1. Identification

Product identifier: Sulfur

Other means of identification:
- SDS number: 22
- Synonyms: Brimstone * Sulphur
- Recommended use: Fuel.
- Recommended restrictions: None known.

Manufacturer / Importer / Supplier / Distributor information:

- Company name: Sinclair Oil Corporation
- Address: P.O. Box 30825, Salt Lake City, UT, US
- Telephone: General Information: (801) 524-2777
  Fax: (801) 524-2740
- E-mail: spatey@sinclairoil.com
- Contact person: Steven Patey
- Emergency phone number: CHEMTREC: (800) 424-9300
  (703) 527-3887 (collect)

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Skin corrosion/irritation Category 2

OSHA defined hazards: Not classified.

Label elements:

- Signal word: Warning
- Hazard statement: Not available.
- Precautionary statement:
  - Prevention: Wear protective gloves. Wash thoroughly after handling.
  - Response: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
  - Storage: Store away from incompatible materials.
  - Disposal: Dispose of in accordance with local regulations.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>7704-34-9</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Skin contact:
- Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse.
- If burned by contact with hot material, cool molten material adhering to skin as quickly as possible with water, and see a physician for removal of adhering material and treatment of burn.
Eye contact
Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.
If molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

Ingestion
Seek medical advice.

Most important symptoms/effects, acute and delayed
Causes skin irritation. Molten material will produce thermal burns.

Indication of immediate medical attention and special treatment needed
Burns should be treated as thermal burns. Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures
Suitable extinguishing media

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Contact with molten material may cause thermal burns.

Special protective equipment and precautions for firefighters
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with full face-piece operated in positive pressure mode. Use approved gas detectors in confined spaces.

Fire-fighting equipment/instructions
Move containers from fire area if you can do it without risk. Use water spray to keep fire-exposed containers cool.

6. Accidental release measures
Personal precautions, protective equipment and emergency procedures
Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Collect spillage. Should not be released into the environment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Heated material: Let it solidify.

Environmental precautions
Stop leak if possible without any risk. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage
Precautions for safe handling
Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment (See Section 8).

Conditions for safe storage, including any incompatibilities
Store away from incompatible materials.

8. Exposure controls/personal protection
Occupational exposure limits

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur (CAS 7704-34-9)</td>
<td>TWA</td>
<td>0.5 mg/m³</td>
<td>(total dust)</td>
</tr>
</tbody>
</table>

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

Appropriate engineering controls
Provide adequate general and local exhaust ventilation. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye/face protection</td>
<td>Safety glasses. Wear a face shield when working with molten material.</td>
</tr>
<tr>
<td>Skin protection</td>
<td></td>
</tr>
<tr>
<td>Hand protection</td>
<td>Wear protective gloves. When material is heated, wear gloves to protect against thermal burns.</td>
</tr>
<tr>
<td>Other</td>
<td>Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Heat resistant/insulated gloves and clothing are recommended when working with molten material.</td>
</tr>
</tbody>
</table>
Respiratory protection
If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use. Seek advice from local supervisor.

Thermal hazards
When material is heated, wear gloves to protect against thermal burns.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance
Yellow solid.

Physical state
Solid.

Form
Molten solid.

Color

Odor
Sweet to mercaptan (natural gas).

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
235 °F (112.78 °C)

Initial boiling point and boiling range
832 °F (444.44 °C)

Flash point
405.0 °F (207.2 °C) Cleveland Open Cup

Evaporation rate
Not applicable.

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 applicable.

Vapor density
Not applicable.

Relative density
Not available.

Solubility(ies)
Insoluble.

Partition coefficient
No data available.

Auto-ignition temperature
450 °F (232.22 °C)

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
Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to avoid
Heat. Ignition sources. Keep away from combustible material.

Incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure
Ingestion
Molten material will produce thermal burns.

Inhalation
May cause respiratory tract irritation.
Skin contact: Causes skin irritation. Molten material will produce thermal burns.
Eye contact: Molten material will produce thermal burns.

Symptoms related to the physical, chemical and toxicological characteristics:
Causes skin irritation. Contact with molten material may cause thermal burns.

Information on toxicological effects:

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

12. Ecological information:

Ecotoxicity: Not expected to be harmful to aquatic organisms.
Persistence and degradability: No data available.
Bioaccumulative potential: No data available.
Mobility in soil: Not available.
Other adverse effects: Not available.

13. Disposal considerations:

Disposal instructions: Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Local disposal regulations: Dispose in accordance with local regulations.
Hazardous waste code: Not assigned.
Waste from residues / unused products: Dispose in accordance with all applicable regulations.
Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

14. Transport information:

**DOT**
- UN number: UN2448
- UN proper shipping name: Sulfur, molten
- Transport hazard class(es): 4.1
- Subsidiary class(es): -
- Packing group: III
- Special precautions for user: Not available.
- Special provisions: 30, IB1, T1, TP3
- Packaging exceptions: None
- Packaging non bulk: 213
- Packaging bulk: 247

**IATA**
- UN number: UN2448
- UN proper shipping name: Sulphur, molten
- Transport hazard class(es): 4.1
- Subsidiary class(es): -
- Packaging group: Not available.
- Environmental hazards: No
- Labels required: Not available.
ERG Code: 3L
Special precautions for user: Not available.

IMDG
UN number: UN2448
UN proper shipping name: SULPHUR, MOLTEN
Transport hazard class(es): 4.1
Subsidiary class(es): -
Packaging group: III
Environmental hazards:
  Marine pollutant: No
Labels required: Not available.
EmS: F-A, S-H
Special precautions for user: Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: This substance/mixture is not intended to be transported in bulk.

15. Regulatory information
US federal regulations: This product is hazardous according to OSHA 29 CFR 1910.1200.
  TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
    Not regulated.
  US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
    Not listed.
  CERCLA Hazardous Substance List (40 CFR 302.4)
    Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
  Hazard categories:
    Immediate Hazard - Yes
    Delayed Hazard - No
    Fire Hazard - Yes
    Pressure Hazard - No
    Reactivity Hazard - No
  SARA 302 Extremely hazardous substance: No
  SARA 311/312 Hazardous chemical: Yes

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.
  Food and Drug Administration (FDA)
    Not regulated.

US state regulations: This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

  US. Massachusetts RTK - Substance List
    Sulfur (CAS 7704-34-9)
  US. New Jersey Worker and Community Right-to-Know Act
    Not regulated.
  US. Pennsylvania RTK - Hazardous Substances
    Sulfur (CAS 7704-34-9)
  US. Rhode Island RTK
    Not regulated.

US. California Proposition 65
  US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
    Not listed.
## International Inventories

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

*A "Yes" indicates this product complies 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

<table>
<thead>
<tr>
<th>Issue date</th>
<th>22-July-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>-</td>
</tr>
<tr>
<td>Version #</td>
<td>01</td>
</tr>
</tbody>
</table>

### NFPA Ratings

![NFPA Rating Diagram](image)

### Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.