



C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)
Issue date: 6/4/2015 Revision date: 9/10/2025 Supersedes: 9/29/2022

SECTION 1 Identification

1.1. Product identifier

Product form : Article
Product name : C-4
CAS-No. : Mixture
Product code : 4917

1.2. Other means of identification

Other means of identification : Clay Graphite Fired Shape

1.3. Recommended use of the chemical and restrictions on use

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

1.4. Supplier's details

RHI Magnesita
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA, 15205
United States
T 412-494-4491
Resco_SDS.TDS@rhimagnesita.com - WWW.RescoProducts.com

1.5. Emergency phone number

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

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification
Carcinogenicity, Category 1A H350 May cause cancer (Dust when sawing or tear out).
Full text of H statements : see section 16

2.2. Label elements

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. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

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	30 – 60	Not classified
cristobalite	CAS-No.: 14464-46-1	10 – 30	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 necessary 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.

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
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.

4.3. Indication of immediate medical attention and special treatment needed, 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

For non-emergency personnel

No additional information available

For emergency responders

Protective equipment	: Use personal protective equipment as required.
----------------------	--

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up	: Collect spillage.
For further information refer to section 8: "Exposure controls/personal protection"	

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 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)

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	0.025 mg/m³ respirable dust
-----------------	-----------------------------

USA - OSHA - Occupational Exposure Limits

OSHA PEL TWA	0.05 mg/m³ respirable dust
--------------	----------------------------

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

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	1 mg/m³ respirable dust
-----------------	-------------------------

graphite (7782-42-5)

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	2 mg/m³ (Respirable fraction)
-----------------	-------------------------------

8.2. Appropriate engineering controls

Appropriate engineering controls	: Dust when sawing or tear out. Provide adequate ventilation to minimize dust concentrations.
----------------------------------	---

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Hand protection:	
Wear protective gloves.	
Eye protection:	
Chemical goggles or safety glasses	
Skin and body protection:	
Safety shoes. Wear suitable protective clothing	
Respiratory protection:	
Dust when sawing or tear out. Wear appropriate mask	
SECTION 9 Physical and chemical properties	
9.1. 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	: > 3000 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Flammability (solid, gas)	: Not flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: ≈ 1.9
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
Explosion limits	: No data available
Particle characteristics	: No data available
9.2. Data relevant with regard to physical hazard classes (supplemental)	
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))

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

aluminium oxide, non-fibrous (1344-28-1)	
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))
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/m³ air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust))
Si (7440-21-3)	
LD50 oral rat	> 5000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 5000 mg/kg body weight (24 h, Rabbit, Read-across, Dermal, 14 day(s))
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 %)
Si (7440-21-3)	
pH	No data available in the literature
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 %)
Si (7440-21-3)	
pH	No data available in the literature
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer (Dust when sawing or tear out).
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
aluminium oxide, non-fibrous (1344-28-1)	
Viscosity, kinematic	Not applicable (solid)
Si (7440-21-3)	
Viscosity, kinematic	Not applicable (solid)
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
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.

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Symptoms/effects after eye contact : Dust from this product may cause eye irritation.

SECTION 12 Ecological information

12.1. Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

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)

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

Si (7440-21-3)

LC50 - Fish [1] > 100 mg/l (Pisces, Read-across)

ErC50 algae 250 mg/l (Equivalent or similar to OECD 201, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across)

12.2. Persistence and degradability

C-4 (Mixture)

Persistence and degradability Not applicable

crystalite (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

Si (7440-21-3)

Persistence and degradability Biodegradability: not applicable.

Chemical oxygen demand (COD) Not applicable (inorganic)

ThOD Not applicable (inorganic)

12.3. Bioaccumulative potential

crystalite (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.

Si (7440-21-3)

Bioaccumulative potential Not bioaccumulative.

12.4. Mobility in soil

crystalite (14464-46-1)

Ecology - soil No data available.

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

Surface tension Not applicable (water solubility < 1 mg/l)

Ecology - soil No data available.

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Si (7440-21-3)					
Surface tension		No data available in the literature			
Ecology - soil		Low potential for adsorption in soil.			
12.5. Other adverse effects					
Ozone		: Not classified			
Fluorinated greenhouse gases		: No			
SECTION 13 Disposal considerations					
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					
Transport by sea					
Not regulated					
Air transport					
Not regulated					
SECTION 15 Regulatory information					
15.1. 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)					
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. 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. 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			

C-4

Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Component	State or local regulations
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
Si(7440-21-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16 Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

Revision date : 9/10/2025

Issue date : 6/4/2015

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 hazard classes and H-statements

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, RHI Magnesita 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.