



Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

- Product Name** • **Synthetic Sapphire**
Synonyms • Al₂O₃; Aluminum Oxide; Corundum; Sapphire

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

- Relevant identified use(s)** • Industrial, Commercial

1.3 Details of the supplier of the safety data sheet

- Manufacturer** • Saint-Gobain Crystals
33 Powers Street
Milford, NH 03055
United States
www.crystals.saint-gobain.com
scintillation@saint-gobain.com
Telephone (General) • (603) 673-5831

1.4 Emergency telephone number

- Manufacturer** • (603) 673-5831

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

2.1 Classification of the substance or mixture

- CLP** • Not classified

2.2 Label Elements

- CLP**
Hazard statements • No label element(s) required

2.3 Other Hazards

- CLP** • This material is exempt from CLP/REACH obligations as an article as specified in REACH (1907/2006) and related ECHA guidance.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

- OSHA HCS 2012** • Not classified

2.2 Label elements

OSHA HCS 2012

Hazard statements • No label element(s) required

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200(c) - Hazard Communication Standard), the product(s) listed above are exempt as article(s) under stated normal conditions of use.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Not classified

2.2 Label elements

WHMIS

- No label element(s) required.

2.3 Other hazards

WHMIS

- Under Canadian regulations (Workplace Hazardous Materials Information System (WHMIS) - Hazardous Products Act (HPA), Section 11(1)), these product(s) are exempt and considered manufactured article(s) under stated normal conditions of use.

2.4 Other information

- As an article this material does not legally require an SDS.

Section 3 - Composition/Information on Ingredients

3.1 Substances

Composition		
Chemical Name	Identifiers	%
Aluminum oxide	CAS:1344-28-1 EC Number:215-691-6	100%

3.2 Mixtures

- Material does not meet the criteria of a mixture.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation

- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin

- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention.

- Eye**
- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Ingestion**
- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Under normal conditions of use, no health effects are expected.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- No specific actions or treatments recommended related to exposure to this material.

Section 5 - Firefighting Measures

5.1 Extinguishing media

- Suitable Extinguishing Media**
- In case of fire use media as appropriate for surrounding fire.

- Unsuitable Extinguishing Media**
- No data available.

5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Material is non-combustible and is not expected to pose a fire or explosion hazard.

- Hazardous Combustion Products**
- No data available

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- No special precautions expected to be necessary if material is used under ordinary conditions and as recommended.

- Emergency Procedures**
- No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- Carefully shovel or sweep up spilled material and place in suitable container.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

- Handling**
- Use good safety and industrial hygiene practices. Use proper ventilation and dust mask when cutting or grinding, wet cutting or grinding will prevent dusting. Do not drop, article may shatter.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool, dry place.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection**8.1 Control parameters**

Exposure Limits/Guidelines						
	Result	ACGIH	China	Denmark	France	Germany DFG
Aluminum oxide (1344-28-1)	STELs	Not established	8 mg/m ³ STEL (total dust)	Not established	Not established	Not established
	TWAs	1 mg/m ³ TWA (respirable fraction) <i>as Aluminum insoluble compounds</i>	4 mg/m ³ TWA (total dust)	5 mg/m ³ TWA (total, as Al); 2 mg/m ³ TWA (respirable, as Al)	10 mg/m ³ TWA [VME]	Not established
	MAKs	Not established	Not established	Not established	Not established	4 mg/m ³ TWA MAK (dust, inhalable fraction); 1.5 mg/m ³ TWA MAK (dust, respirable fraction)
Exposure Limits/Guidelines (Con't.)						
	Result	Greece	Hungary	OSHA	Poland	Portugal
Aluminum oxide (1344-28-1)	TWAs	10 mg/m ³ TWA (inhalable fraction); 5 mg/m ³ TWA (respirable fraction)	6 mg/m ³ TWA [AK] (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)	2.5 mg/m ³ TWA [NDS] (inhalable fraction, as Al); 1.2 mg/m ³ TWA [NDS] (respirable fraction, as Al)	10 mg/m ³ TWA [VLE-MP] (particulate matter containing no Asbestos and < 1% Crystalline silica)
Exposure Limits/Guidelines (Con't.)						
	Result	Spain		Sweden		
Aluminum oxide (1344-28-1)	TWAs	10 mg/m ³ TWA [VLA-ED]		5 mg/m ³ LLV (total dust, as Al); 2 mg/m ³ LLV (respirable dust, as Al)		

Exposure Control Notations**Portugal**

- Aluminum oxide (1344-28-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

ACGIH

- Aluminum oxide as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Germany DFG

- Aluminum oxide (1344-28-1): **Carcinogens:** (Category 2 (considered to be carcinogenic for man, fibre dust)) | **Pregnancy:** (classification not yet possible (respirable, inhalable, dust))

Exposure Limits Supplemental**ACGIH**

- Aluminum oxide as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)

8.2 Exposure controls**Engineering**

- Adequate ventilation systems as needed to control concentrations of airborne

- Measures/Controls** contaminants below applicable threshold limit values.
- Personal Protective Equipment**
- Respiratory**
 - If dust generation is anticipated a NIOSH approved disposable or other dust masks should be worn.
 - Eye/Face**
 - Wear safety glasses.
 - Skin/Body**
 - Wear appropriate gloves.
- Environmental Exposure Controls**
- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

STEL = Short Term Exposure Limits are based on 15-minute exposures.

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH).

NIOSH = National Institute of Occupational Safety and Health

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures.

OSHA = Occupational Safety and Health Administration

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Glass-like, transparent solid with no odor.
Color	Transparent	Odor	Odorless
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	2053 C(3727.4 F)
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	Data lacking	Water Solubility	Negligible < 0.1 %
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- No data available.

10.5 Incompatible materials

- No data available.

10.6 Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

GHS Properties	Classification
Respiratory sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Serious eye damage/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Acute toxicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Aspiration Hazard	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Carcinogenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin corrosion/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
STOT-RE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
STOT-SE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Toxicity for Reproduction	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)

- Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

Chronic (Delayed)

- No data available

Skin

- Acute (Immediate)**
 - Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may cause mechanical irritation.
- Chronic (Delayed)**
 - No data available

Eye

- Acute (Immediate)**
 - Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may cause mechanical irritation.
- Chronic (Delayed)**
 - No data available

Ingestion

- Acute (Immediate)**
 - Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)**
 - No data available

Section 12 - Ecological Information**12.1 Toxicity**

- Material data lacking.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- Material data lacking.

Section 13 - Disposal Considerations**13.1 Waste treatment methods**

- Product waste**
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- Packaging waste**
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not Regulated	NDA	NDA	NDA

IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA
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14.6 Special precautions for user • None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Data lacking.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • None

State Right To Know		
Component	CAS	PA
Aluminum oxide	1344-28-1	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Aluminum oxide	1344-28-1	Yes	No	Yes	Yes	No

Inventory (Con't.)			
Component	CAS	Korea KECL	TSCA
Aluminum oxide	1344-28-1	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria
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Canada - WHMIS - Ingredient Disclosure List

• Aluminum oxide	1344-28-1	1 %
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Environment

Canada - CEPA - Priority Substances List

• Aluminum oxide	1344-28-1	Not Listed
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China

Environment

China - Ozone Depleting Substances - First Schedule

• Aluminum oxide	1344-28-1	Not Listed
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China - Ozone Depleting Substances - Second Schedule

• Aluminum oxide	1344-28-1	Not Listed
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China - Ozone Depleting Substances - Third Schedule

• Aluminum oxide	1344-28-1	Not Listed
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Other**China - Annex I & II - Controlled Chemicals Lists**

• Aluminum oxide	1344-28-1	Not Listed
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China - Dangerous Goods List

• Aluminum oxide	1344-28-1	Not Listed
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Germany**Labor****Germany - Immission Control - Qualifying Quantities for Major Accident Prevention**

• Aluminum oxide	1344-28-1	Not Listed
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Germany - Immission Control - Qualifying Quantities for Safety Reporting

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TRGS 505 - Specific Lead Regulations

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TRGS 511 - Specific Ammonium Nitrate Regulations

• Aluminum oxide	1344-28-1	Not Listed
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Environment**Germany - TA Luft - Types and Classes**

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TA Luft - Emission Limits for Carcinogenic Substances

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TA Luft - Emission Limits for Fibers

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TA Luft - Emission Limits for Inorganic Dusts

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TA Luft - Emission Limits for Inorganic Gases

• Aluminum oxide	1344-28-1	Not Listed
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Germany - TA Luft - Emission Limits for Organic Substances

• Aluminum oxide	1344-28-1	Not Listed
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Germany - Water Classification (VwVwS) - Annex 1

• Aluminum oxide	1344-28-1	ID Number 1346, not considered hazardous to water
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Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

• Aluminum oxide	1344-28-1	Not Listed
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Germany - Water Classification (VwVwS) - Annex 3

• Aluminum oxide	1344-28-1	Not Listed
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United States**Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - OSHA - Specifically Regulated Chemicals

• Aluminum oxide	1344-28-1	Not Listed
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Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
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U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Aluminum oxide	1344-28-1	Not Listed
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United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - California - Proposition 65 - Developmental Toxicity

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Aluminum oxide	1344-28-1	Not Listed
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U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Aluminum oxide	1344-28-1	Not Listed
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United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Aluminum oxide	1344-28-1	
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U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Aluminum oxide

1344-28-1

Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Revision Date

- 21/October/2015

Preparation Date

- 01/September/1985

Disclaimer/Statement of Liability

- The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Key to abbreviations

NDA = No Data Available
