Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **Spent Caustic**

Synonyms • Neutralizing agents (petroleum), spent sodium hydroxide

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) • Spent Caustic, Petroleum process stream

1.3 Details of the supplier of the safety data sheet

Manufacturer • Delek Refining, Ltd.

425 McMurrey Drive
Tyler, TX 75702
United States
www.delekus.com

Telephone (General) • 903-579-3400

1.4 Emergency telephone number

Manufacturer • (800) 424-9300 - 24 Hour CHEMTREC - National

Manufacturer • (703) 527-3887 - 24 Hour CHEMTREC - International

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Skin Corrosion 1A - H314

DSD/DPD • Corrosive (C)

R35

2.2 Label Elements

CLP

DANGER

Hazard statements • H314 - Causes severe skin burns and eye damage.

Precautionary statements

Prevention
- P260 - Do not breathe mists, vapours, and/or spray.
P264 - Wash thoroughly after handling.
P280 - Wear protective gloves, clothing , and eye/face protection , .

Response
- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
P321 - Specific treatment, see supplemental first aid information.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage/Disposal
- P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases
- R35 - Causes severe burns.

Safety phrases
- S36 - Wear suitable protective clothing.
S37 - Wear suitable gloves.
S39 - Wear eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other Hazards

CLP
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD
- According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012
- Skin Corrosion 1B
Serious Eye Damage 1

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements
- Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

Prevention
- Do not breathe mists, vapours, and/or spray.
Wash thoroughly after handling.
Wear protective gloves, clothing , and eye/face protection , .

Response
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage/Disposal

- Store locked up.
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Corrosive - E

2.2 Label elements

WHMIS

- Corrosive - E

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Spent Caustic	**CAS:**64742-40-1 **EINECS:**265-141-4	100%	NDA	**EU DSD/DPD:** C; R35 **EU CLP:** Skin Corr. 1A, H314 **OSHA HCS 2012:** Skin Corr. 1B	NDA
Sodium hydroxide *[2% TO 15%]*	**CAS:**1310-73-2 **EC Number:**215-185-5 **EU Index:**011-002-00-6	*2% TO 15%*	NDA	**EU DSD/DPD:** Annex VI, Table 3.2: C, R35 **EU CLP:** Annex VI, Table 3.1: Skin Corr. 1A, H314 **OSHA HCS 2012:** Skin Corr. 1B; Eye Dam. 1	NDA
Hydrocarbon Mixture *[< 5%]*	NDA	*< 5%*	NDA	**EU DSD/DPD:** Not Classified **EU CLP:** Not Classified **OSHA HCS 2012:** Not Classified	NDA

Sulfur *[0% TO 0.3%]*	**CAS:**7704-34-9 **EC Number:**231-722-6 **EU Index:**016-094-00-1	*0% TO 0.3%*	NDA	**EU DSD/DPD:** Annex VI, Table 3.2: Xi, R38 **EU CLP:** Annex VI, Table 3.1: Skin Irrit. 2, H315 **OSHA HCS 2012:** Flam. Sol. 1; STOT SE 3: Resp. Irrit; STOT RE 1 (Kidney, Lungs, Liver)	NDA
Mercaptans, RSH *[0% TO 0.2%]*	NDA	*0% TO 0.2%*	NDA	**EU DSD/DPD:** Not Classified **EU CLP:** Not Classified **OSHA HCS 2012:** Not Classified	NDA
Sodium sulfide *[0% TO 0.1%]*	**CAS:**1313-82-2 **EC Number:**215-211-5 **EU Index:**016-009-00-8	*0% TO 0.1%*	NDA	**EU DSD/DPD:** Annex VI, Table 3.2: T, R24; Xn, R22; C, R34; R31; N, R50 **EU CLP:** Annex VI, Table 3.1: Acute Tox. 3 *, H311; Acute Tox. 3 *, H300; Skin Corr. 1B, H314; Aquatic Acute 1, H400 **OSHA HCS 2012:** Skin Corr. 1B; Eye Dam. 1; Acute Tox. 3 (orl)	NDA
Hydrogen sulfide *[< 0.01%]*	**CAS:**7783-06-4 **EC Number:**231-977-3 **EU Index:**016-001-00-4	*< 0.01%*	Inhalation-Rat LC50 • 444 ppm 4 Hour(s)	**EU CLP:** Community workplace exposure limit **OSHA HCS 2012:** Exposure limits	NDA

See Section 16 for full text of H-statements and R-phrases.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Get medical attention.

Skin
- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Get medical attention.

Eye
- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention.

Ingestion
- If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Give plenty of water to drink. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Containers may explode when heated.

Hazardous Combustion Products
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).
  SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Ventilate enclosed areas. Do not walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment, avoid direct contact.

Emergency Procedures
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling
- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Avoid mixing with acid. This could release Hydrogen sulfide. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage
- Keep away from incompatible materials. Store locked up. Keep container/package tightly closed in a cool, well-ventilated place. Ventilate enclosed areas.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Hydrogen sulfide (7783-06-4)	Ceilings	Not established	10 ppm Ceiling (10 min); 15 mg/m3 Ceiling (10 min)	20 ppm Ceiling
	STELs	5 ppm STEL	Not established	Not established
	TWAs	1 ppm TWA	Not established	Not established
Sodium hydroxide (1310-73-2)	TWAs	Not established	Not established	2 mg/m3 TWA
	Ceilings	2 mg/m3 Ceiling	2 mg/m3 Ceiling	Not established

8.2 Exposure controls

Engineering Measures/Controls

- 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.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear chemical splash safety goggles. Depending on conditions of use a face shield may also be necessary.

Skin/Body

- Wear appropriate gloves. Wear protective clothing

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Grayish brown liquid with a sulfide odor.
Color	Grayish brown.	Odor	Sulfide
Odor Threshold	Data lacking		
General Properties			
Boiling Point	> 100 C(> 212 F)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	13.1
Specific Gravity/Relative Density	1.15 to 1.303	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	17.5 mmHg (torr) @ 20 C(68 F)	Vapor Density	0.62 Air=1
Evaporation Rate	0.36 n-Butyl Acetate = 1		
Flammability			
Flash Point	Data lacking	UEL	Data lacking

LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- React exothermically with all kinds of acids to generate poisonous gaseous hydrogen sulfide. Attack aluminum and zinc. Incompatible with oxidizing agents.

10.6 Hazardous decomposition products

- Possibly H2S and sulfur dioxide (SO2).

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Sodium hydroxide (2% TO 15%)	1310-73-2	**Irritation:** Eye-Rabbit • 1 % • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation; **Mutagen:** Cytogenetic analysis • Unreported Route-Hamster • Lung (Somatic cell) • 10 mmol/L
Sulfur (0% TO 0.3%)	7704-34-9	**Acute Toxicity:** Inhalation-Mammal LC50 • 1660 mg/m³; **Irritation:** Eye-Human • 8 ppm; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 1.76 mg/m³ 4 Hour(s) 30 Day(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), diffuse**; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**
Sodium sulfide (0% TO 0.1%)	1313-82-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 208 mg/kg; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 2 mg/kg 17 Week(s)-Intermittent; *Behavioral*:**Changes in motor activity (specific assay)**; *Blood*:**Pigmented or nucleated red blood cells**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking

Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Germ Cell Mutagenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Skin Corrosion 1A **OSHA HCS 2012** • Skin Corrosion 1B
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-SE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Serious eye damage/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Serious Eye Damage 1

Potential Health Effects

Inhalation

Acute (Immediate)
- May cause corrosive burns - irreversible damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)
- Causes severe skin burns and eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)
- Causes serious eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)
- May cause irreversible damage to mucous membranes.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal distrubances.

Key to abbreviations

LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration

Section 12 - Ecological Information

12.1 Toxicity

- Material Data Lacking.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1760	Corrosive liquids, n.o.s. (Sodium hydroxide)	8	II	NDA
TDG	UN1760	CORROSIVE LIQUID, N.O.S. (Sodium hydroxide)	8	II	NDA
IMO/IMDG	UN1760	CORROSIVE LIQUID, N.O.S. (Sodium hydroxide)	8	II	NDA
IATA/ICAO	UN1760	Corrosive liquid, n.o.s. (Sodium hydroxide)	8	II	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
Hydrogen sulfide	7783-06-4	Yes	No	Yes	No	Yes
Sodium hydroxide	1310-73-2	Yes	No	Yes	No	Yes
Sodium sulfide	1313-82-2	Yes	No	Yes	No	Yes

Spent Caustic	64742-40-1	Yes	No	Yes	No	Yes
Sulfur	7704-34-9	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	A, B1, D1A, D2B
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)
• Sulfur	7704-34-9	B4

Canada - WHMIS - Ingredient Disclosure List

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	1 %
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	1 %
• Sulfur	7704-34-9	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

Other Agency Information

Other

AIHA - Emergency Response Planning Guidelines - ERPG-1 Values

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	0.1 ppm ERPG-1
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	0.5 mg/m3 ERPG-1
• Sulfur	7704-34-9	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	1500 lb TQ
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Spent Caustic	64742-40-1	Not Listed

• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Toxic Substances

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	10000 lb threshold quantity
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	100 lb final RQ; 45.4 kg final RQ
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	100 lb EPCRA RQ
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	500 lb TPQ
• Sodium sulfide	1313-82-2	Not Listed

• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	1.0 % de minimis concentration
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - F Series Wastes - Wastes from Nonspecific Sources

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - K Series Wastes - Wastes from Specified Sources

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed

• Sulfur	7704-34-9	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Spent Caustic	64742-40-1	Not Listed
• Hydrogen sulfide	7783-06-4	Not Listed
• Sodium sulfide	1313-82-2	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Sulfur	7704-34-9	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H300 - Fatal if swallowed
  H311 - Toxic in contact with skin
  H315 - Causes skin irritation
  H400 - Very toxic to aquatic life

  R22 - Harmful if swallowed.
  R24 - Toxic in contact with skin.
  R31 - Contact with acids liberates toxic gas.
  R34 - Causes burns.
  R38 - Irritating to skin.
  R50 - Very toxic to aquatic organisms.

Last Revision Date
- 11/May/2015

Preparation Date
- 11/May/2015

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Key to abbreviations

NDA = No data available