SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: Aluminium oxide, neutral, Brockmann I
Cat No.: 366680000; 366680010; 366680025; 366680050; 366680250
Synonyms: Alumina
CAS-No: 1344-28-1
EC-No.: 215-691-6
Molecular Formula: Al2 O3
Reach Registration Number: 01-2119529248-35

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

Recommended Use: Laboratory chemicals.
Sector of use: SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category: PC21 - Laboratory chemicals
Process categories: PROC15 - Use as a laboratory reagent
Environmental release category: ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against: No Information available

1.3. Details of the supplier of the safety data sheet

Company
UK entity/business name
Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

EU entity/business name
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

E-mail address: begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US: 001-800-424-9300 / Europe: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met
2.2. Label elements

Hazard Statements

Precautionary Statements

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>1344-28-1</td>
<td>EEC No. 215-691-6</td>
<td>&gt;95</td>
<td>-</td>
</tr>
</tbody>
</table>

Reach Registration Number 01-2119529248-35

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Ingestion
Do not induce vomiting. Obtain medical attention.

Inhalation
Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

Self-Protection of the First Aider
No special precautions required.

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

No information available.
4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Non-combustible. None reasonably foreseeable.

Hazardous Combustion Products
None under normal use conditions.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do
not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

<table>
<thead>
<tr>
<th>Component</th>
<th>The United Kingdom</th>
<th>European Union</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>STEL: 30 mg/m³ 15 min</td>
<td>STEL: 12 mg/m³ 15 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hr</td>
<td>TWA: 4 mg/m³ 8 hr</td>
<td></td>
</tr>
</tbody>
</table>

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust.

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures
None under normal use conditions.

Personal protective equipment
Eye Protection: Safety glasses with side-shields (European standard - EN 166)
Hand Protection: Protective gloves
Skin and body protection  
Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection  
No protective equipment is needed under normal use conditions.

Large scale/emergency use  
Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Recommended Filter type: Particle filter

Small scale/Laboratory use  
Maintain adequate ventilation

Environmental exposure controls  
No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off-white</td>
</tr>
<tr>
<td>Physical State</td>
<td>Powder Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>6.5-7.5</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>2050 °C / 3722 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>2980 °C / 5396 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>negligible</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity / Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2. Other information
SAFETY DATA SHEET

Aluminium oxide, neutral, Brockmann I

Molecular Formula: Al₂O₃
Molecular Weight: 101.96

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
None known, based on information available

10.2. Chemical stability
No information available.

10.3. Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Hazardous Polymerization</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Reactions</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

10.4. Conditions to avoid
Avoid dust formation. Incompatible products. Exposure to moisture.

10.5. Incompatible materials

10.6. Hazardous decomposition products
None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;
   Oral Based on available data, the classification criteria are not met
   Dermal Based on available data, the classification criteria are not met
   Inhalation Based on available data, the classification criteria are not met

<table>
<thead>
<tr>
<th>Component</th>
<th>LD₅₀ Oral</th>
<th>LD₅₀ Dermal</th>
<th>LC₅₀ Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>&gt; 5000 mg/kg (Rat) (OECD Guideline 401)</td>
<td></td>
<td>&gt; 2.3 mg/l 4 h (OECD Guideline 403)</td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;
   Respiratory Based on available data, the classification criteria are not met
   Skin Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met
   Not mutagenic in AMES Test

(f) carcinogenicity; Based on available data, the classification criteria are not met
   The table below indicates whether each agency has listed any ingredient as a carcinogen
SAFETY DATA SHEET

Aluminium oxide, neutral, Brockmann I

Component | EU | UK | Germany | IARC
---|---|---|---|---
Aluminum oxide |  |  |  | Cat. 2

(g) reproductive toxicity; Based on available data, the classification criteria are not met
(h) STOT-single exposure; Based on available data, the classification criteria are not met
(i) STOT-repeated exposure; Based on available data, the classification criteria are not met
Target Organs None known.
(j) aspiration hazard; Not applicable
Solid
Other Adverse Effects The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed**
No information available

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1. Toxicity**
Ecotoxicity effects Do not empty into drains.

**12.2. Persistence and degradability**
Persistence Insoluble in water.
Degradability Not relevant for inorganic substances.

**12.3. Bioaccumulative potential**
May have some potential to bioaccumulate

**12.4. Mobility in soil**
Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility.

**12.5. Results of PBT and vPvB assessment**
No data available for assessment.

**12.6. Other adverse effects**
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**
Waste from Residues / Unused Products Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated Packaging Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

### SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**
- Not regulated

**ADR**
- Not regulated

**IATA**
- Not regulated

**14.5. Environmental hazards**
- No hazards identified

**14.6. Special precautions for user**
- No special precautions required

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
- Not applicable, packaged goods

### SECTION 15: REGULATORY INFORMATION

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

**International Inventories**

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>215-691-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-0101 2</td>
<td></td>
</tr>
</tbody>
</table>

**National Regulations**

<table>
<thead>
<tr>
<th>Component</th>
<th>Germany - Water Classification (VwVwS)</th>
<th>Germany - TA-Luft Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>nwg - nicht wassergefährdend (non-hazardous to waters)</td>
<td></td>
</tr>
</tbody>
</table>

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

Legend

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical Abstracts Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS/ELINCS</td>
<td>European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Chemicals and Chemical Substances</td>
</tr>
<tr>
<td>IECSC</td>
<td>Chinese Inventory of Existing Chemical Substances</td>
</tr>
<tr>
<td>KECL</td>
<td>Korean Existing and Evaluated Chemical Substances</td>
</tr>
<tr>
<td>WEL</td>
<td>Workplace Exposure Limit</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No Effect Level</td>
</tr>
<tr>
<td>RPE</td>
<td>Respiratory Protective Equipment</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative, Toxic</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement Concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td>International Maritime Organization/International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>Key literature references and sources for data</td>
<td></td>
</tr>
<tr>
<td>Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS</td>
<td></td>
</tr>
</tbody>
</table>

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Creation Date 09-Jul-2014
Revision Date 26-Feb-2019
Revision Summary Not applicable.

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

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet