



<a href="#">Sulfur Granules</a>	<a href="#">Pricing &gt;</a>
<a href="#">Sulfur Nanoparticle Dispersion</a>	<a href="#">Pricing &gt;</a>
<a href="#">Sulfur Nanoparticles / Nanopowder</a>	<a href="#">Pricing &gt;</a>
<a href="#">Sulfur Pieces</a>	<a href="#">Pricing &gt;</a>
<a href="#">Sulfur Powder</a>	<a href="#">Pricing &gt;</a>

<b>Linear Formula</b>	S
<b>Pubchem CID</b>	5362487
<b>MDL Number</b>	MFCD00085316
<b>EC No.</b>	231-722-6
<b>IUPAC Name</b>	sulfur
<b>SMILES</b>	[S]
<b>Inchl Identifier</b>	InChI=1S/S
<b>Inchl Key</b>	NINIDFKCEFEMDL-UHFFFAOYSA-N
<b>Signal Word</b>	Danger
<b>Hazard Statements</b>	H228-H315
<b>Hazard Codes</b>	F
<b>Precautionary Statements</b>	P210-P240-P241-P280-P321-P362
<b>Flash Point</b>	207 °C (closed cup)
<b>Risk Codes</b>	N/A
<b>Safety Statements</b>	N/A
<b>RTECS Number</b>	WS4250000
<b>Harmonized Tariff Code</b>	2802.00
<b>Transport Information</b>	UN1350 4.1/PG III

WGK Germany	1
GHS Pictograms	<a href="#">GHS02 Flame</a>  <a href="#">GHS07 Exclamation Point</a> 

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## SAFETY DATA SHEET

Date Accessed: 07/02/2022

Date Revised: 05/15/2015

### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #7704-34-9

**Relevant identified uses of the substance:**  
Scientific research and development

Supplier details:  
American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

Emergency telephone number:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

### SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Hazards not otherwise classified

No information known.

Label elements

GHS label elements

The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

## Hazard pictograms



GHS02 GHS07

Signal word: Danger

Hazard statements

H228 Flammable solid.

H315 Causes skin irritation.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P362 Take off contaminated clothing and wash before reuse.

P321 Specific treatment (see on this label).

WHMIS classification

B4 - Flammable solid

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

2

Health (acute effects) = 1

Flammability = 2

Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Substances

CAS# Description: 7704-34-9 Sulfur

Identification number(s):

EC number: 231-722-6

Index number: 016-094-00-1

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## **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:

Sulfur oxides (SO<sub>x</sub>)

Hydrogen sulfide

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions:

Do not allow material to be released to the

environment without proper governmental permits.  
Methods and material for containment and cleaning up:  
Keep away from ignition sources.  
Ensure adequate ventilation.  
Prevention of secondary hazards:  
Keep away from ignition sources.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

### Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities

### Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from halocarbons.

Do not store with interhalogens.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s)

No further relevant information available.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:

No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves

Nitrile rubber, NBR

Penetration time of glove material (in minutes): 480

Glove thickness: 0.11 mm

Eye protection: Safety glasses

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

General Information

Appearance:

Form: Various forms (powder/flake/crystalline/beads, etc.)

Color: Pale yellow

Odor: Weak

Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 115.21 °C (239 °F)  
Boiling point/Boiling range: 444.6 °C (832 °F)  
Sublimation temperature / start: Not determined  
Flash point: > 999 °C (> 1830 °F)  
Flammability (solid, gaseous): Highly flammable.  
Ignition temperature: 248 °C (478 °F)  
Decomposition temperature: Not determined  
Auto igniting: Not determined.  
Danger of explosion: Not determined.  
Explosion limits:  
Lower: 3.3 Vol %  
Upper: 46 Vol %  
Vapor pressure: Not applicable.  
Density at 20 °C (68 °F): 2.07 g/cm<sup>3</sup> (17.274 lbs/gal)  
Relative density: Not determined.  
Vapor density: Not applicable.  
Evaporation rate: Not applicable.  
Solubility in / Miscibility with Water: Insoluble  
Partition coefficient (n-octanol/water): Not determined.  
Viscosity:  
dynamic: Not applicable.  
kinematic: Not applicable.  
Other information: No further relevant information available.

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## **SECTION 10. STABILITY AND REACTIVITY**

### Reactivity

No information known.

### Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with strong oxidizing agents

Conditions to avoid

No further relevant information available.

Incompatible materials:

Oxidizing agents

Halocarbons

Interhalogens

Hazardous decomposition products:

Sulfur oxides (SO<sub>x</sub>)

Hydrogen sulfide

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

Inhalative LC50 1660 mg/m<sup>3</sup> (mam)

Skin irritation or corrosion:

Causes skin irritation.

Eye irritation or corrosion:

May cause irritation

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Carcinogenic categories

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No further relevant information available.

Persistence and degradability

No further relevant information available.

Bioaccumulative potential

No further relevant information available.

Mobility in soil

No further relevant information available.

Additional ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

Avoid transfer into the environment.



Results of PBT and vPvB assessment  
PBT:  
Not applicable.  
vPvB:  
Not applicable.  
Other adverse effects  
No further relevant information available.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation  
Consult state, local or national regulations to ensure  
proper disposal.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official  
regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT, IMDG, IATA  
UN1350  
UN proper shipping name  
DOT  
Sulfur  
IMDG, IATA  
SULFUR  
Transport hazard class(es)  
DOT  
Class  
4.1 Flammable solids, self-reactive substances and  
solid desensitised explosives.  
Label  
4.1  
Class  
4.1 (F3) Flammable solids, self-reactive substances  
and solid desensitised explosives  
Label  
4.1  
IMDG, IATA  
Class  
4.1 Flammable solids, self-reactive substances and  
solid desensitised explosives.  
Label  
4.1  
Packing group  
DOT, IMDG, IATA  
III

Environmental hazards:  
Not applicable.  
Special precautions for user  
Warning: Flammable solids, self-reactive substances  
and solid desensitised explosives  
EMS Number:  
F-A,S-G  
Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code  
Not applicable.  
Transport/Additional information: DOT  
Marine Pollutant (DOT): No  
UN "Model Regulation": UN1350, Sulfur, 4.1, III

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental  
regulations/legislation specific for the substance or  
mixture  
GHS label elements  
The product is classified and labeled in accordance  
with 29 CFR 1910 (OSHA HCS)  
Hazard pictograms  
GHS02  
GHS07  
Signal word  
Danger  
Hazard statements  
H228 Flammable solid.  
H315 Causes skin irritation.  
Precautionary statements  
P210 Keep away from heat/sparks/open flames/hot  
surfaces. - No smoking.  
P280 Wear protective gloves/protective clothing/eye  
protection/face protection.  
P240 Ground/bond container and receiving  
equipment.  
P241 Use explosion-proof  
electrical/ventilating/lighting/equipment.  
P362 Take off contaminated clothing and wash before  
reuse.  
P321 Specific treatment (see on this label).  
National regulations  
All components of this product are listed in the U.S.  
Environmental Protection Agency Toxic Substances  
Control Act Chemical substance Inventory.  
All components of this product are listed on the  
Canadian Domestic Substances List (DSL).  
SARA Section 313 (specific toxic chemical listings)  
Substance is not listed.  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer

Substance is not listed.  
Prop 65 - Developmental toxicity  
Substance is not listed.  
Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
Other regulations, limitations and prohibitive  
regulations  
Substance of Very High Concern (SVHC) according to  
the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67  
and Annex XVII of the Regulation (EC) No 1907/2006  
(REACH) for the manufacturing, placing on the market  
and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring  
Authorisation for use)  
Substance is not listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried  
out.

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

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