SAFETY DATA SHEET

1. Identification

Product identifier Apex
Recommended use For Industrial Use Only
Recommended restrictions None Known.

Manufacturer/Supplier information

Company name: FRC Global
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Suite 1200 #3008
Wilmington, DE 19801
Product Support/Technical Services
Phone: (514) 931-5711
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2. Hazard(s) identification

Classified hazards

This item is defined as an article per OSHA (29 CFR 1910.1200) and is therefore exempt from labeling. A Safety Data Sheet is available.
This item is not hazardous per OSHA 29 CFR 1910.1200(c). However, individual customer processes (such as grinding, sawing, or blasting) may result in the formation of dust that may present health hazards. May cause respiratory irritation, lung injury, or cancer by inhalation. Limit skin contact. Wash hands after handling. Dispose of waste and residues in accordance with local authority requirements. Wear protective gloves, protective clothing, and eye protection. Dust may cause cancer.

Label elements

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Hazard(s) not otherwise classified (HNOC)

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3. Composition/information on ingredients

Chemical Name	Common Name/Synonyms	CAS Number	%
Magnesium Oxide		1309-48-4	*
Graphite		7782-42-5	*
Aluminum		7429-90-5	*
Aluminum Oxide (Non-Fibrous)		1344-28-1	*
Phenol		108-95-2	*
Ethane-1,2-diol		107-21-1	*
Formaldehyde		50-00-0	*
Other components below reportable levels			

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation
Remove the victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use the mouth-to-mouth method if the victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician.

Skin contact
Take off immediately all contaminated clothing. Wash with plenty of soap and water. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Do not rub your eyes. Immediately flush your eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present, and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep the victim under observation. Symptoms may be delayed.

General information

Take off immediately all contaminated clothing. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

Not available.

Specific hazards arising from the chemical

Not available.

Special protective equipment and precautions for firefighters

Not available.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people away from, and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Cover with a plastic sheet to prevent spreading. Absorb in vermiculite, dry sand, or earth and place into containers.
Large Spills: Wet down with water and dike for later disposal. Shovel the material into a waste container. Prevent product from entering drains. Following product recovery, flush the area with water.
Small Spills: Sweep up or vacuum up spillage and collect it in a suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean the surface thoroughly to remove residual contamination.

	Never return spills to original containers for reuse. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses, or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink, or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in the original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	*Type*	*Value*	*Form*
Aluminum (CAS 7429-90-5)	PEL	5 mg/m^3 15 mg/m^3	Respirable fraction. Total dust.
Graphite (CAS 7782-42-5)	PEL	5 mg/m^3 15 mg/m^3	Respirable fraction. Total dust.
Magnesium Oxide (CAS 1309-48-4)	PEL	15 mg/m^3	Total particulate.

US OSHA Table Z-3 (29 CFR 1910.1000)

Components	*Type*	*Value*	*Form*
Graphite (CAS 7782-42-5)	TWA	15 mppcf	

US ACGIH Threshold Limit Values

Components	*Type*	*Value*	*Form*
Aluminum (CAS 7429-90-5)	TWA	1 mg/m^3	Respirable fraction.
Graphite (CAS 7782-42-5)	TWA	2 mg/m^3	Respirable fraction.

Magnesium Oxide (CAS 1309-48-4)	TWA	10 mg/m^3	Inhalable fraction.

US NIOSH: Pocket Guide to Chemical Hazards

Components	*Type*	*Value*	*Form*
Aluminum (CAS 7429-90-5)	TWA	5 mg/m^3	Welding fume or pyrophoric powder.
		5 mg/m^3	Respirable.
		10 mg/m^3	Total.
Graphite (CAS 7782-42-5)	TWA	2.5 mg/m^3	Respirable.

Biological limit values No biological exposure limits were noted for the ingredient(s).

Exposure guidelines The resin binder in this product was specifically engineered to have low toxicity, with minimal free-phenol (less than 100ppm in this refractory product) and no free-formaldehyde. Under certain conditions, thermal decomposition products may still include carbon monoxide, carbon dioxide, formaldehyde, phenol, and aromatic and/or aliphatic compounds.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and an emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical-resistant gloves.

Other Wear appropriate chemical-resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Use a NIOSH/MSHA-approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General Hygiene Considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage, and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction is known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Refractories containing crystalline silica may, after service, contain

more or less crystalline silica. Care must be taken to avoid and/or control dust from demolition. If in doubt of the proper protection, seek advice from a safety professional. The organic binder in this product falls into a class known as phenolic resin. Refractory products using this type of binder are supplied in two forms, (1) shaped products such as brick and (2) monolithics such as refractory plastics and rams. The hazards associated with phenolic resin are different in the two forms. For pre-cured shapes (brick), the binder has been reacted or polymerized by heat to its solid form before shipment. On decomposition by heating, where there is sufficient air and heating rate, the gaseous products are mostly carbon dioxide and water. Under low or limited oxygen supply, decomposition products during heat-up and early service may include phenol, as well as aromatic and/or aliphatic derivatives. After a campaign in service, this refractory product should be completely coked and, in that condition, the material for disposal would be carbon and an inorganic oxide. During field installation of non-cured unshaped products (monolithics), there is a possibility of exposure to trace amounts of phenol by skin contact and inhalation. After the product has been heated to high temperatures in service, it will have similar decomposition characteristics to pre-cured shapes.

Incompatible materials Phosphorus. Chlorine.
Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

- **Inhalation** Toxic if inhaled.
- **Skin contact** Toxic in contact with skin. Causes skin irritation.
- **Eye contact** Causes serious eye irritation.
- **Ingestion** Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical, and toxicological characteristics:
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Skin irritation. May cause redness and pain.

Information on toxicological effects

- **Acute toxicity** Toxic if inhaled. Toxic in contact with skin.
- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/eye irritation**
  Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization

Not a respiratory sensitizer.

Skin sensitization: This product is not expected to cause skin sensitization.

Germ cell mutagenicity: No data is available to indicate product, or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not Listed.

Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard: Not an aspiration hazard.

Chronic effects: Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity: Toxic to aquatic life with long-lasting effects.

Persistence and degradability: No data is available on the degradability of this product.

Bio-accumulative potential: No data available.

Mobility in soil: No data available.

Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions: This product, in its present state, when discarded or disposed of, is not hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code: Not applicable.

Waste from residues / unused products

Not available.

Contaminated packaging: Not available.

14. Transport information

DOT: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous Chemical

Not listed.

SARA 313 (TRI reporting)

Chemical Name	*CAS number*	*% by wt.*
Aluminum	7429-90-5	*

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not Regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US Massachusetts RTK - Substance List

Aluminum (CAS 7429-90-5)
Graphite (CAS 7782-42-5)
Magnesium Oxide (CAS 1309-48-4)

US New Jersey Worker and Community Right-to-Know Act

Aluminum (CAS 7429-90-5)
Graphite (CAS 7782-42-5)
Magnesium Oxide (CAS 1309-48-4)

US Pennsylvania Worker and Community Right-to-Know Law

Aluminum (CAS 7429-90-5)
Graphite (CAS 7782-42-5)
Magnesium Oxide (CAS 1309-48-4)

US Rhode Island RTK Aluminum (CAS 7429-90-5)

US California Proposition 65

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

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Formaldehyde (CAS 50-00-0) Listed: January 1, 1988

International Inventories

Country(s) or region	*Inventory name*	*On inventory (yes/no) **
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

This information is supplied to be informative and to alert the user of the material. The ultimate compliance with federal, state, and/or local regulations concerning the use of this material, or compliance with respect to product liability, rests solely upon the purchaser thereof.

Prepared by: FRC Global
Date: October 2020

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any nature directly or indirectly whatsoever resulting from the use of, reliance upon, or misuse of the information contained herein.

End of Safety Data Sheet