



# C-4

## Safety Data Sheet

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

Date of issue: 11/18/2015

Revision date: 11/18/2015

Supersedes: 06/04/2015

### SECTION 1: Identification

#### 1.1. Identification

Product form : Article  
Product name : C-4  
CAS-No. : Mixture  
Product code : 4917  
Other means of identification : Clay Graphite Fired Shape

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Refractory

#### 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](mailto:SDS@RescoProducts.com) - [WWW.RescoProducts.com](http://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

Carcinogenicity Category H350 May cause cancer  
1A

Full text of H statements : see section 16

#### 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.

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
graphite	(CAS-No.) 7782-42-5	20 - 50	Not classified
cristobalite	(CAS-No.) 14464-46-1	10 - 20	Carc. 1A, H350
aluminium oxide, non-fibrous	(CAS-No.) 1344-28-1	5 - 10	Not classified
Si	(CAS-No.) 7440-21-3	5 - 10	Not classified

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 victim 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)

Symptoms/effects after inhalation : May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.  
Symptoms/effects after skin contact : Irritation.  
Symptoms/effects after eye contact : Dust from sawing or tear out may irritate eye.  
Symptoms/effects after ingestion : No data available.

#### 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.

# C-4

## Safety Data Sheet

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

Unsuitable extinguishing media : No unsuitable extinguishing media known.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Non-flammable.  
Reactivity : On heating/burning: release of carbon monoxide - carbon dioxide.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : No specific fire-fighting instructions required.  
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.  
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

cristobalite (14464-46-1)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (Silica-Crystalline Cristobalite; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> respirable dust
aluminium oxide, non-fibrous (1344-28-1)		
Not applicable		
graphite (7782-42-5)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (Graphite (all forms except graphite fibers); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)
Si (7440-21-3)		
Not applicable		

### 8.2. Appropriate engineering controls

No additional information available

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Wear protective gloves.

#### Eye protection:

Safety glasses

#### Respiratory protection:

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

# C-4

## Safety Data Sheet

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

Melting point	: > 3000 °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)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: ≈ 1.9
Solubility	: Insoluble in 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 : Not classified

<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
LD50 oral rat	> 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male/female, Experimental value)
LC50 inhalation rat (mg/l)	7.6 mg/l air (Equivalent or similar to OECD 403, 1 h, Rat, Male, Experimental value)
<b>graphite (7782-42-5)</b>	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 423: Acute Oral Toxicity – Acute Toxic Class Method; Experimental value)
<b>Si (7440-21-3)</b>	
LD50 oral rat	> 3160 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; >5000 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	> 5000 mg/kg body weight (Rabbit; Weight of evidence)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.
<b>crystalite (14464-46-1)</b>	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity : Not classified

# C-4

## Safety Data Sheet

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

Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Dust from sawing or tear out may irritate eye.
Symptoms/effects after ingestion	: No data available.

### SECTION 12: Ecological information

#### 12.1. Toxicity

<b>graphite (7782-42-5)</b>	
LC50 fish 1	> 100 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Danio rerio; Static system; Fresh water; Experimental value)
EC50 Daphnia 1	> 100 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
Threshold limit algae 1	> 100 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)
Threshold limit algae 2	> 100 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)

#### 12.2. Persistence and degradability

<b>crystalite (14464-46-1)</b>	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable (inorganic)
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
<b>graphite (7782-42-5)</b>	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
<b>Si (7440-21-3)</b>	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

#### 12.3. Bioaccumulative potential

<b>crystalite (14464-46-1)</b>	
Bioaccumulative potential	No test data available.
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Bioaccumulative potential	No bioaccumulation data available.
<b>graphite (7782-42-5)</b>	
Bioaccumulative potential	No bioaccumulation data available.

#### 12.4. Mobility in soil

<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Ecology - soil	No (test) data on mobility of the substance available.
<b>Si (7440-21-3)</b>	
Surface tension	0.74 N/m (1410 °C)

#### 12.5. Other adverse effects

No additional information available

# C-4

## Safety Data Sheet

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

### 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

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

#### Transportation of Dangerous Goods

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

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

Subject to reporting requirements of United States SARA Section 313

#### 15.2. International regulations

##### CANADA

No additional information available

**Si (7440-21-3)**

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

##### C-4 (Mixture)

U.S. - California - Proposition 65 - Other information

This product contains crystalline silica, a chemical known to the State of California to cause cancer.

##### 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		

##### crystalite (14464-46-1)

U.S. - New Jersey - Right to Know Hazardous Substance List

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

U.S. - New Jersey - Right to Know Hazardous Substance List

##### graphite (7782-42-5)

U.S. - New Jersey - Right to Know Hazardous Substance List

##### Si (7440-21-3)

U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

Revision date : 11/18/2015

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

SDS US (GHS HazCom 2012)

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.