



S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 6/4/2015 Revision date: 10/30/2024 Supersedes: 10/11/2021

SECTION 1: Identification

1.1. Identification

Product form : Article
Product name : S-16
CAS-No. : Mixture
Product code : 4923
Other means of identification : Clay Graphite Fired Shape

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Refractory
Recommended use : Industrial use

1.3. Supplier

Resco Products, Inc.
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA, 15205
United States
T 412-494-4491
SDS@RescoProducts.com - WWW.RescoProducts.com

1.4. Emergency telephone number

Emergency number : EMERGENCY ONLY (CHEMTREC) USA & Canada 1-800-424-9300
Outside USA & Canada +1 703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements

This product meets the definition and criteria for an article according to OSHA 29 CFR 1910.1200 and the EU REACH 1907/2006 Article 3(3) regulations. No labeling obligation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
aluminium oxide, non-fibrous	CAS-No.: 1344-28-1	20 – 50	Not classified
graphite	CAS-No.: 7782-42-5	20 – 50	Not classified
crystalite	CAS-No.: 14464-46-1	5 – 10	Carc. 1A, H350

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person.
First-aid measures after inhalation : Allow affected person to breathe fresh air.
First-aid measures after skin contact : Gently wash with plenty of soap and water.
First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after inhalation : Dust on tear out. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation.
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Dust from this product may cause eye irritation.

S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : In case of fire, all extinguishing media allowed.

5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable.
Hazardous decomposition products in case of fire : Fire conditions may produce carbon dioxide-carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

Protective equipment : Use personal protective equipment as required.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Collect spillage.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear Safety shoes, Gloves. Do not handle until all safety precautions have been read and understood.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store this product in a dry location where it can be protected from the elements.
Incompatible products : Strong acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

S-16 (Mixture)

No additional information available

crystalite (14464-46-1)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 0.025 mg/m³ respirable dust

USA - OSHA - Occupational Exposure Limits

OSHA PEL (TWA) [1] 0.05 mg/m³ respirable dust

aluminium oxide, non-fibrous (1344-28-1)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 1 mg/m³ respirable dust

graphite (7782-42-5)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA 2 mg/m³ (Respirable fraction)

8.2. Appropriate engineering controls

Appropriate engineering controls : Dust on tear out. Provide adequate ventilation to minimize dust concentrations.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear protective gloves.

S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Skin and body protection:

Safety shoes. Wear suitable protective clothing

Respiratory protection:

Dust on tear out. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid in various shapes.
Color	: Black
Odor	: None
Odor threshold	: No data available
pH	: No data available
Melting point	: > 2000 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: ≈ 2.1
Solubility	: Insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

On heating/burning: release of carbon monoxide - carbon dioxide.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

aluminium oxide, non-fibrous (1344-28-1)

LD50 oral rat	> 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 2.3 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))

S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

graphite (7782-42-5)

LD50 oral rat	> 2000 mg/kg (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral)
---------------	----------------------------------------------------------------------------------------------------------------

LC50 Inhalation - Rat	> 2000 mg/m ³ air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust))
-----------------------	------------------------------------------------------------------------------------------------------------------------------------

Skin corrosion/irritation : Not classified

cristobalite (14464-46-1)

pH	6 – 7
----	-------

aluminium oxide, non-fibrous (1344-28-1)

pH	9 – 10.5 (aqueous suspension, 33 %)
----	-------------------------------------

graphite (7782-42-5)

pH	7 (1.3 %)
----	-----------

Serious eye damage/irritation : Not classified

cristobalite (14464-46-1)

pH	6 – 7
----	-------

aluminium oxide, non-fibrous (1344-28-1)

pH	9 – 10.5 (aqueous suspension, 33 %)
----	-------------------------------------

graphite (7782-42-5)

pH	7 (1.3 %)
----	-----------

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : No data available

aluminium oxide, non-fibrous (1344-28-1)

Viscosity, kinematic	Not applicable (solid)
----------------------	------------------------

Potential Adverse human health effects and symptoms : Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after inhalation : Dust on tear out. Danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation.
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Dust from this product may cause eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

aluminium oxide, non-fibrous (1344-28-1)

LC50 - Fish [1]	> 100 mg/l (96 h, Salmo trutta, Literature study)
-----------------	---------------------------------------------------

EC50 - Crustacea [1]	> 100 mg/l (48 h, Daphnia magna, Literature study)
----------------------	----------------------------------------------------

graphite (7782-42-5)

LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Lethal)
-----------------	-----------------------------------------------------------------------------------------------------------------------------

EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Behaviour)
----------------------	----------------------------------------------------------------------------------------------------------------------------------------------

EC50 72h - Algae [1]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
----------------------	---------------------------------------------------------------------------------------------------------------------------------------------------

S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

graphite (7782-42-5)	
EC50 72h - Algae [2]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Cell numbers)

12.2. Persistence and degradability

cristobalite (14464-46-1)	
Persistence and degradability	Mineral. Not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

aluminium oxide, non-fibrous (1344-28-1)	
Persistence and degradability	Not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

graphite (7782-42-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

cristobalite (14464-46-1)	
Bioaccumulative potential	No data available.

aluminium oxide, non-fibrous (1344-28-1)	
Bioaccumulative potential	No data available.

graphite (7782-42-5)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

cristobalite (14464-46-1)	
Ecology - soil	No data available.

aluminium oxide, non-fibrous (1344-28-1)	
Surface tension	No data available in the literature
Ecology - soil	No data available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

S-16

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

aluminium oxide, non-fibrous (1344-28-1)

Not subject to reporting requirements of the United States SARA Section 313

Note	Note: The section 313 chemical list contains "CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)"; the Aluminum oxide contained in this product is non-fibrous, and thus is not a section 313 material. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting.
------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

15.2. International regulations

CANADA

crystalite (14464-46-1)

Listed on the Canadian DSL (Domestic Substances List)

aluminium oxide, non-fibrous (1344-28-1)

Listed on the Canadian DSL (Domestic Substances List)

graphite (7782-42-5)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

S-16 (Mixture)

U.S. - California - Proposition 65 - Other information	This product contains crystalline silica, a chemical known to the State of California to cause cancer. For more information go to WWW.P65Warnings.ca.gov
--------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

crystalite (14464-46-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

Component

State or local regulations

Crystalite (14464-46-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
aluminium oxide, non-fibrous (1344-28-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Graphite (7782-42-5)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/30/2024

Other information : Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

Full text of H-phrases

H350	May cause cancer
------	------------------

Safety Data Sheet (SDS), USA

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein, however, Resco Products, Inc. makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.