

Material Safety Data Sheet

Material Name: FURALAC® SPECIAL POWDER

ID:

*** Section 1 - Chemical Product and Company Identification ***

Product Trade Name FURALAC SPECIAL POWDER

Manufacturer Information

Ergon Armor (601) 933-3540
Corrosion Engineering
P.O. Box 1639 (800) 424-9300
Jackson, MS 39215-1639

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
14808-60-7	Quartz	80-90
5329-14-6	Sulfamic Acid	5-20

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:

*** Section 3 - Hazards Identification ***

Emergency Overview:

White powder-odorless

WARNING!

CANCER HAZARD. CONTAINS CRYSTALLINE SILICA, WHICH CAN CAUSE CANCER.

Repeated and prolonged inhalation of respirable particles can cause lung cancer and delayed lung damage (silicosis).

MAY CAUSE EYE AND SKIN IRRITATION.

MAY CAUSE RESPIRATORY TRACT IRRITATION.

Potential Health Effects:

Quartz

Skin contact and inhalation are expected to be the primary routes of occupational exposure to this material. Repeated and prolonged inhalation of this material may cause a form of disabling lung disease (commonly known as silicosis). Clinical signs and symptoms of silicosis include cough, shortness of breath, wheezing and impairment of lung function. Impairment of lung function may be progressive. In the usual case of silicosis, there is a slow deterioration of capacity for physical effort, decreased chest expansion, and an increased susceptibility to tuberculosis and other respiratory infections. This material inhaled in the form of quartz is classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC) and respirable forms of this material are listed as substances that "may reasonably be anticipated to be carcinogens" by the National Toxicology Program.

Short term, extremely heavy exposures to dust of this material (particularly small-sized particles) can result in acute silicosis. This disease is rapidly progressive with diffuse pulmonary involvement, which may develop within months of initial exposure. Individuals with acute silicosis may suffer an abrupt onset of violent coughing, labored breathing, and weight loss; death has been known to occur within one to two years.

Sulfamic acid

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Concentrated material may be corrosive to the skin and eyes and may result in loss of vision. Dilute solutions (4%) are only slightly irritating to the skin. Inhalation of concentrated vapor or dusts may cause severe irritation to the eyes and respiratory tract. Repeated or prolonged inhalation may result in pulmonary edema (accumulation of fluid in the lungs), shortness of

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breath, coughing and, in severe cases, death. This material is considered, on the basis of single exposure (acute) animal tests, to be slightly toxic if ingested (swallowed). While swallowing of this material is unlikely in the industrial setting, if swallowed this material may cause burns of the mouth, throat and digestive tract.

*** Section 4 - First Aid Measures ***

Eye Contact:

Immediately flush with plenty of water. Get medical attention if irritation persists.

If On Skin

Immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Ingestion:

Induce vomiting as directed by medical personnel. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

*** Section 5 - Fire Fighting Measures ***

Flash Point: N/A

Method Used: N/A

Flammability
Classification: N/A

Upper Flammable
Limit (UFL): N/A

Lower Flammable
Limit (LFL): N/A

Fire & Explosion Hazards:

Auto-Ignition Temperature - N/A
Flash Point (Flash Point Method) - N/A
Flammable Limits- Upper - N/A
Lower - N/A

Extinguishing Media

Use extinguishing media appropriate to surrounding fire conditions.

Fire Fighting Instructions

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

Avoid breathing fumes from fire-exposed material.

*** Section 6 - Accidental Release Measures ***

Spill or Leak

Avoid creating dust in handling, transfer or clean up. Contain spill. Sweep or scoop up and remove to suitable container. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

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*** Section 7 - Handling and Storage ***

Handling Procedures:

Do not breathe dust. Keep container closed. Use only with adequate ventilation. Do not get in eyes, on skin or clothing. Wash thoroughly after handling.

Storage Procedures:

Store in a cool, dry place. Avoid excessive heat. Store out of direct sunlight in a cool, well-ventilated place.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

Quartz (14808-60-7)

ACGIH: 0.025 mg/m³, TLV-TWA (respirable particle), A2 – Suspected Human Carcinogen

OSHA: 10 mg/m³/(% SiO₂ +2), PEL-TWA (respirable dust)

NIOSH: 0.05 mg/m³ (REL – respirable dust)

Engineering Controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

PERSONAL PROTECTIVE EQUIPMENT

As prescribed in the OSHA Standard for Personal Protective Equipment (29 CFR 1910.132), employers must perform a Hazard Assessment of all workplaces to determine the need for, and selection of, proper protective equipment for each task performed.

Eyes/Face Protective Equipment:

Where there is potential for eye contact, wear chemical goggles and have eye-flushing equipment available.

Skin Protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

Respiratory Protection:

When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full-face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

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*** Section 9 - Physical & Chemical Properties ***

Physical State:	Solid	Appearance:	Light tan to white powder
Odor:	Slight acidic	Vapor Pressure:	Nil
Vapor Density:	N/A	Boiling Point:	N/E
Melting Point:	N/A	Specific Gravity:	N/A
pH:	N/A	Viscosity:	N/A
VOC:	NONE	Solubility Water:	Insoluble

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability:

This material is chemically stable under normal and anticipated storage and handling conditions.

Incompatibility:

Hydrofluoric acid will dissolve quartz to form the corrosive gas silicon tetrafluoride

Decomposition Products:

None known.

Hazardous Polymerization:

Hazardous polymerization is not known to occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity:

A: General Product Information

No information available for the product.

B: Component Analysis - LD50/LC50

Quartz (14808-60-7)

(Crystalline silica, quartz)

Oral LD50 Rat: N/A

Oral LD50 Mouse: N/A

Component Carcinogenicity

Crystalline silica inhaled in the form of quartz is classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC), and respirable forms of crystalline silica are listed as substances that "may reasonably be anticipated to be carcinogens" by the National Toxicology Program. The IARC listing is based on the determination that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational exposures. Epidemiology studies cited by IARC give indications of increased risk for lung cancer from inhaled crystalline silica (quartz) resulting from occupational exposure.

Chronic Toxicity

Data on this material and/or its components are summarized below:

Quartz

Chronic inhalation of crystalline silica may cause a progressive pneumoconiosis (silicosis), a form of disabling lung disease (pulmonary fibrosis). Data from animal studies on crystalline forms of silica confirm the capacity of free crystalline silica to induce a fibrinogenic response in lungs. Studies on a variety of laboratory animals (rats, guinea pigs, rabbits, and monkeys) using inhalation as well as intratracheal routes of exposure indicate the ability of crystalline silica to produce silicosis similar to that seen in man. In addition, experiments in animals have

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confirmed human experience that the presence of crystalline silica in the lung increased susceptibility to tuberculosis and other lung infections. Crystalline silica inhaled in the form of quartz is classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC), and respirable forms of crystalline silica are listed as substances that "may reasonably be anticipated to be carcinogens" by the National Toxicology Program. The IARC listing is based on the determination that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational exposures. Epidemiology studies cited by IARC give indications of increased risk for lung cancer from inhaled crystalline silica (quartz) resulting from occupational exposure. Studies involving heavy industrial exposure to silica in granite and foundry workers, brick factories and sandblasting produced increased levels of protein and enzymes in urine, which is indicative of kidney damage.

Sulfamic acid

Single exposure (acute) studies indicate that this material is slightly toxic to rats if swallowed (LD50 1,300 to >1,600 mg/kg), severely irritating to rabbit skin, and moderately irritating to rabbit eyes (4% solution). Application of 4% of this material to the skin of human volunteers resulted in mild, progressive skin irritation during a 5-day application. Subchronic dietary administration of 2% of this material resulted in decreased growth rates in rats; no adverse effects on growth rate were seen at 1% and no gross or pathologic changes were observed in tissues examined. This material produced no genetic changes in standard tests using bacterial cells.

Epidemiology:

No information available for the product.

Neurotoxicity:

No information available for the product.

Mutagenicity:

No information available for the product.

Teratogenicity:

No information available for the product.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Quartz (14808-60-7)

Test & Species	Conditions
LC50 (96 hr) rainbow trout	N/A
LC50 (96 hr) fathead minnow	N/A
LC50 (96 hr) bluegill	N/A
EC50 (96 hr) water flea	N/A

Sulfamic acid

LD50 Fathead minnow: 70.3 mg/l, Slightly Toxic

Environmental Fate:

No data is available concerning the environmental fate, biodegradation or bioconcentration for this product.

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*** Section 13 - Disposal Considerations ***

US EPA Waste Numbers & Descriptions:

A: General Product Information

Recover, reclaim or recycle when practical. Dispose of in an approved landfill if allowed locally. Comply with federal, state, and local regulations. Dispose of in a permitted waste management facility if landfill is not practical.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: NOT REGULATED BY DOT.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

B: Component Analysis

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA 311/312: Acute: Y Chronic: Y Fire: N Pressure: N Reactive: N

State Regulations

A: General Product Information

No additional information available.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA M	N NJ	PA
Quartz	14808-60-7	Yes	Yes	Yes	Yes	Yes
Sulfamic acid	5329-14-6	Yes	Yes	Yes	Yes	Yes

California Prop 65 - Carcinogen

This product does contain the following chemical(s), as indicated below, currently on the California list of Known Carcinogens.

Quartz

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Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis – Inventory/Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Quartz	14808-60-7	Yes	Yes	Yes
Sulfamic Acid	5329-14-6	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Quartz	14808-60-7	0.1%
Sulfamic Acid	5329-14-6	1%

* * * Section 16 - Other Information * * *

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Ergon Armor bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.