



# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>Spent Sulfidic Caustic</b>
<b>Other means of identification</b>	
<b>SDS number</b>	615 - GHS
<b>Synonyms</b>	Spent sulfidic caustic
<b>Recommended use</b>	This product is intended for use as a refinery feedstock, fuel or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.
<b>Recommended restrictions</b>	No other uses are advised.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer/Supplier</b>	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000
<b>General Assistance</b>	210-345-4593
<b>E-Mail</b>	CorpHSE@valero.com
<b>Contact Person</b>	Industrial Hygienist
<b>Emergency Telephone</b>	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 2
<b>OSHA defined hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. Toxic to aquatic life.
<b>Precautionary statement</b>	
<b>Prevention</b>	Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response</b>	Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
<b>Storage</b>	Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	If material is exposed to water, neutralization would occur and hydrogen sulfide (H <sub>2</sub> S) would be released into the atmosphere.

Supplemental information None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
Sodium sulfide	1313-82-2	1 - 15
Sodium hydroxide	1310-73-2	0 - 15
Kerosene	8008-20-6	0 - 1
Hydrogen sulfide	7783-06-4	0.1 - 0.2

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Note: Components of hazardous substances/mixtures are listed for disclosure purposes. Ranges may represent maximum regulatory limits or apply to multiple product grades (see Synonyms - Section 1). Typical and actual concentrations of individual components may be substantially less than the maximum values shown or zero, depending on the product grade or specifications.

### 4. First-aid measures

#### Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

#### Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

#### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

#### Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

#### Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

#### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

#### General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Water spray. Water fog. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

#### Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

#### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

#### General fire hazards

No unusual fire or explosion hazards noted.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**

This product is miscible in water. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage****Precautions for safe handling**

Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection****Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m <sup>3</sup>

**US. OSHA Table Z-2 (29 CFR 1910.1000)**

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

**ACGIH**

Material	Type	Value	Form
Sodium hydroxide	TWA	0.5 mg/m <sup>3</sup>	(total dust)

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Kerosene (CAS 8008-20-6)	TWA	200 mg/m <sup>3</sup>	Non-aerosol.
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m <sup>3</sup>	

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m <sup>3</sup>
		10 ppm
Kerosene (CAS 8008-20-6)	TWA	100 mg/m <sup>3</sup>
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m <sup>3</sup>

**Biological limit values**

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

**Exposure guidelines****US ACGIH Threshold Limit Values: Skin designation**

Kerosene (CAS 8008-20-6)

Danger of cutaneous absorption

<b>Appropriate engineering controls</b>	Good general ventilation 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 emergency shower must be available when handling this product.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles) and a face shield.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Skin protection</b>	
<b>Other</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	Chemical respirator with organic vapor cartridge and full facepiece. 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. Wear air-supplied mask in confined areas.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Dark orange, green or light brown.

**Odor** Sulfurous.

**Odor threshold** Not available.

**pH** > 11

**Melting point/freezing point** 32.9 °F (0.5 °C)

**Initial boiling point and boiling range** > 219.2 °F (> 104 °C)

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not applicable.

### Upper/lower flammability or explosive limits

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** 1.13 - 1.18

**Relative density temperature** 140 °F (60 °C)

### Solubility(ies)

**Solubility (water)** Soluble.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

### Other information

**Explosive properties** Not explosive.

**Oxidizing properties** Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	If material is exposed to water, neutralization would occur and hydrogen sulfide (H <sub>2</sub> S) would be released into the atmosphere.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials. Water, moisture.
<b>Incompatible materials</b>	Strong acids. Reducing agents. Organic material. Water.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Causes severe skin burns. Harmful in contact with skin.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Causes digestive tract burns. Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

### Information on toxicological effects

**Acute toxicity** Harmful in contact with skin. Harmful if swallowed.

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
Hydrogen sulfide (CAS 7783-06-4)		
<b>Acute</b>		
<b>Inhalation</b>		
Gas		
LC50	Rat	444 ppm, 4 Hours
Sodium sulfide (CAS 1313-82-2)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	208 mg/kg
<b>Skin corrosion/irritation</b>	Causes severe skin burns.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Not listed.		
<b>NTP Report on Carcinogens</b>		
Not listed.		
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>		
Not listed.		
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	

<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.
<b>Further information</b>	Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.

## 12. Ecological information

**Ecotoxicity** Toxic to aquatic life. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Crustacea 0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas) 0.0243 mg/l, 96 hours
Sodium hydroxide (CAS 1310-73-2)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Ceriodaphnia dubia 40.4 mg/l, 48 Hours
Sodium sulfide (CAS 1313-82-2)		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	LC50	Crustacea 0.08 mg/l, 48 Hours

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** This product is water soluble and may disperse in soil.

**Other adverse effects** No data available.

## 13. Disposal considerations

**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]  
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

<b>UN number</b>	UN1760
<b>UN proper shipping name</b>	Corrosive liquids, n.o.s. (Sodium hydroxide, Sulfidic caustic)
<b>Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	8
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**Special provisions** B2, IB2, T11, TP2, TP27  
**Packaging exceptions** 154  
**Packaging non bulk** 202  
**Packaging bulk** 242

**IATA**

**UN number** UN1760  
**UN proper shipping name** Corrosive liquid, n.o.s. (Sodium hydroxide, Sulfidic caustic)  
**Transport hazard class(es)**  
    **Class** 8  
    **Subsidiary risk** -  
    **Label(s)** 8  
**Packing group** II  
**Environmental hazards** No  
**ERG Code** 8L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

**UN number** UN1760  
**UN proper shipping name** CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE, SULFIDIC CAUSTIC)  
**Transport hazard class(es)**  
    **Class** 8  
    **Subsidiary risk** -  
    **Label(s)** 8  
**Packing group** II  
**Environmental hazards**  
    **Marine pollutant** No  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

**General information** Shipping descriptions in this section are offered as examples only. Classification for transport must accurately reflect the material hazards as designated under a variety of regulations and is solely the responsibility of the person offering the material for transport into commerce.

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Hydrogen sulfide (CAS 7783-06-4) Listed.  
 Kerosene (CAS 8008-20-6) Listed.  
 Sodium hydroxide (CAS 1310-73-2) Listed.

**SARA 304 Emergency release notification**

Hydrogen sulfide (CAS 7783-06-4) 100 LBS

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Hazard not otherwise classified (HNOC)

**SARA 313 (TRI reporting)**  
Not regulated.

**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)**

Hydrogen sulfide (CAS 7783-06-4)

**Safe Drinking Water Act (SDWA)** Not regulated.

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Hydrogen sulfide (CAS 7783-06-4) High priority

**US state regulations**

**US. Massachusetts RTK - Substance List**

Hydrogen sulfide (CAS 7783-06-4)  
Kerosene (CAS 8008-20-6)  
Sodium hydroxide (CAS 1310-73-2)  
Sodium sulfide (CAS 1313-82-2)

**US. New Jersey Worker and Community Right-to-Know Act**

Hydrogen sulfide (CAS 7783-06-4)  
Kerosene (CAS 8008-20-6)  
Sodium hydroxide (CAS 1310-73-2)  
Sodium sulfide (CAS 1313-82-2)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Hydrogen sulfide (CAS 7783-06-4)  
Kerosene (CAS 8008-20-6)  
Sodium hydroxide (CAS 1310-73-2)

**US. Rhode Island RTK**

Hydrogen sulfide (CAS 7783-06-4)  
Kerosene (CAS 8008-20-6)  
Sodium hydroxide (CAS 1310-73-2)

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Hydrogen sulfide (CAS 7783-06-4)  
Kerosene (CAS 8008-20-6)  
Sodium hydroxide (CAS 1310-73-2)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes



Country(s) or region	Inventory name	On inventory (yes/no)*
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply 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

Issue date	28-May-2014
Revision date	27-June-2022
Version #	02
HMIS® ratings	Health: 3 Flammability: 1 Physical hazard: 0

### NFPA ratings



### Disclaimer

The information in this Safety Data Sheet (SDS) was obtained from sources believed to be reliable and accurate, and is not represented as being absolutely complete. The end user of this product has the responsibility for evaluating the adequacy of the data for the intended application and conditions of use; for determining the safety, toxicity, regulatory requirements, and suitability of the product under these conditions; and for obtaining additional or clarifying data where uncertainty exists. The data serves as general guidance only, and is to be used in combination with professional judgement of persons experienced in a specific application, use or process; and additional data may be required. Valero Marketing & Supply Co., (Valero) provides this data without any warranty, expressed or implied regarding its correctness or accuracy; and does not assume any liability arising out of product handling, storage, use or disposal by others.