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Revision Number 2

**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE
COMPANY/UNDERTAKING****Product Identifier****Product Description:****Aluminium oxide****Cat No.****A/2320/53****Synonyms**

Alumina

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

Laboratory chemicals

Uses advised against

No Information available

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

Fisher Scientific UK
Bishop Meadow Rd
Loughborough, Leicestershire, Great Britain
LE115RG
Tel: 01509 231166

E-mail address

begel.sdsdesk@thermofisher.com

Emergency Telephone Number

Tel: 01509 231166

Chemtrec US: (800) 424-9300

Chemtrec EU: 001 (202) 483-7616

SECTION 2. HAZARDS IDENTIFICATION**Classification of the substance or mixture****REGULATION (EC) No 1272/2008**

Not hazardous

Classification according to EU Directives 67/548/EEC or 1999/45/EC*For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16***R-phrases(s)**

none

Label Elements**Signal Word**

None

Hazard Statements**Other Hazards**

No information available.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
Aluminum oxide 1344-28-1	EEC No. 215-691-6	>95	1344-28-1		-	-

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4. FIRST AID MEASURES

Description of first aid measures

Eye Contact

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

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion

Do not induce vomiting. Obtain medical attention.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Notes to Physician

Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

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

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Non-combustible.

Advice for fire-fighters

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

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental precautions

Should not be released into the environment.

Methods and material for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

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

Conditions for safe storage, including any incompatibilities

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

Specific End Uses

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Component
Aluminum oxide

European Union	The United Kingdom	France	Belgium	Spain
	STEL: 30 mg/m ³ 15 min STEL: 12 mg/m ³ 15 min TWA: 10 mg/m ³ 8 hr TWA: 4 mg/m ³ 8 hr	VME: 10 mg/m ³ 8 heures.	TWA: 1 mg/m ³ 8 uren	VLA-ED: 10 mg/m ³ 8 horas

Component

Aluminum oxide

Italy	Germany	Portugal	The Netherlands	Finland
	MAK: 4 mg/m ³ 8 Stunden. dust, inhalable fraction MAK: 1.5 mg/m ³ 8 Stunden. dust, respirable fraction	TWA: 10 mg/m ³ 8 horas		

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Component
Aluminum oxide

Austria	Denmark	Switzerland	Poland	Norway
STEL: 10 mg/m ³ 15 Minuten TWA: 5 mg/m ³ 8 Stunden	TWA: 5 mg/m ³ 8 timer TWA: 2 mg/m ³ 8 timer	STEL: 24 mg/m ³ 15 Minuten MAK: 3 mg/m ³ 8 Stunden	TWA: 2.5 mg/m ³ 8 godzinach TWA: 1.2 mg/m ³ 8 godzinach	TWA: 10 mg/m ³ 8 timer STEL: 20 mg/m ³ 15 minutter.

Component
Aluminum oxide

Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
	TWA: 10 mg/m ³ 8 satima. total dust TWA: 4 mg/m ³ 8 satima. respirable dust	TWA: 10 mg/m ³ 8 hr. total inhalable dust TWA: 4 mg/m ³ 8 hr. respirable dust		TWA: 0.1 mg/m ³ 8 hodinách. respirable fraction

Component
Aluminum oxide

Estonia	Gibraltar	Greece	Hungary	Iceland
TWA: 10 mg/m ³ 8 tundides. total dust TWA: 4 mg/m ³ 8 tundides. respirable dust		TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 6 mg/m ³ 8 órában. respirable dust	TWA: 10 mg/m ³ 8 klukkustundum. Al Ceiling: 20 mg/m ³

Component
Aluminum oxide

Latvia	Lithuania	Luxembourg	Malta	Romania
TWA: 6 mg/m ³	TWA: 5 mg/m ³ Al inhalable fraction TWA: 2 mg/m ³ Al respirable fraction			TWA: 1 mg/m ³ 8 ore TWA: 3 mg/m ³ 8 ore TWA: 2 mg/m ³ 8 ore TWA: 0.5 ppm 8 ore STEL: 1.2 ppm 15 minute STEL: 5 mg/m ³ 15 minute STEL: 10 mg/m ³ 15 minute STEL: 3 mg/m ³ 15 minute

Component
Aluminum oxide

Russia - TWA	Slovak Republic	Slovenia	Sweden	Turkey
TWA: 6 mg/m ³ MAC: 6 mg/m ³	TWA: 1.5 mg/m ³ fume TWA: 1.5 mg/m ³ TWA: 0.1 mg/m ³ respirable fraction		LLV: 5 mg/m ³ 8 timmar. total dust LLV: 2 mg/m ³ 8 timmar. respirable dust	

Biological limit values

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

Derived No Effect Level (DNEL)

No information available.

Predicted No Effect Concentration (PNEC)

No information available.

Exposure controls
Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location Ensure adequate ventilation, especially in confined areas

Personal protective equipment
Eye Protection

Safety glasses with side-shields

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Hand Protection
Skin and body protection
Respiratory Protection

Protective gloves
Wear appropriate protective gloves and clothing to prevent skin exposure
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures
Environmental exposure controls

Handle in accordance with good industrial hygiene and safety practice
No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	White
odor	odorless
pH	No information available.
Vapor Pressure	negligible
Vapor Density	No information available.
Boiling Point/Range	2980°C / 5396°F
Melting Point/Range	2000°C / 3632°F
Flash Point	Not applicable
Autoignition Temperature	No information available.
Evaporation Rate	No information available.
Molecular Formula	Al ₂ O ₃
Molecular Weight	101.96

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization
Hazardous Reactions .

Hazardous polymerization does not occur.
None under normal processing..

Conditions to Avoid

Incompatible products, Excess heat, Avoid dust formation.

Incompatible Materials

Strong oxidizing agents, Acids, Bases.

Hazardous Decomposition Products

None under normal use conditions

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SECTION 11. TOXICOLOGICAL INFORMATIONInformation on Toxicological EffectsAcute Toxicity**Component Information****Component**
Aluminum oxide

LD50 Oral	LD50 Dermal	LC50 Inhalation
5000 mg/kg (Rat)		

Chronic Toxicity**Carcinogenicity**

There are no known carcinogenic chemicals in this product

Sensitization

No information available.

Mutagenic Effects

No information available

Reproductive Effects

No information available.

Developmental Effects

No information available.

Target Organs

None known.

Other Adverse Effects

The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

Endocrine Disruptor Information

None known

SECTION 12. ECOLOGICAL INFORMATIONToxicity**Ecotoxicity effects**

Do not empty into drains

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

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Results of PBT and vPvB assessment

Other adverse effects

No information available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to local recyclers for disposal

SECTION 14. TRANSPORT INFORMATION

IMDG/IMO Not regulated

ADR Not regulated

IATA Not regulated

SECTION 15. REGULATORY INFORMATION

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

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Aluminum oxide	215-691-6	-		X	X	-	X	X	X	X	X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

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AICS - Inventory of Chemical Substances

KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment**SECTION 16. OTHER INFORMATION****Full text of R-phrases referred to under sections 2 and 3**

No information available.

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Revision Summary

Reason for revision Not applicable

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

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet