SAFETY DATA SHEET

1. Identification

Product identifier	Fedseal AC
Recommended use	For Industrial Use Only
Recommended restrictions	Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Supplier information

Company name: FRC Global
Address: 1000 N. West St.
Suite 1200 #3008
Wilmington, DE 19801
Product Support/Technical Services
Phone: (514) 931-5711
Website www.FRCglobal.com

Emergency telephone number: Corporate Office: (514) 931-5711
Technical Services: (514) 931-5711
Contact E-Mail: LadleDr@FRCglobal.com

2. Hazard(s) identification

Physical hazards Not classified.

Heath hazards

Carcinogenicity	Category 1A
Acute Toxicity (Oral)	Category 4
Eye Irritation	Category 2
Target organ toxicity (lungs through cutting or tearing from inhalation)	Category 2

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements This material is a skin and eye irritant. Respirable crystalline silica may be present at the end of the product lifecycle and is suspected of causing cancer.

Signal word Danger.

Hazard Statement
0462B6PD: May cause lung cancer (inhalation).
H302: Harmful if swallowed.
H315 + H320: Causes skin and eye irritation.

Precautionary statement

Prevention	P270: Do not eat, drink, or smoke when using this product. P280: Wear protective gloves/protective clothing/eye protection/face protection.
Response	P301+P330+P331: If swallowed: Rinse mouth. Do not include vomiting. P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Continue rinsing. P264: Wash thoroughly after handling. If concerned: Get medical advice/attention.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise Classified (HNOC)

None Known.

Supplemental information

Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

3. Composition/information on ingredients

Chemical Name	Common Name/Synonyms	CAS Number	%
Aluminum Oxide (Non-Fibrous)		1344-28-1	*
Kaolin		1332-58-7	*
Aluminum (stabilized)		7429-90-5	*
Silica, Crystalline	Quartz	14808-60-7	*
Proprietary Surfactant		Proprietary	*
Refractories, Fibers, Aluminosilicate		142844-00-6	*

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

4. First-aid measures

Inhalation	Move to fresh air. Seek medical attention if breathing becomes irregular or become unconscious.
Skin contact	Wash with soap and water. Get medical attention if irritation develops or persists.
Eye contact	Immediately flush your eyes with plenty of water. Get medical attention if irritation persists.

Ingestion	Get immediate medical attention. Do not induce vomiting unless instructed to do so by the poison center or physician.
Most important symptoms/effects, acute and delayed	Dust may irritate the respiratory tract, skin, and eyes. Coughing.
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.
Signs and symptoms of overexposure	
Eyes:	Redness and/or tearing.
Skin:	Redness and/or itching.
General information	If concerned: Get medical advice. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Carbon Dioxide, Dry Chemical, Foam, and Water. Fog. 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	Wear full protective clothing and a NIOSH-approved self-contained breathing apparatus with a full facepiece operated in the pressure demanded or other positive pressure mode. Do not use a water stream as flame may scatter.
Special Remarks on Fire Hazards	Hazardous combustion products: Carbon Monoxide, Carbon Dioxide, Hydrocarbons

6. Accidental release measures

General procedures	Sweep up debris and dispose of in accordance with local regulations. Dust can be dampened with water for containment. Personal protective equipment is recommended.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems,

	if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	
	Store in a cool, dry place. Material may become excessively soft when heated or stored in an unusually warm area.
Storage temperature	(40°F) Minimum to (120°) Maximum

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Hazardous Components (29 CFR 1910.1200)

Components	*Type*	*Value*	*Form*
Aluminum Oxide (CAS 1344-28-1)	OSHA PEL TWA ACGIH TLV TWA	5 mg/m3 1 mg/m3	Respirable dust. Respirable dust.
Kaolin (CAS 1332-58-7)	OSHA PEL TWA ACGIH TLV TWA	15T 5R 2E, R	
Aluminum (stabilized) (CAS 7429-90-5)	OSHA PEL TWA ACGIH TLV TWA	15T 5R 1	Respirable dust. Respirable dust.
Silica, Crystalline (CAS 14808-60-7)	OSHA PEL TWA ACGIH TLV TWA	5 mg/m3 (%SiO2+2) 0.025 mg/m3	

US OSHA Table Z-3 (29 CFR 1910.1000)

Components	*Type*	*Value*	*Form*
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.3 mg/m3 0.1 mg/m3 2.4 mppcf	Total dust. Respirable. Respirable.

US ACGIH Threshold Limit Values

Components	*Type*	*Value*	*Form*
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction

US NIOSH: Pocket Guide to Chemical Hazards

Components	*Type*	*Value*	*Form*
Quartz (SiO2) 14808-60-7	TWA	0.05 mg/m3	Respirable dust.

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

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	Safety glasses
Skin protection	
Hand protection	Protective gloves such as latex, nitrile, or terry cloth.
Respiratory protection	Use a NIOSH/MSHA-approved respirator if used in a closed environment where ventilation is not adequate.
Protective clothing	Long-sleeve shirt or other covering is recommended.

General Hygiene Considerations

Always adhere to general workplace hygienic practices including washing before eating or smoking.

9. Physical and chemical properties

Appearance	
Physical state	Solid. Dense Fibrous Mastic.
Form	Solid.
Color	Black.
Odor	Pine.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point	None.
Flash point	Not available.
Evaporation rate	None.
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	> 1
Vapor density	> 1 Air = 1.0
Relative density	Not available.
Solubility(ies)	
Solubility (water)	None expected
Partition coefficient (n-octanol/water)	
	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Specific gravity	2.11 at (72°F)

10. Stability and reactivity

Hazardous polymerization	None.
Chemical stability	Stable under ordinary conditions of use and storage.
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	Acids, strong oxidizing agents, 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

Carbon monoxide, carbon dioxide, smoke

11. Toxicological information

Information on likely routes of exposure

Inhalation Dust may irritate the respiratory system. Prolonged inhalation may be harmful.

Skin contact Dust or powder may irritate the skin.

Eye contact Dust may irritate the eyes.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical, and toxicological characteristics:

Dust may irritate the respiratory tract, skin, and eyes. Coughing.

Information on toxicological effects

Acute toxicity Oral LD_{50}: 1310 mg/kg (Rat) (Proprietary Surfactant)
Notes: Acute oral toxicity is from the surfactant only (approx. 1.8% total concentration of this product)

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation

Direct contact with the eyes may cause temporary 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 In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicate dust, and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of

lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Quartz (SiO2) (CAS 14808-60-7) 1 Carcinogenic to humans.

US National Toxicology Program (NTP) Report on Carcinogens

Quartz (SiO2) (CAS 14808-60-7) Known To Be Human Carcinogen.

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.

Developmental effects

Quartz (SiO2) 0

Developmental effects - EU category

Quartz (SiO2) 0

Embryotoxicity

Quartz (SiO2) 0

Reproductively

Quartz (SiO2) 0

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. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

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. Dispose of in accordance with local sanitary regulations.

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.
One or more components are not listed on TSCA.
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 - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous Chemical

No

SARA 313 (TRI reporting)

Chemical Name	*CAS number*	*% by wt.*
Aluminum Oxide (Non-Fibrous)	1344-28-1	*

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 Oxide (Non-Fibrous) (CAS 1344-28-1)
Quartz (SiO2) (CAS 14808-60-7)
ZIRCONIUM DIOXIDE (CAS 1314-23-4)

US New Jersey Worker and Community Right-to-Know Act
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)
Quartz (SiO2) (CAS 14808-60-7)

US Pennsylvania Worker and Community Right-to-Know Law
Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)
Quartz (SiO2) (CAS 14808-60-7)

US Rhode Island RTK Aluminum Oxide (Non-Fibrous) (CAS 1344-28-1)

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
Quartz (SiO2) (CAS 14808-60-7) Listed: October 1, 1988

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: September, 2021

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End of Safety Data Sheet