskundig gebruik zijn geen bijzondere maatregelen vereist.
- **Informatie m.b.t. brand- en ontploffingsgevaar:** Geen bijzondere maatregelen noodzakelijk.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.

#### 8.1 Controleparameters

- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

#### 1344-28-1 aluminiumoxide

WGW	Lange termijn waarde: 0,05 mg/m <sup>3</sup> inadembaar (privaat)
-----	--

- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
 Verwijderd houden van eet- en drinkwaren.  
 Verontreinigde kleding onmiddellijk uittrekken.  
 Vóór de pauze en aan het einde van werktijd handen wassen.  
 Aanraking met de ogen vermijden.  
 Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:** Niet noodzakelijk.
- **Handbescherming:**  
 Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
 Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
 Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
 De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**  
 De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

(Vervolg op blz. 4)



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(Vervolg van blz. 3)

## · Oogbescherming:



Nauw aansluitende veiligheidsbril

### RUBRIEK 9: Fysische en chemische eigenschappen

## · 9.1 Informatie over fysische en chemische basiseigenschappen

## · Algemene gegevens

## · Voorkomen:

Vorm: Kristallijn poeder

Kleur: Wit

· Reuk: Reukloos

· Geurdrempelwaarde: Niet bepaald.

· pH-waarde: Niet bruikbaar.

## · Toestandsverandering

Smeltpunt/smeltbereik: 2050 °C

Kookpunt/kookpuntbereik: 2980+-60 °C

· Vlampunt: Niet bruikbaar.

· Ontvlambaarheid (vast, gasvormig): De stof is niet ontvlambaar.

## · Ontstekingstemperatuur:

Ontbindingstemperatuur: Niet bepaald.

· Zelfonsteking: Niet bepaald.

· Ontploffingsgevaar: Het produkt is niet ontploffingsgevaarlijk.

## · Ontploffingsgrenzen:

Onderste: Niet bepaald.

Bovenste: Niet bepaald.

· Dampspanning: Niet bruikbaar.

Dichtheid bij 20 °C: 3,97 g/cm<sup>3</sup>· Stortgewicht bij 20 °C: 920 kg/m<sup>3</sup>

· Relatieve dichtheid: Niet bepaald.

· Dampdichtheid: Niet bruikbaar.

· Verdampingsnelheid: Niet bruikbaar.

## · Oplosbaarheid in/mengbaarheid met

Water: Niet oplosbaar.

· Verdelingscoëfficiënt (n-octanol/water): Niet bepaald.

## · Viscositeit

Dynamisch: Niet bruikbaar.

Kinematisch: Niet bruikbaar.

## · Oplosmiddelgehalte:

Organisch oplosmiddel: 0,0 %

VOC (EG) 0,00 %

(Vervolg op blz. 5)

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(Vervolg van blz. 4)

- |  |   |
|--|---|
| <b>Gehalte aan vaste bestanddelen:</b> | 100,0 %   |
| <b>9.2 Overige informatie</b>          | Geen verdere relevante informatie verkrijgbaar. |

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Geen prikkelend effect.
- **Ernstig oogletsel/oogirritatie** Prikkeling
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.  
Over het algemeen geen gevaar voor water
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

NL  
(Vervolg op blz. 6)

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## RUBRIEK 14: Informatie met betrekking tot het vervoer

- |  |                     |
|--|---------------------|
| · 14.1 VN-nummer   |                     |
| · ADR, ADN, IMDG, IATA   | Niet van toepassing |
| · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN            |                     |
| · ADR, ADN, IMDG, IATA   | Niet van toepassing |
| · 14.3 Transportgevarenklasse(n)   |                     |
| · ADR, ADN, IMDG, IATA   |                     |
| · klasse   | Niet van toepassing |
| · 14.4 Verpakkingsgroep:   |                     |
| · ADR, IMDG, IATA  | Niet van toepassing |
| · 14.5 Milieugevaren:  |                     |
| · Marine pollutant:  | Neen                |
| · 14.6 Bijzondere voorzorgen voor de gebruiker                                   | Niet bruikbaar.     |
| · 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code | Niet bruikbaar.     |
| · VN "Model Regulation":   | -                   |

## RUBRIEK 15: Regelgeving

- 15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel
- SZW-lijst van kankerverwekkende stoffen  
De stof is niet aanwezig.
- SZW-lijst van mutagene stoffen  
De stof is niet aanwezig.
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid  
De stof is niet aanwezig.
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling  
De stof is niet aanwezig.
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding  
De stof is niet aanwezig.
- Richtlijn 2012/18/EU
- Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I De stof is niet aanwezig.
- Nationale voorschriften:
- Gevaarklasse v. water: Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A
- 15.2 Chemischeveiligheidsbeoordeling: Een chemische veiligheidsbeoordeling is niet uitgevoerd.

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

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

(Vervolg op blz. 7)

**Veiligheidsinformatieblad**  
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(Vervolg van blz. 6)

*IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**Acute Tox. 4: Acute toxicity, Hazard Category 4*

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 20.10.2015

Révision: 20.10.2015

### SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** ALUMINUM OXIDE (ALUMINA)
- **Code du produit:** 10400
- **No CAS:**  
1344-28-1
- **Numéro CE:**  
215-691-6
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.

Acute Tox. 4 H332 Nocif par inhalation.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS07

- **Mention d'avertissement** Attention
- **Mentions de danger**  
H302+H332 Nocif en cas d'ingestion ou d'inhalation.
- **Conseils de prudence**  
P261 Éviter de respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols.  
P301+P312 EN CAS D'INGESTION: Appeler un CENTRE ANTIPOISON/un médecin en cas de malaise.  
P304+P340 EN CAS D'INHALATION: transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.  
P420 Stocker à l'écart des agents d'oxydation.

(suite page 2)

# Fiche de données de sécurité

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**Nom du produit: ALUMINUM OXIDE (ALUMINA)**

(suite de la page 1)

P403+P235 Stocker dans un endroit bien ventilé. Tenir au frais.

P501 Éliminer le contenu/réceptif conformément à la réglementation locale/régionale/nationale/internationale.

- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### SECTION 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
1344-28-1 oxyde d'aluminium
- **Code(s) d'identification**
- **Numéro CE:** 215-691-6

### SECTION 4: Premiers secours

- **4.1 Description des premiers secours**
- **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**  
Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.
- **Après ingestion:** Si les troubles persistent, consulter un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### SECTION 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### SECTION 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence** Pas nécessaire.
- **6.2 Précautions pour la protection de l'environnement:** Aucune mesure particulière n'est requise.
- **6.3 Méthodes et matériel de confinement et de nettoyage:** Recueillir par moyen mécanique.
- **6.4 Référence à d'autres sections**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

(suite page 3)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 20.10.2015

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**Nom du produit: ALUMINUM OXIDE (ALUMINA)**

(suite de la page 2)

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Aucune mesure particulière n'est nécessaire en cas de bonne utilisation.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### SECTION 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.

- **8.1 Paramètres de contrôle**

- **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

**1344-28-1 oxyde d'aluminium**

VME	Valeur à long terme: 10 mg/m <sup>3</sup>
-----	---

- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**  
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.  
Retirer immédiatement les vêtements souillés ou humectés.  
Se laver les mains avant les pauses et en fin de travail.  
Eviter tout contact avec les yeux.  
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:** N'est pas nécessaire.
- **Protection des mains:**  
Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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**Fiche de données de sécurité**  
selon 1907/2006/CE, Article 31

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## · Protection des yeux:



Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

## · 9.1 Informations sur les propriétés physiques et chimiques essentielles

## · Indications générales

## · Aspect:

Forme: Poudre cristalline

Couleur: Blanc

· Odeur: Inodore

· Seuil olfactif: Non déterminé.

· valeur du pH: Non applicable.

## · Changement d'état

Point de fusion: 2050 °C

Point d'ébullition: 2980+/-60 °C

· Point d'éclair: Non applicable.

· Inflammabilité (solide, gazeux): La substance n'est pas inflammable.

## · Température d'inflammation:

Température de décomposition: Non déterminé.

· Auto-inflammation: Non déterminé.

· Danger d'explosion: Le produit n'est pas explosif.

## · Limites d'explosion:

Inférieure: Non déterminé.

Supérieure: Non déterminé.

· Pression de vapeur: Non applicable.

· Densité à 20 °C: 3,97 g/cm<sup>3</sup>· Masse volumique à 20 °C: 920 kg/m<sup>3</sup>

· Densité relative: Non déterminé.

· Densité de vapeur: Non applicable.

· Vitesse d'évaporation: Non applicable.

· Solubilité dans/miscibilité avec  
l'eau:

Insoluble

· Coefficient de partage (n-octanol/eau): Non déterminé.

## · Viscosité:

Dynamique: Non applicable.

Cinématique: Non applicable.

## · Teneur en solvants:

Solvants organiques: 0,0 %

VOC (CE) 0,00 %

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<b>Teneur en substances solides:</b>	100,0 %
<b>· 9.2 Autres informations</b>	Pas d'autres informations importantes disponibles.

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë**
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée** Pas d'effet d'irritation.
- **Lésions oculaires graves/irritation oculaire** Effet d'irritation.
- **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.

### SECTION 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:** En général non polluant
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### SECTION 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

FR

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### SECTION 14: Informations relatives au transport

· 14.1 No ONU · ADR, ADN, IMDG, IATA	néant
· 14.2 Nom d'expédition des Nations unies · ADR, ADN, IMDG, IATA	néant
· 14.3 Classe(s) de danger pour le transport · ADR, ADN, IMDG, IATA · Classe	néant
· 14.4 Groupe d'emballage · ADR, IMDG, IATA	néant
· 14.5 Dangers pour l'environnement: · Marine Polluant:	Non
· 14.6 Précautions particulières à prendre par l'utilisateur	Non applicable.
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC	Non applicable.
· "Règlement type" de l'ONU:	-

### SECTION 15: Informations réglementaires

- 15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement
- Directive 2012/18/UE
- Substances dangereuses désignées - ANNEXE I la substance n'est pas comprise
- 15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.

### SECTION 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 Acute Tox. 4: Acute toxicity, Hazard Category 4

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 20.10.2015

überarbeitet am: 20.10.2015

### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** ALUMINUM OXIDE (ALUMINA)
- **Artikelnummer:** 10400
- **CAS-Nummer:**  
1344-28-1
- **EG-Nummer:**  
215-691-6
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**  
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
safety@scienceservices.de
- 24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.  
Acute Tox. 4 H332 Gesundheitsschädlich bei Einatmen.

- **2.2 Kennzeichnungselemente**
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

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**· Gefahrenpiktogramme**


GHS07

**· Signalwort Achtung**
**· Gefahrenhinweise**
*H302+H332 Gesundheitsschädlich bei Verschlucken oder Einatmen.*
**· Sicherheitshinweise**
*P261 Einatmen von Staub/Rauch/Gas/Nebel/Dampf/Aerosol vermeiden.*
*P301+P312 BEI VERSCHLUCKEN: Bei Unwohlsein GIFTINFORMATIONSZENTRUM/Arzt anrufen.*
*P304+P340 BEI EINATMEN: Die Person an die frische Luft bringen und für ungehinderte Atmung sorgen.*
*P420 Von Oxidationsmitteln getrennt lagern.*
*P403+P235 An einem gut belüfteten Ort aufbewahren. Kühl halten.*
*P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*
**· 2.3 Sonstige Gefahren**
**· Ergebnisse der PBT- und vPvB-Beurteilung**
**· PBT:** Nicht anwendbar.

**· vPvB:** Nicht anwendbar.

### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

**· 3.1 Chemische Charakterisierung: Stoffe**
**· CAS-Nr. Bezeichnung**
*1344-28-1 Aluminiumoxid*
**· Identifikationsnummer(n)**
**· EG-Nummer:** 215-691-6

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

**· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
**· Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.

**· Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.

**· Nach Augenkontakt:**
*Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.*
**· Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.

**· 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
*Keine weiteren relevanten Informationen verfügbar.*
**· 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
*Keine weiteren relevanten Informationen verfügbar.*

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

**· 5.1 Löschmittel**
**· Geeignete Löschmittel:**
*CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.*

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- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:** Keine besonderen Maßnahmen erforderlich.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:** Mechanisch aufnehmen.
- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**  
Bei sachgemäßer Verwendung keine besonderen Maßnahmen erforderlich.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

#### · 8.1 Zu überwachende Parameter

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

**1344-28-1 Aluminiumoxid**

AGW	Langzeitwert: $1,25 \cdot 10^{**} \text{ mg/m}^3$ 2(II); *alveolengängig**einatembar; AGS, DFG
-----	---

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

#### · 8.2 Begrenzung und Überwachung der Exposition

- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**  
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.  
Besmutzte, getränkte Kleidung sofort ausziehen.  
Vor den Pausen und bei Arbeitsende Hände waschen.  
Berührung mit den Augen vermeiden.  
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:** Nicht erforderlich.

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(Fortsetzung von Seite 3)

**· Handschutz:**

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

**· Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

**· Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

**· Augenschutz:**


Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

**· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**
**· Allgemeine Angaben**
**· Aussehen:**

**Form:** Kristallines Pulver

**Farbe:** Weiß

**· Geruch:** Geruchlos

**· Geruchsschwelle:** Nicht bestimmt.

**· pH-Wert:** Nicht anwendbar.

**· Zustandsänderung**

**Schmelzpunkt/Schmelzbereich:** 2050 °C

**Siedepunkt/Siedebereich:** 2980+-60 °C

**· Flammpunkt:** Nicht anwendbar.

**· Entzündlichkeit (fest, gasförmig):** Der Stoff ist nicht entzündlich.

**· Zündtemperatur:**

**Zersetzungstemperatur:** Nicht bestimmt.

**· Selbstentzündlichkeit:** Nicht bestimmt.

**· Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich.

**· Explosionsgrenzen:**

**Untere:** Nicht bestimmt.

**Obere:** Nicht bestimmt.

**· Dampfdruck:** Nicht anwendbar.

**· Dichte bei 20 °C:** 3,97 g/cm<sup>3</sup>

**· Schüttdichte bei 20 °C:** 920 kg/m<sup>3</sup>

**· Relative Dichte** Nicht bestimmt.

**· Dampfichte** Nicht anwendbar.

**· Verdampfungsgeschwindigkeit** Nicht anwendbar.

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(Fortsetzung von Seite 4)

· <b>Löslichkeit in / Mischbarkeit mit Wasser:</b>	Unlöslich.
· <b>Verteilungskoeffizient (n-Octanol/Wasser):</b>	Nicht bestimmt.
· <b>Viskosität:</b>	
<b>Dynamisch:</b>	Nicht anwendbar.
<b>Kinematisch:</b>	Nicht anwendbar.
· <b>Lösemittelgehalt:</b>	
<b>Organische Lösemittel:</b>	0,0 %
<b>VOC (EU)</b>	0,00 %
· <b>Festkörpergehalt:</b>	100,0 %
· <b>9.2 Sonstige Angaben</b>	Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Keine Reizwirkung.
- **Schwere Augenschädigung/-reizung** Reizwirkung.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:** Im allgemeinen nicht wassergefährdend
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

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(Fortsetzung auf Seite 6)

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## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 20.10.2015

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### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

- |   |                  |
|---|------------------|
| · <b>14.1 UN-Nummer</b><br>· <b>ADR, ADN, IMDG, IATA</b>  | entfällt         |
| · <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b><br>· <b>ADR, ADN, IMDG, IATA</b>                   | entfällt         |
| · <b>14.3 Transportgefahrenklassen</b><br>· <b>ADR, ADN, IMDG, IATA</b><br>· <b>Klasse</b>            | entfällt         |
| · <b>14.4 Verpackungsgruppe</b><br>· <b>ADR, IMDG, IATA</b>   | entfällt         |
| · <b>14.5 Umweltgefahren:</b><br>· <b>Marine pollutant:</b>   | Nein             |
| · <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b>  | Nicht anwendbar. |
| · <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code</b> | Nicht anwendbar. |
| · <b>UN "Model Regulation":</b>   | -                |

### ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **Nationale Vorschriften:**
- **Wassergefährdungsklasse:** Im allgemeinen nicht wassergefährdend.
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**  
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

(Fortsetzung auf Seite 7)



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**Handelsname: ALUMINUM OXIDE (ALUMINA)**

*IATA: International Air Transport Association*  
*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*  
*EINECS: European Inventory of Existing Commercial Chemical Substances*  
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*  
*VOC: Volatile Organic Compounds (USA, EU)*  
*Acute Tox. 4: Acute toxicity, Hazard Category 4*

(Fortsetzung von Seite 6)

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**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 20.10.2015

Revisione: 20.10.2015

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** ALUMINUM OXIDE (ALUMINA)

· **Articolo numero:** 10400

· **Numero CAS:**

1344-28-1

· **Numeri CE:**

215-691-6

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

Acute Tox. 4 H332 Nocivo se inalato.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS07

· **Avvertenza** Attenzione

· **Indicazioni di pericolo**

H302+H332 Nocivo se ingerito o inalato.

(continua a pagina 2)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

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**Denominazione commerciale: ALUMINUM OXIDE (ALUMINA)**

(Segue da pagina 1)

· **Consigli di prudenza**

- P261 Evitare di respirare la polvere/i fumi/i gas/la nebbia/i vapori/gli aerosol.  
 P301+P312 IN CASO DI INGESTIONE: contattare un CENTRO ANTIVELENI/un medico in caso di malessere.  
 P304+P340 IN CASO DI INALAZIONE: trasportare l'infortunato all'aria aperta e mantenerlo a riposo in posizione che favorisca la respirazione.  
 P420 Conservare lontano dal ossidanti.  
 P403+P235 Conservare in luogo fresco e ben ventilato.  
 P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

· **2.3 Altri pericoli**

· **Risultati della valutazione PBT e vPvB**

- **PBT:** Non applicabile.  
 · **vPvB:** Non applicabile.

**SEZIONE 3: Composizione/informazioni sugli ingredienti**

· **3.1 Caratteristiche chimiche: Sostanze**

- **Numero CAS**  
 1344-28-1 ossido di alluminio  
 · **Numeri di identificazione**  
 · **Numeri CE:** 215-691-6

**SEZIONE 4: Misure di primo soccorso**

· **4.1 Descrizione delle misure di primo soccorso**

- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.  
 · **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.  
 · **Contatto con gli occhi:**  
 Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.  
 · **Ingestione:** Se il dolore persiste consultare il medico.  
 · **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.  
 · **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
 Non sono disponibili altre informazioni.

**SEZIONE 5: Misure antincendio**

· **5.1 Mezzi di estinzione**

- **Mezzi di estinzione idonei:**  
 CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.  
 · **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.  
 · **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**  
 · **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

**SEZIONE 6: Misure in caso di rilascio accidentale**

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** Non necessario.  
 · **6.2 Precauzioni ambientali:** Non sono richiesti provvedimenti particolari.  
 · **6.3 Metodi e materiali per il contenimento e per la bonifica:** Raccogliere con mezzi meccanici.

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**Scheda di dati di sicurezza**  
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**· 6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

Per informazioni relative allo smaltimento vedere Capitolo 13.

**SEZIONE 7: Manipolazione e immagazzinamento**

· **7.1 Precauzioni per la manipolazione sicura** Per un uso corretto non sono necessari provvedimenti particolari.

· **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.

· **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**

· **Stoccaggio:**

· **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.

· **Indicazioni sullo stoccaggio misto:** Non necessario.

· **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.

· **7.3 Usi finali specifici** Non sono disponibili altre informazioni.

**SEZIONE 8: Controllo dell'esposizione/protezione individuale**

· **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

· **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

**1344-28-1 ossido di alluminio**

TWA	Valore a lungo termine: 10 mg/m <sup>3</sup>
A4 (e)	

· **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:**

Tenere lontano da cibo, bevande e foraggi.

Togliere immediatamente gli abiti contaminati.

Lavarsi le mani prima dell'intervallo o a lavoro terminato.

Evitare il contatto con gli occhi.

Evitare il contatto con gli occhi e la pelle.

· **Maschera protettiva:** Non necessario.

· **Guanti protettivi:**

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

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**Scheda di dati di sicurezza**  
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· **Occhiali protettivi:**

Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

· **9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali**· **Indicazioni generali**· **Aspetto:**

<b>Forma:</b>	Polvere cristallina
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<b>Colore:</b>	Bianco
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· **Odore:** Inodore· **Soglia olfattiva:** Non definito.· **valori di pH:** Non applicabile.· **Cambiamento di stato**

<b>Temperatura di fusione/ambito di fusione:</b>	2050 °C
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<b>Temperatura di ebollizione/ambito di ebollizione:</b>	2980+-60 °C
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· **Punto di infiammabilità:** Non applicabile.· **Infiammabilità (solido, gassoso):** Sostanza non infiammabile.· **Temperatura di accensione:**

<b>Temperatura di decomposizione:</b>	Non definito.
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· **Autoaccensione:** Non definito.· **Pericolo di esplosione:** Prodotto non esplosivo.· **Limiti di infiammabilità:**

<b>Inferiore:</b>	Non definito.
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<b>Superiore:</b>	Non definito.
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· **Tensione di vapore:** Non applicabile.· **Densità a 20 °C:** 3,97 g/cm<sup>3</sup>· **Densità apparente a 20 °C:** 920 kg/m<sup>3</sup>· **Densità relativa** Non definito.· **Densità del vapore** Non applicabile.· **Velocità di evaporazione** Non applicabile.· **Solubilità in/Miscibilità con acqua:**

Insolubile.

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.· **Viscosità:**

<b>Dinamica:</b>	Non applicabile.
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<b>Cinematica:</b>	Non applicabile.
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· **Tenore del solvente:**

<b>Solventi organici:</b>	0,0 %
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<b>VOC (CE)</b>	0,00 %
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(continua a pagina 5)

**Scheda di dati di sicurezza**  
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<b>Contenuto solido:</b>	100,0 %
<b>· 9.2 Altre informazioni</b>	Non sono disponibili altre informazioni.

### **SEZIONE 10: Stabilità e reattività**

- **10.1 Reattività**
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

### **SEZIONE 11: Informazioni tossicologiche**

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta**
- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Non ha effetti irritanti.
- **Lesioni oculari gravi/irritazioni oculari gravi** Irritante.
- **Sensibilizzazione respiratoria o cutanea** Non si conoscono effetti sensibilizzanti.

### **SEZIONE 12: Informazioni ecologiche**

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:** Generalmente non pericoloso
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### **SEZIONE 13: Considerazioni sullo smaltimento**

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

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**Scheda di dati di sicurezza**  
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Stampato il: 20.10.2015

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### SEZIONE 14: Informazioni sul trasporto

· 14.1 Numero ONU · ADR, ADN, IMDG, IATA	non applicabile
· 14.2 Nome di spedizione dell'ONU · ADR, ADN, IMDG, IATA	non applicabile
· 14.3 Classi di pericolo connesso al trasporto · ADR, ADN, IMDG, IATA · Classe	non applicabile
· 14.4 Gruppo di imballaggio · ADR, IMDG, IATA	non applicabile
· 14.5 Pericoli per l'ambiente: · Marine pollutant:	No
· 14.6 Precauzioni speciali per gli utilizzatori	Non applicabile.
· 14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC	Non applicabile.
· UN "Model Regulation":	-

### SEZIONE 15: Informazioni sulla regolamentazione

- 15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela
- Direttiva 2012/18/UE
- Sostanze pericolose specificate - ALLEGATO I La sostanza non è contenuta
- 15.2 Valutazione della sicurezza chimica: Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Abbreviazioni e acronimi:**

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  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 Acute Tox. 4: Acute toxicity, Hazard Category 4

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.20

개정: 2015.10.20

### 1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명: ALUMINUM OXIDE (ALUMINA)**
- **상품번호: 10400**
- **CAS-번호**  
1344-28-1
- **EC 의번호:**  
215-691-6
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조사/수입자/유통업자 정보:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Samchang Commercial Co., Ltd.**  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 유해성.위험성

- **순물질 또는 혼합물의 분류**



심한 눈 손상/자극성 구분2 H319 눈에 심한 자극을 일으킴

- **라벨표기 요소**
- **GHS 라벨 요소**  
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- **그림문자**



GHS07

- **신호어 경고**
- **유해.위험 문구**  
눈에 심한 자극을 일으킴
- **예방조치 문구**  
(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.

(2 쪽에 계속)



# 안전지침서

## 제31조의 1907/2006/EC에 따라

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### 제품명: ALUMINUM OXIDE (ALUMINA)

(1 쪽부터계속)

- 눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.  
산화제와 떨어진 곳에 보관  
환기가 잘 되는 곳에 보관하고 저온으로 유지하십시오  
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- 기타 유해성
  - PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
  - PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

### 3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시  
1344-28-1 aluminium oxide
- 식별 번호
- EC 의번호: 215-691-6

### 4 응급조치 요령

- 응급조치요령 내용
- 흡입했을 때: 신선한 공기를 쉼, 통증이 있을 때는 의료진의 도움을 구한다.
- 피부에 접촉했을 때: 일반적으로 이 제품은 피부에 자극적이지 않다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어내고나서, 증상이 지속될 경우에는 의사와 상담한다
- 먹었을 때: 증상이 지속될 경우에는 의사와 상담한다.
- 기타 의사의 주의사항:
- 가장 중요한 급·만성 증상 및 영향 추가적인 정보가 존재하지 않습니다.
- 즉각적인 의료처리 및 특별처리가 필요함을 시사하는 징후 추가적인 정보가 존재하지 않습니다.

### 5 폭발·화재시 대처방법

- 소화제
- 적절한 소화제:  
이산화탄소, 진화용 석회가루 또는 물방사를 사용하고, 더큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 특별한 조치가 필요없음.

### 6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처리 절차 필요없음.
- 환경 관련 예방조치: 특별한 조치가 필요없음.
- 밀폐 및 정화 방법과 소재: 기계를 사용해서 집어 올린다.
- 타 섹션 참조  
안전관리에 대한 정보는 제7장을 참고하십시오.  
개인보호장비에 대한 정보는 제8장을 참고하십시오.  
쓰레기처리에 대한 정보는 제13장을 참고하십시오.

KR

(3 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

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개정: 2015.10.20

**제품명: ALUMINUM OXIDE (ALUMINA)**

(2 쪽부터계속)

### 7 취급 및 저장방법

- 취급:
  - 안전 취급을 위한 예방조치 올바르게 사용할 경우에는 특별한 주의가 필요없다.
  - 화재 및 폭발 사고 예방대책에 관한 정보: 특별한 조치가 필요없음.
- 혼합위험성 등 안전 저장 조건
- 보관:
  - 안전한 저장 방법: 특별한 요구사항이 없음.
  - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필요없음
  - 보관 조건에 관한 추가적인 정보: 용기를 새지 않게 밀폐한 채 보관한다.
  - 구체적인 최종 사용자 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이상 의 자료는 없음. 항목 7 을 참고하시 오.
- 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

1344-28-1 aluminium oxide	
TLV (ROK)	장기간의값: 10 mg/m <sup>3</sup>
PEL (USA)	장기간의값: 15*; 15** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL (USA)	장기간의값: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	장기간의값: 1* mg/m <sup>3</sup> as Al; *as respirable fraction

· 추가 정보: 제조할 당시에 유효한 목록을 기초로 사용했다.

- 노출 통제
- 개인 보호구

· 일반적보호조치및위생조치:

- 식료품, 음료수와 사료로부터 멀리 떨어져 두는 다.
- 더러워 지 거 나 음 료 수 가 묻 은 옷 은 즉시 탈의한다.
- 휴식 전 이 나 작업이 끝날때마다 손을 씻는다.
- 눈과의 접촉을 피한다.
- 눈과 피부와의 접촉은 피한다.

· 호흡기 보호: 필요없음.

· 손 보호:

- 장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
- 테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
- 투과 시간, 침투율 과 저하를 고 려해서 장 갑 재 료를 선택한다.

· 장갑의재료

적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· 장 갑 재 료 의 투과시 간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

(4 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.20

개정: 2015.10.20

**제품명: ALUMINUM OXIDE (ALUMINA)**

· 눈 보호:

(3 쪽부터계속)



· 팍조이는보안경

### 9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보

· 일반정보

· 외형

· 물리적 상태: 수정가루

· 색: 하얀

· 냄새: 무취의

· 후각역치: 알맞지않다.

· pH: 해당사항 없음.

· 상태변화

· 녹는점/어는점: 2050 °C

· 초기 끓는점과 끓는점 범위: 2980+·60 °C

· 인화점: 해당사항 없음.

· 인화성(고체, 기체): 이 제품은 가연 성 이없다.

· 점화온도:

· 분해 온도: 알맞지않다.

· 자기점화: 알맞지않다.

· 폭발위험: 이제품은폭발위험성이없다

· 인화 또는 폭발 범위의 상한/하한

· 아래로: 알맞지않다.

· 위로: 알맞지않다.

· 증기압: 해당사항 없음.

· 밀도 의경우 20 °C: 3.97 g/cm<sup>3</sup>

· 용 적 밀도 의경우 20 °C: 920 kg/m<sup>3</sup>

· 비중: 알맞지않다.

· 증기밀도: 해당사항 없음.

· 증발 속도: 해당사항 없음.

· 용해도:

· 물: 불용해성의

· n 옥탄올/물 분배계수: 알맞지않다.

· 점도:

· 역학성: 해당사항 없음.

· 동점성: 해당사항 없음.

· 용매내용물

· 유기용매: 0.0 %

· VOC (EU): 0.00 %

(5 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.20

개정: 2015.10.20

**제품명: ALUMINUM OXIDE (ALUMINA)**

(4 쪽부터계속)

**고체의 함량:** 100.0 %  
**기타 정보** 추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:
- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 무자극
- 심한 눈 손상 또는 자극성: 자극
- 감각화: 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징: 일반적으로수질오염이되지않는다
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.20

개정: 2015.10.20

**제품명: ALUMINUM OXIDE (ALUMINA)**

(5 쪽부터계속)

### 14 운송에 필요한 정보

· 유엔 번호 · ADR, ADN, IMDG, IATA	누락되다
· UN 적정 선적명 · ADR, ADN, IMDG, IATA	누락되다
· 교통 위험 클래스 · ADR, ADN, IMDG, IATA · 등급	누락되다
· 용기등급 · ADR, IMDG, IATA	누락되다
· 환경적 유해물질: · 해양오염물질:	아니오
· 이용자 특별 예방조치	해당사항 없음.
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· UN "모범 규제":	-

### 15 법적 규제현황

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory		
1344-28-1	aluminium oxide	KE-01012

· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 위험 도표



GHS07

· 표지어 경고

· 위험 문구

눈에 심한 자극을 일으킴

· 주의 문구

(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.

눈에 물으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.

눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.

산화제와 떨어진 곳에 보관

환기가 잘 되는 곳에 보관하고 저온으로 유지하십시오

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

KR

(7 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.20

개정: 2015.10.20

**제품명: ALUMINUM OXIDE (ALUMINA)**

(6 쪽부터계속)

### 16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은  
기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2015.10.20
- **개정 횟수 및 최종 개정일자:** 1 / 2015.10.20
- **약어와 두문자어:**

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

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

심한 눈 손상/자극성 구분2: Serious eye damage/eye irritation, Hazard Category 2

KR

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 20.10.2015

Revisión: 20.10.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

· **Nombre comercial:** ALUMINUM OXIDE (ALUMINA)

· **Número del artículo:** 10400

· **Número CAS:**

1344-28-1

· **Número CE:**

215-691-6

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

#### · 1.3 Datos del proveedor de la ficha de datos de seguridad

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** Product safety department

· **1.4 Teléfono de emergencia:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

· **2.1 Clasificación de la sustancia o de la mezcla**

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS07

Acute Tox. 4 H302 Nocivo en caso de ingestión.

Acute Tox. 4 H332 Nocivo en caso de inhalación.

· **2.2 Elementos de la etiqueta**

· **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· **Pictogramas de peligro**



GHS07

· **Palabra de advertencia** Atención

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 20.10.2015

Revisión: 20.10.2015

**Nombre comercial: ALUMINUM OXIDE (ALUMINA)**

( se continua en página 1 )

· **Indicaciones de peligro**

H302+H332 Nocivo en caso de ingestión o inhalación.

· **Consejos de prudencia**

P261 Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.

P301+P312 EN CASO DE INGESTIÓN: Llamar a un CENTRO DE TOXICOLOGÍA/médico si la persona se encuentra mal.

P304+P340 EN CASO DE INHALACIÓN: Transportar a la persona al aire libre y mantenerla en una posición que le facilite la respiración.

P420 Almacenar alejado de agentes oxidantes.

P403+P235 Almacenar en un lugar bien ventilado. Mantener en lugar fresco.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· **2.3 Otros peligros**

· **Resultados de la valoración PBT y mPmB**

· **PBT:** No aplicable.

· **mPmB:** No aplicable.

### SECCIÓN 3: Composición/información sobre los componentes

· **3.1 Caracterización química: Sustancias**

· **Denominación N° CAS**

1344-28-1 óxido de aluminio

· **Número(s) de identificación**

· **Número CE:** 215-691-6

### SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

· **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.

· **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.

· **En caso de con los ojos:**

Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.

· **En caso de ingestión:** Consultar un médico si los trastornos persisten.

· **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.

· **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

· **5.1 Medios de extinción**

· **Sustancias extintoras apropiadas:**

CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.

· **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.

· **5.3 Recomendaciones para el personal de lucha contra incendios**

· **Equipo especial de protección:** No se requieren medidas especiales.

### SECCIÓN 6: Medidas en caso de vertido accidental

· **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia** No es necesario.

( se continua en página 3 )



# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 20.10.2015

Revisión: 20.10.2015

**Nombre comercial: ALUMINUM OXIDE (ALUMINA)**

( se continua en página 2 )

- **6.2 Precauciones relativas al medio ambiente:** No se requieren medidas especiales.
- **6.3 Métodos y material de contención y de limpieza:** Recoger mecánicamente.
- **6.4 Referencia a otras secciones**  
Ver capítulo 7 para mayor información sobre una manipulación segura.  
Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**  
Si se manipulan correctamente, no se requieren medidas especiales.
- **Prevención de incendios y explosiones:** No se requieren medidas especiales.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
Sin datos adicionales, ver punto 7.

#### · 8.1 Parámetros de control

- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

**1344-28-1 óxido de aluminio**

LEP | Valor de larga duración: 10 mg/m<sup>3</sup>

- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

#### · 8.2 Controles de la exposición

- **Equipo de protección individual:**

- **Medidas generales de protección e higiene:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Evitar el contacto con los ojos.

Evitar el contacto con los ojos y la piel.

- **Protección respiratoria:** No es necesario.

- **Protección de manos:**

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

- **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

- **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

( se continua en página 4 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 20.10.2015

Revisión: 20.10.2015

Nombre comercial: ALUMINUM OXIDE (ALUMINA)

( se continua en página 3 )

· **Protección de ojos:**

Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**· **Datos generales**· **Aspecto:**

**Forma:** Polvo cristalino

**Color:** Blanco

· **Olor:** Inodoro

· **Umbral olfativo:** No determinado.

· **valor pH:** No aplicable.

· **Cambio de estado**

**Punto de fusión /campo de fusión:** 2050 °C

**Punto de ebullición /campo de ebullición:** 2980+/-60 °C

· **Punto de inflamación:** No aplicable.

· **Inflamabilidad (sólido, gaseiforme):** La sustancia no es inflamable.

· **Temperatura de ignición:**

**Temperatura de descomposición:** No determinado.

· **Autoinflamabilidad:** No determinado.

· **Peligro de explosión:** El producto no es explosivo.

· **Límites de explosión:**

**Inferior:** No determinado.

**Superior:** No determinado.

· **Presión de vapor:** No aplicable.

· **Densidad a 20 °C:** 3,97 g/cm<sup>3</sup>

· **Densidad a granel a 20 °C:** 920 kg/m<sup>3</sup>

· **Densidad relativa** No determinado.

· **Densidad de vapor** No aplicable.

· **Velocidad de evaporación** No aplicable.

· **Solubilidad en / miscibilidad con agua:**

Insoluble.

· **Coefficiente de reparto (n-octanol/agua):** No determinado.

· **Viscosidad:**

**Dinámica:** No aplicable.

**Cinemática:** No aplicable.

· **Concentración del disolvente:**

**Disolventes orgánicos:** 0,0 %

**VOC (CE)** 0,00 %

( se continua en página 5 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 20.10.2015

Revisión: 20.10.2015

**Nombre comercial:** ALUMINUM OXIDE (ALUMINA)

( se continua en página 4 )

<b>Contenido de cuerpos sólidos:</b>	100,0 %
<b>· 9.2 Información adicional</b>	No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad**
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda**
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** No produce irritaciones.
- **Lesiones o irritación ocular graves** Produce irritaciones.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:** Por regla general, no es peligroso para el agua
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

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( se continua en página 6 )

# Ficha de datos de seguridad

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fecha de impresión 20.10.2015

Revisión: 20.10.2015

Nombre comercial: ALUMINUM OXIDE (ALUMINA)

( se continua en página 5 )

### SECCIÓN 14: Información relativa al transporte

- |   |               |
|---|---------------|
| · 14.1 Número UN  |               |
| · ADR, ADN, IMDG, IATA  | suprimido     |
| · 14.2 Designación oficial de transporte de las Naciones Unidas                               |               |
| · ADR, ADN, IMDG, IATA  | suprimido     |
| · 14.3 Clase(s) de peligro para el transporte   |               |
| · ADR, ADN, IMDG, IATA  |               |
| · Clase   | suprimido     |
| · 14.4 Grupo de embalaje  |               |
| · ADR, IMDG, IATA   | suprimido     |
| · 14.5 Peligros para el medio ambiente:   |               |
| · Contaminante marino:  | No            |
| · 14.6 Precauciones particulares para los usuarios  | No aplicable. |
| · 14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC | No aplicable. |
| · "Reglamentación Modelo" de la UNECE:  | -             |

### SECCIÓN 15: Información reglamentaria

- 15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla
- Directiva 2012/18/UE
- Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.
- 15.2 Evaluación de la seguridad química: Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

#### · Abreviaturas y acrónimos:

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

Acute Tox. 4: Acute toxicity, Hazard Category 4