



# Sulfur Information Sheet

June 04

A Collaborative Effort of NEHC, AFIOH and USACHPPM



## Introduction:

There has been some concern among soldiers in Southwest Asia that there are high levels of sulfur in the air and that breathing it may cause health effects. Sulfur that occurs naturally in the environment (elemental sulfur) is extracted during the petroleum refining process. Because air quality in some regions of the Gulf is so heavily affected by unregulated industries to include petroleum refineries, this information sheet provides basic information about sulfur, so that you can better understand the relative health risk of a potential exposure and make informed decisions to further protect your health.

## Summary points:

- According to the U.S. Environmental Protection Agency (USEPA), sulfur poses very little if any risk to human health. However, exposure to high levels of particles of dust and sand in the air will occur at times in your deployment location, and can lead to eye and nasal irritation and some respiratory health concerns (such as phlegm or a tight chest).
- As in many areas of the world, sulfur could be in the air as part of windblown dust, but itself is unlikely to cause illness.

## What is sulfur or sulfur dust?

The element sulfur is a natural component of the environment found in soil nearly everywhere in the world. In its pure form, it is a yellow powder that does not dissolve easily in water (insoluble). It is commonly used as a fertilizer in order to restore the balance of minerals in the soil to help crops grow. Currently, sulfur is registered by the USEPA for use as an insecticide, fungicide and rodenticide. As such, sulfur is and has been used on several hundred food and feed crop, ornamental, turf and residential sites. Sulfur is applied in dust, granular or liquid form, and is an active ingredient in nearly 300 registered pesticide products.

## How does sulfur enter the body?

Sulfur dust can be inhaled, can be absorbed through contact with the skin, eyes or mucous membranes, and can be unintentionally swallowed (ingested). Additionally,

people may be exposed to small amounts of sulfur through the food supply. However, USEPA does not believe that ingested sulfur is harmful in any amount, and therefore has not established limits for residues of sulfur in or on food.

## What can I do to reduce my exposure to sulfur?

When possible, stay inside buildings/tents during particularly windy times. Because sulfur mainly effects the eyes and upper respiratory system, wearing standard personal protective items, including goggles and cravats (large kerchief-type cloths), can also provide limited relief against windblown sulfur dust. Also, washing clothes regularly and practicing good personal hygiene will further limit exposure.

## Can coming into contact with sulfur make me sick?

According to the USEPA, ingested sulfur poses very little if any risk to human health. Contact with natural sulfur at low levels over many years is generally recognized as safe.

Health studies of mine workers exposed to sulfur dust and sulfur dioxide throughout their lives show that they often had eye and respiratory disturbances, to include bronchitis and chronic sinus effects. However, these effects are related to continued exposure to relatively high levels of sulfur dust. Health effects, if any, in Soldiers deployed to Southwest Asia would most likely be limited to eye irritation and cough due to the lower levels of exposure.

## Summary points:

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- As in many areas of the world, sulfur could be in the air as part of windblown dust, but itself is unlikely to cause illness.

## Where can I get more information?

USEPA fact sheet: <http://www.epa.gov/oppsrrd1/REDs/factsheets/0031fact.pdf>

# Material Safety Data Sheet

Material Name: Super Sulfur Potash

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

### Manufacturer Information

Heart of Nature  
34710 7th Standard Rd.  
Bakersfield, CA 93314-39435

Phone: 1-877-324-3278  
Fax: 661-399-9758

## \*\*\* Section 2 - Hazards Identification \*\*\*

### Emergency Overview

Dusts may cause eye, skin and respiratory tract irritation.

### Potential Health Effects: Eyes

May cause eye irritation.

### Potential Health Effects: Skin

May cause skin irritation.

### Potential Health Effects: Ingestion

Not considered a likely route of exposure under normal product use conditions. May be harmful if swallowed.

### Potential Health Effects: Inhalation

Dust may cause respiratory tract irritation.

### HMIS Ratings: Health: 1 Fire: 1 HMIS Reactivity 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## \*\*\* Section 3 - Composition / Information on Ingredients \*\*\*

CAS #	Component
Not Available	Trace Elements
7704-34-9	Sulfur
7440-70-2	Calcium
91728-14-2	Aluminum
584-08-7	Potassium carbonate
7439-89-6	Iron

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

If material comes in contact with eyes flush with water for 15 minutes. If irritation persists then seek medical attention.

### First Aid: Skin

Flush skin with water. If irritation persists, contact a physician.

### First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice. Do not induce vomiting unless directed to do so by medical personnel.

### First Aid: Inhalation

Move person to non-contaminated air. If the affected person is not breathing, apply artificial respiration. Call a physician if symptoms develop or persist.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

### General Fire Hazards

See Section 9 for Flammability Properties.  
Dusts may form flammable or explosive mixture with air.

### Hazardous Combustion Products

Not Determined

### Extinguishing Media

Use appropriate extinguishing media for surrounding fire.

### Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

# Material Safety Data Sheet

Material Name: Super Sulfur Potash

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Stop the flow of material, if this is without risk.

### Clean-Up Procedures

Avoid the generation of dusts during clean-up. Sweep up or gather material and place in appropriate container for disposal.

### Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

### Special Procedures

None

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Avoid dust generation. Avoid contact with eyes and skin. Wear protective clothing during use.

### Storage Procedures

Store in a cool, dry location.

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

### A: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

### Engineering Controls

Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

### PERSONAL PROTECTIVE EQUIPMENT

#### Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields.

#### Personal Protective Equipment: Skin

Use impervious gloves.

#### Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

#### Personal Protective Equipment: General

None

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

Appearance:	Granular	Odor:	None
Physical State:	Solid	pH:	3.10 (10% solution)
Vapor Pressure:	ND	Vapor Density:	ND
Boiling Point:	ND	Melting Point:	ND
Solubility (H2O):	ND	Specific Gravity:	ND
Evaporation Rate:	ND	VOC:	ND
Octanol/H2O Coeff.:	ND	Flash Point:	NA
Flash Point Method:	NA	Upper Flammability Limit (UFL):	NA
Lower Flammability Limit (LFL):	NA	Burning Rate:	NA
Auto Ignition:	NA		

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

### Chemical Stability

This is a stable material.

### Chemical Stability: Conditions to Avoid

Avoid dust generation. Keep away from ignition sources

# Material Safety Data Sheet

Material Name: Super Sulfur Potash

## Incompatibility

None

## Hazardous Decomposition

Not Determined

## Possibility of Hazardous Reactions

Will not occur.

### \*\*\* Section 11 - Toxicological Information \*\*\*

#### Acute Dose Effects

##### A: General Product Information

No information available for the product.

##### B: Component Analysis - LD50/LC50

###### Sulfur (7704-34-9)

Inhalation LC50 Rat >9.23 mg/L 4 h; Oral LD50 Rat >3000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

###### Potassium carbonate (584-08-7)

Oral LD50 Rat 1870 mg/kg; Dermal LD50 Rat 1.87 mg/kg

###### Iron (7439-89-6)

Oral LD50 Rat 984 mg/kg

#### Carcinogenicity

##### A: General Product Information

No information available for the product.

##### B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

### \*\*\* Section 12 - Ecological Information \*\*\*

#### Ecotoxicity

##### A: General Product Information

No information available for the product.

##### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

###### Sulfur (7704-34-9)

Test & Species	Conditions
96 Hr LC50 Brachydanio rerio	866 mg/L [static]
96 Hr LC50 Lepomis macrochirus	<14 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	>180 mg/L [static]

###### Iron (7439-89-6)

Test & Species	Conditions
96 Hr LC50 Morone saxatilis	13.6 mg/L [static]
96 Hr LC50 Cyprinus carpio	0.56 mg/L [semi-static]

### \*\*\* Section 13 - Disposal Considerations \*\*\*

#### US EPA Waste Number & Descriptions

##### Component Waste Numbers

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

##### Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations. See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

# Material Safety Data Sheet

Material Name: Super Sulfur Potash

## \*\*\* Section 14 - Transportation Information \*\*\*

### US DOT Information

Shipping Name: Not Regulated

## \*\*\* Section 15 - Regulatory Information \*\*\*

### US Federal Regulations

### Component Analysis

None of this products 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).

### State Regulations

### Component Analysis - State

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

Component	CAS	CA	MA	MN	NJ	PA	RI
Sulfur	7704-34-9	Yes	Yes	No	Yes	Yes	Yes
Calcium	7440-70-2	Yes	Yes	No	Yes	Yes	Yes
Iron	7439-89-6	Yes	No	No	No	No	No

### Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Potassium carbonate	584-08-7	1 %

### Additional Regulatory Information

### Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Sulfur	7704-34-9	Yes	DSL	EINECS
Calcium	7440-70-2	Yes	DSL	EINECS
Aluminum	91728-14-2	No	No	No
Potassium carbonate	584-08-7	Yes	DSL	EINECS
Iron	7439-89-6	Yes	DSL	EINECS

## \*\*\* Section 16 - Other Information \*\*\*

### Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

### 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., NJTSR = New Jersey Trade Secret Registry.