

SAFETY DATA SHEET

1. Identification

Product identifier Sodium Hydrosulfide Solution

Other means of identification

Product number GENLP-TDC-001-CAN

Recommended use Product is a unique alkaline material, playing a vital role in many industrial processes.

Recommended restrictions Use in accordance with supplier's recommendations.

Manufacturer/Importer/Supplier/Distributor information

Importer TDC Energy Canada, LTD. **Address** 1916 Farmerville Hwy

Ruston, LA 71270

Telephone Customer Service (800) 422-6274 TDCcustomerservice@genlp.com **Email**

CHEMTREC: 800-424-9300 (Domestic – North America)

CHEMTREC: +1-703-527-3887 (International)

2. Hazard identification

Physical hazards Corrosive to metals Category 1

Health hazards Acute toxicity, oral Category 3

> Skin corrosion/irritation Category 1B Serious eye damage/eye irritation Category 1

Environmental hazards Hazardous to the aquatic environment, acute Category 1

hazard

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Toxic if swallowed. Causes severe skin burns and eye damage. Very

toxic to aquatic life.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapour. 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.

If swallowed: Immediately call a poison centre/doctor. Rinse mouth. Do NOT induce vomiting. If Response

on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. 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

centre/doctor. Absorb spillage to prevent material damage.

Store locked up. Store in corrosive resistant container with a resistant inner liner. **Storage**

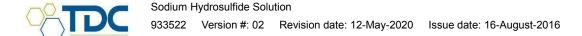
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

None known. Other hazards

Supplemental information None.

3. Composition/information on ingredients

Mixtures



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Chemical name	Common name and synonyms	CAS number	%
Sodium hydrosulfide		16721-80-5	5-49
Sodium carbonate		497-19-8	<5
Sodium sulfide		1313-82-2	<5

Composition comments

Components not listed are either non-hazardous or are below reportable limits. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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 centre 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 centre immediately.

Ingestion

Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not give mouth-to-mouth resuscitation. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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. Toxic if swallowed. Causes digestive tract burns.

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

Unsuitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

No restrictions known.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Hydrogen sulphide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning.

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

Cool containers exposed to heat with water spray and remove container, if no risk is involved.

Specific methods

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

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 or vapour. 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

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Recover as much material as possible.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS. Recover the product and place in a suitable container for reuse. Neutralization/oxidation of residue using dilute bleach or peroxide. Recover as much product as possible.

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.



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7. Handling and storage

Precautions for safe handling Do not breathe mist or vapour. Do not get in eyes, on skin, or on clothing. Do not taste or swallow.

Hydrogen sulfide, a very toxic gas, may be present with this material. Keep face clear of tank and/or tank car openings. 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. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Protect from heat and direct sunlight. Store at temperature below 150°F. Provide appropriate secondary containment.

Value

8. Exposure controls/personal protection

Occupational exposure limits

Components

116	Threshold	l I imit	Values

Componente	1,700	• aluo	
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Canada. Alberta OELs (Occupati	onal Health & Safety Code, Sch	nedule 1, Table 2)	
Components	Туре	Value	
Hydrogen sulphide (CAS 7783-06-4)	Ceiling	21 mg/m3	
		15 ppm	
	TWA	14 mg/m3	
		10 ppm	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Туре	Value	
Hydrogen sulphide (CAS	Ceiling	10 ppm	
7783-06-4)			

Canada Manitoha OFI's (Reg. 217/2006 The Workplace Safety And Health Act)

Type

Components	Type	Value	
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

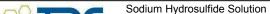
Components	Туре	Value
Hydrogen sulphide (CAS 7783-06-4)	STEL	15 ppm
	TWA	10 ppm

Canada. Q	Quebec OELs.	(Ministry of Labor	- Regulation	respecting occupation	al health and safety)
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Components	Туре	Value	
Hydrogen sulphide (CAS 7783-06-4)	STEL	21 mg/m3	
		15 ppm	
	TWA	14 mg/m3	
		10 nnm	

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Туре	Value	
Hydrogen sulphide (CAS 7783-06-4)	15 minute	15 ppm	
	8 hour	10 ppm	
Biological limit values	No biological exposure limits noted for the ingredient(s).		



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Appropriate engineering

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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear chemical splash goggles and face shield.

Skin protection

Hand protection Neoprene gloves are recommended. Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing.

Respiratory protection Do not breathe dust/fume/gas/mist/vapours/spray. In case of insufficient ventilation, wear suitable

respiratory equipment. 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.

Thermal hazards Wear appropriate thermal protective equipment.

General hygiene considerations

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

Physical state Liquid. Form Liquid.

Colour Yellow to red to dark green or black.

Odour Rotten egg or mercaptan odor typical.

Odour threshold Not available.

pH 11.5 - 12.5

Melting point/freezing point Not available.

Initial boiling point and boiling

122.8 - 131.7 °C (253 - 269 °F)

range

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) 4 % (hydrogen sulfide) **Explosive limit - upper** 46 % (hydrogen sulfide)

(%)

Vapour pressure 17 mm Hg (68 °F (20 °C))

Vapour density 1.17 (Air= 1)

Relative density 1.152 - 1.331 (H20=1)

Solubility(ies)

Solubility (water) Completely soluble in water.

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Partition coefficient Not available.

(n-octanol/water)

Auto-ignition temperatureNot available.Decomposition temperatureNot available.ViscosityNot available.

Other information

Explosive properties Not explosive.

Oxidising properties Not oxidising.

Pounds per gallon 9.6 - 11.1 lb/gal

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10. Stability and reactivity

Reacts violently with strong acids. This product will react with oxidizing agents. May be corrosive to Reactivity

metals. Reacts violently with diazonium salts.

Chemical stability

Material is stable under normal conditions.

Possibility of hazardous reactions

Heating this product will evolve toxic fumes of hydrogen sulfide, sulfoxides and sodium oxide. Fire

conditions will also cause the production of sulfur dioxide. Contact with acids increases the formation of hydrogen sulfide. Hydrogen sulfide may form flammable mixtures with air. Heating to

decomposition emits toxic fumes of sulfoxides and sodium oxide.

Contact with incompatible materials. Do not mix with other chemicals. Conditions to avoid

Incompatible materials Acids, alkalis, oxidizing agents, light metals, aldehydes or organic anhydrides. Alkylene oxides.

Aldehydes. Alcohols. Glycols. Phenols.

Hazardous decomposition

products

Uncontrolled heating of this product will evolve toxic fumes of hydrogen sulfide, sulfoxides and

sodium oxide. Fire conditions will also cause the production of sulfur dioxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system.

Skin contact Causes severe skin burns. Eye contact Causes serious eye damage.

Toxic if swallowed. Causes digestive tract burns. Ingestion

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. Toxic if swallowed. Causes digestive tract burns. May be harmful in contact

with skin.

Information on toxicological effects

Toxic if swallowed. **Acute toxicity**

Test Results Components **Species**

Sodium carbonate (CAS 497-19-8)

Acute

Dermal

> 2000 mg/kg LD50 Rabbit

Oral

LD50 Rat 2080 mg/kg

Sodium hydrosulfide (CAS 16721-80-5)

Acute

Oral

LD50 Rat 100 - 215 mg/kg

Sodium sulfide (CAS 1313-82-2)

Acute

Oral

LD50 Rat 208 mg/kg

Skin corrosion/irritation Causes severe skin burns. Serious eye damage/eye

irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Respiratory sensitisation

Not a respiratory sensitiser.

This product is not expected to cause skin sensitisation. Skin sensitisation

No data available to indicate product or any components present at greater than 0.1% are Germ cell mutagenicity

mutagenic or genotoxic.

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Carcinogenicity

This product is not expected to cause reproductive or developmental effects. Reproductive toxicity

Specific target organ toxicity -Not classified.

single exposure

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Version #: 02 Revision date: 12-May-2020 Issue date: 16-August-2016 Specific target organ toxicity -

repeated exposure

Not classified.

Aspiration hazard

Not an aspiration hazard.

Further information No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity Very toxic to aquatic life.

Components Species Test Results

Sodium carbonate (CAS 497-19-8)

Aquatic

Acute

Crustacea EC50 Ceriodaphnia dubia 200 mg/l, 48 Hours Fish LC50 Lepomis macrochirus 300 mg/l, 96 Hours

Sodium hydrosulfide (CAS 16721-80-5)

Aquatic

Acute

Fish LC50 Lepomis macrochirus > 0.0478 mg/l, 96 Hours

Chronic

Fish LOAEL Lepomis macrochirus > 0.0041 mg/l, 97 days

Sodium sulfide (CAS 1313-82-2)

Aquatic

Acute

Crustacea LC50 Crustacea 0.08 mg/l, 48 Hours

Persistence and degradability

No data is available on the degradability of this product.

Bioaccumulative potential

otential No data available.

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

Other adverse effects The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic

organisms.

13. Disposal considerations

Disposal instructionsCollect and reclaim or dispose in sealed containers at licensed waste disposal site. 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]

D003: Waste Reactive material

The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

Contaminated packaging

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.

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

TDG

UN number UN2922

UN proper shipping name CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROSULFIDE)

Transport hazard class(es)

Class 8
Subsidiary risk 6.1
Packing group II
Environmental hazards Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2922



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UN proper shipping name

Transport hazard class(es)

Corrosive liquid, toxic, n.o.s. (Sodium hydrosulfide)

8 Class 6.1 Subsidiary risk 8, 6.1 Label(s) Packing group Ш **Environmental hazards** Yes **ERG Code** 8P

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN2922

UN proper shipping name CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROSULFIDE)

Transport hazard class(es)

Class 8 Subsidiary risk 6.1 Packing group П **Environmental hazards**

Marine pollutant Yes **EmS** F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78 and

the IBC Code

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS

contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

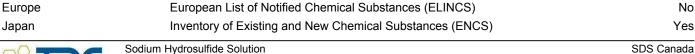
Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	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





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No

Country(s) or region Inventory name On inventory (yes/no)*

Korea Existing Chemicals List (ECL) New Zealand New Zealand Inventory Yes

Philippines Philippine Inventory of Chemicals and Chemical Substances

(PICCS)

Taiwan Taiwan Chemical Substance Inventory (TCSI) Yes United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*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

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03 EC50: Effective Concentration, 50%. List of abbreviations

LOAEC: Lowest observed adverse effect concentration.

LC50: Lethal Concentration, 50%. IC50: Inhibitory concentration, 50%. TWA: Time weighted average. STEL: Short term exposure limit.

Disclaimer TDC, L.L.C. cannot anticipate all conditions under which this information and its product, or the

products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the

sheet was written based on the best knowledge and experience currently available.



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Yes