

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Nuline 18 DFP
CAS-No. : Mixture
Product code : 7475
Other means of identification : Resin Bonded Magnesia-Carbon Brick

1.2. Recommended use and restrictions on use

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

1.3. Supplier

RHI Magnesita
One Robinson Plaza, Suite 300
6600 Steubenville Pike
Pittsburgh, PA, 15205
United States
T 412-494-4491

Resco_SDS.TDS@rhimaginesita.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

Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2B	H320	Causes eye irritation
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation.

Full text of H-statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : H315 - Causes skin irritation.
H320 - Causes eye irritation
H335 - May cause respiratory irritation.
Precautionary statements (GHS US) : P280 - Wear eye protection, protective gloves, Safety shoes.

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
Magnesium Oxide	CAS-No.: 1309-48-4	75 – 95	Not classified
graphite	CAS-No.: 7782-42-5	10 – 20	Not classified
Phenolic Resin	CAS-No.: 108-95-2	1 – 5	Not classified
aluminium - powder	CAS-No.: 7429-90-5	1 – 5	Not classified
Si	CAS-No.: 7440-21-3	1 – 5	Not classified

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

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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. If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Dust when sawing or tear out. Remove the victim into 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 with water. Do not induce vomiting.

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

Potential adverse human health effects and symptoms	: No additional information available.
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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	: No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical

Fire hazard	: Non-flammable. Do not breathe fumes from fires or vapours from decomposition.
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5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Exercise caution when fighting any chemical fire.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.
Other information	: Product will not burn, but does contain small quantities of chemicals which can generate toxic and/or irritating vapors when initially heated. Under fire conditions hazardous combustion products such as carbon monoxide may be generated. The phenolic resin binder may undergo incomplete combustion when temperature is applied to this product. The intent of this note is as follows: (1) to apprise the customer/user of the potential for incomplete combustion, and (2) to advise that the chemical compounds produced by incomplete combustion by poor air handling practices may exceed TLV's for specific air contaminants. The specific chemical compounds which may be produced include but are not limited to: carbon monoxide, formaldehyde, phenol, alcohols, glycols, and other solvents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Safety glasses. Protective gloves. Safety shoes.
Emergency procedures	: Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Collect spillage. On land, sweep or shovel into suitable containers.

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Mechanically recover the product.

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	: Avoid contact with skin and eyes.
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.
Incompatible materials	: Oxidizing agents and strong acids.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Magnesium Oxide (1309-48-4)

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA 10 mg/m³ inhalable dust

USA - OSHA - Occupational Exposure Limits

OSHA PEL TWA 10 mg/m³ respirable dust

graphite (7782-42-5)

USA - ACGIH - Occupational Exposure Limits

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

aluminium - powder (7429-90-5)

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA 1 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/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

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. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid in various shapes.
Colour	: Black
Odour	: Resin Odor
Odour threshold	: No data available
pH	: No data available
Melting point	: > 2800 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable.
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: ≈ 2.9
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
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

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

Strong acids.

10.6. Hazardous decomposition products

The phenolic resin binder may undergo incomplete combustion when temperature is applied to this product. The intent of this note is as follows: (1) to apprise the customer/user of the potential for incomplete combustion, and (2) to advise that the chemical compounds produced by incomplete combustion by poor air handling practices may exceed TLV's for specific air contaminants. The specific chemical compounds which may be produced include but are not limited to: carbon monoxide, formaldehyde, phenol, alcohols, glycols, and other solvents.

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

Magnesium Oxide (1309-48-4)

LD50 oral rat	> 5000 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Rabbit, Literature study, Dermal)

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))

aluminium - powder (7429-90-5)

LD50 oral rat	> 15900 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Read-across, Oral, 14 day(s))
LC50 Inhalation - Rat	> 0.89 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male, Experimental value, Inhalation (aerosol), 14 day(s))

Si (7440-21-3)

LD50 oral rat	> 5000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 5000 mg/kg bodyweight (24 h, Rabbit, Read-across, Dermal, 14 day(s))

Skin corrosion/irritation : Causes skin irritation.

Magnesium Oxide (1309-48-4)

pH	11 (10 %)
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graphite (7782-42-5)

pH	7 (1.3 %)
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aluminium - powder (7429-90-5)

pH	No data available in the literature
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Si (7440-21-3)

pH	No data available in the literature
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Serious eye damage/irritation : Causes eye irritation.

Magnesium Oxide (1309-48-4)

pH	11 (10 %)
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graphite (7782-42-5)

pH	7 (1.3 %)
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aluminium - powder (7429-90-5)

pH	No data available in the literature
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Si (7440-21-3)

pH	No data available in the literature
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Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Phenolic Resin (108-95-2)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Magnesium Oxide (1309-48-4)

Viscosity, kinematic	Not applicable (solid)
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aluminium - powder (7429-90-5)

Viscosity, kinematic	Not applicable (solid)
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Si (7440-21-3)

Viscosity, kinematic	Not applicable (solid)
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Potential adverse human health effects and symptoms : No additional information available.

SECTION 12: Ecological information

12.1. Toxicity

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)
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EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Behaviour)
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EC50 72h - Algae [1]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
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EC50 72h - Algae [2]	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Cell numbers)
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Si (7440-21-3)

LC50 - Fish [1]	> 100 mg/l (Pisces, Read-across)
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ErC50 algae	250 mg/l (Equivalent or similar to OECD 201, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across)
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12.2. Persistence and degradability

Nuline 18 DFP (Mixture)

Persistence and degradability	Rapidly degradable
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Magnesium Oxide (1309-48-4)	
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
Phenolic Resin (108-95-2)	
Persistence and degradability	Rapidly degradable
aluminium - powder (7429-90-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
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	
Magnesium Oxide (1309-48-4)	
Bioaccumulative potential	No bioaccumulation data available.
graphite (7782-42-5)	
Bioaccumulative potential	Not bioaccumulative.
aluminium - powder (7429-90-5)	
Bioaccumulative potential	Not bioaccumulative.
Si (7440-21-3)	
Bioaccumulative potential	Not bioaccumulative.
12.4. Mobility in soil	
Magnesium Oxide (1309-48-4)	
Surface tension	No data available in the literature
Ecology - soil	No data available.
aluminium - powder (7429-90-5)	
Surface tension	900 mN/m (700 °C)
Ecology - soil	Adsorbs into the soil.
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	
No additional information available	

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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

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Nuline 18 DFP (Mixture)

Note	This information must be included in all SDS's that are copied and distributed for this material.
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All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Phenolic Resin (108-95-2)

Subject to reporting requirements of United States SARA Section 313

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	10000 lb 500lb if the substance is solid in powder form with particle size less than 100 microns, or is in solution or molten form

aluminium - powder (7429-90-5)

Subject to reporting requirements of United States SARA Section 313

Note	This information must be included in all SDS's that are copied and distributed for this material.
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15.2. International regulations

CANADA

Magnesium Oxide (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

graphite (7782-42-5)

Listed on the Canadian DSL (Domestic Substances List)

Phenolic Resin (108-95-2)

Listed on the Canadian DSL (Domestic Substances List)

aluminium - powder (7429-90-5)

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. US State regulations

Component	State or local regulations
Magnesium Oxide(1309-48-4)	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

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Component	State or local regulations
Phenolic Resin(108-95-2)	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 - powder(7429-90-5)	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 Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 6/18/2025

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

Full text of hazard classes and H-statements	
H315	Causes skin irritation.
H320	Causes eye irritation
H335	May cause respiratory irritation.

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.