Oren Hydrocarbons

SAFETY DATA SHEET
CAUSTIC SODA

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product Identifier	**CAUSTIC SODA**
Other Means of Identification	Not applicable.
Recommended Use of Chemical and Restrictions on Use	This product is an alkalinity control additive used in the drilling of oil and gas wells.
Supplier Details	**Oren Hydrocarbon Middle East Fzco.** P.O. Box 18159 Jebel Ali Free Zone (South) Dubai, UAE Tel: +971 4 8860497 Fax: +971 4 8860498
Emergency Phone Number	Tel: +971 4 8860497

2. HAZARDS IDENTIFICATION

Classification of the Substance / Mixture

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SKIN CORROSION / IRRITATION – Category 1A
EYE DAMAGE / IRRITATION – Category 1
HAZARDOUS TO THE AQUATIC ENVIRONMENT – ACUTE HAZARD – Category 3

Label Elements Including Precautionary Statements

Emergency overview: This product is a white solid that reacts with strong oxidizing agents, strong acids and organic materials. Under fire conditions, this material emits toxic fumes (sodium oxides). Fire fighters should wear a self-contained approved breathing apparatus and full protective clothing, including eye protection and boots.

Hazard Pictogram(s):

Signal Word: Danger

Hazard statement(s): Causes severe skin burns and eye damage. Harmful to aquatic life.

Precautionary statements:
Prevention: Do not breathe mists. Wash skin thoroughly after handling. Wear protective gloves, protective clothing, eye protection, and face protection. Avoid release to the environment.
Response: IF SWALLOWED, rinse mouth. Do NOT induce vomiting. IF 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. Immediately call a poison center or doctor. 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 or doctor.
Storage: Store locked up.
Disposal: Dispose of contents and container in accordance with local, state, and federal regulations.

Hazards Not Otherwise Classified: None known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / mixture: Mixture**.**

Component	CAS No.	Weight (%)
Sodium hydroxide	1310-73-2	100

4. FIRST AID MEASURES

First Aid Measures

Inhalation: Move person to fresh air and keep at rest. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated.
Eye contact: In case of eye contact, rinse with plenty of water and seek medical attention immediately.
Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms / Effects, Acute and Delayed

Causes 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 affected person under observation. Symptoms may be delayed.

5. FIREFIGHTING MEASURES

Extinguishing Media

This product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.

Special Hazards Arising from the Substance or Mixture

This product emits toxic fumes (sodium oxides) under fire conditions. See also Section 10 of this safety data sheet for additional information.

Special Protective Equipment and Precautions for Firefighters	Wear self-contained and approved breathing apparatus and full protective clothing, including eye protection and boots.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. **Environmental precautions:** Avoid discharge into drains, water courses or onto the ground.
Methods and Materials for Containment and Cleaning Up	Collect released product without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with applicable regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling	**Protective measures:** Use caution when combining with water; DO NOT add water to caustic, ALWAYS add caustic to water while stirring to minimize heat generation. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Use only with adequate ventilation. Wear appropriate personal protective equipment. Avoid formation of dusts. **Advice on general occupational hygiene:** Wash hands after handling and before eating. Avoid prolonged exposure. All handling to take place in well-ventilated area. Shower after work. Remove and wash contaminated clothing promptly. See also Section 8 of this safety data sheet for additional information on hygiene measures.
Conditions for Safe Storage, Including Any Incompatibilities	Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of this safety data sheet).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Occupational exposure limits:

Product / ingredient name	Value	Control Parameters	Basis
Sodium hydroxide	PEL	2 mg/m^3	U.S., OSHA Table Z-1 Limits for Air Contaminants
	Ceiling	2 mg/m^3	U.S., ACGIH TLV
	Ceiling	2 mg/m^3	U.S. NIOSH, Pocket Guide to Chemical Hazards

Appropriate Engineering Controls

Good general ventilation (typically 10 air changes per hour) 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	**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and / or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Ensure that eyewash stations and safety showers are close to the workstation location. **Eye / face protection:** Wear chemical safety glasses or goggles. **Skin protection:** Wear nitrile or rubber gloves. **Body protection:** Wear appropriate chemical resistant clothing. **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. All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent. **Thermal hazards:** Wear appropriate thermal protective clothing, when necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White, solid.
Odor	Odorless.
Odor Threshold	Not available.
pH	13.5.
Melting Point / Freezing Point	613.4°F (323°C).
Initial Boiling Point and Boiling Range	2530.4°F (1388°C).
Flash Point	Not relevant.
Evaporation Rate	Not available.
Flammability (solid, gas)	Not relevant.
Upper / Lower Flammability or Explosive Limits	Not relevant.
Vapor Pressure	<18 mm Hg at 68°F (20°C). 3 mm Hg at 99°F (68°C).
Vapor Density	1.38 (air = 1.0).
Relative Density	2.13 (water = 1).

Solubility	Easily soluble in cold water.
Partial coefficient (n-octanol / water)	Not available.
Auto-ignition Temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.

10. STABILITY AND REACTIVITY

Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents. May be corrosive to metals.
Chemical Stability	This material is stable under normal conditions of storage and use.
Possibility of Hazardous Reactions	Hazardous polymerization does not occur.
Conditions to Avoid	Heat is evolved when solid material is dissolved in water, therefore cold water and caution must be used for this process.
Incompatible Materials	Strong oxidizing agents, strong acids, organic materials.
Hazardous Decomposition Products	Sodium oxides.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute toxicity:

Product / ingredient Name	Test	Species	Result
Sodium hydroxide	LD_{50} Oral	Rat	140 - 340 mg/kg
	LD_{50} Oral	Mouse	40 mg/kg
	LD_{50} Dermal	Rabbit	1315 mg/kg

Irritation / Corrosion:

Product / ingredient name	Result	Species	Exposure	Observation
Sodium hydroxide	Causes severe skin burns	Rabbit	500 mg	24 hours
	Causes serious eye damage	Rabbit	400 µg	-

Sensitization: No information available for respiratory sensitization. Not a skin sensitizer.

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity: Not available.
Teratogenicity: Not available.
Specific target organ toxicity (single exposure): Not available.
Specific target organ toxicity (repeated exposure): Not available.
Aspiration hazard: Not an aspiration hazard.

Information on Likely Routes of Exposure

Routes of entry anticipated: Oral; dermal, inhalation.
Inhalation: May cause irritation to the respiratory system.
Skin contact: Causes severe skin burns.
Eye contact: Causes severe eye burns. Causes serious eye damage.
Ingestion: Causes digestive tract burns. Harmful if swallowed.

Symptoms Related to the Physical, Chemical and Toxicological Characteristics

Inhalation: Not available.
Skin contact: Burning pain and severe corrosive skin damage.
Eye contact: Permanent eye damage including blindness could result.
Ingestion: Not available.

Delayed and Immediate Effects, and also Chronic Effects From Short and Long-term Exposure

Not available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life.

Product / ingredient name	Result	Species	Exposure
Sodium hydroxide	EC_{50} 40.4 mg/l	*Daphnia sp.*	48 hours
	LC_{50} 125 mg/l	*Gambus affinis*	96 hours

Persistence and Degradability

Not available.

Bioaccumulative Potential

Not available.

Mobility in Soil

Not available.

Other Adverse Effects

Not available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues and Information on Their Safe Handling and Methods of Disposal, Including the Disposal of Any Contaminated Packaging

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers / water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

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.

14. TRANSPORT INFORMATION

Transport Information

	U.S. DOT	IMDG	IATA
UN Number	UN1823	UN1823	UN1823
UN Proper Shipping Name	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID	SODIUM HYDROXIDE, SOLID
Transport Hazard Class(es)	8	8	8
Label(s)	8	8	8
Packing Group	II	II	II
Environmental Hazards	-	No	No
Additional Information	**ERG:** 154	-	**ERG Code:** 154

Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

Not applicable.

Special Precautions For User

Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

U.S. Federal Regulations

CAA, Section 112 Hazardous Air Pollutants: Not regulated.
CAA, Section 112(r) Accidental Release Prevention: Not regulated.
CERCLA, Hazardous Substance List: Sodium hydroxide (CAS No. 1310-73-2) listed.
SARA Title III, Section 302 / 304 Extremely Hazardous Substances: Not applicable.

SARA Title III, Section 311 / 312 Hazard Categories: Sodium hydroxide (CAS No. 1310-73-2) Immediate Hazard.
SARA Title III, Section 313 Toxics Release Inventory (TRI) Program: Not applicable.
SDWA: Not regulated.
TSCA:
TSCA 8(a) CDR Exempt / Partial Exemption: Not determined.
TSCA 8(b) Chemical Inventory: All components are listed or exempted.

U.S. State Regulations

California Proposition 65: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.
Massachusetts Right-to-Know: Sodium hydroxide, CAS No. 1310-73-2.
New Jersey Right-to-Know: Sodium hydroxide, CAS No. 1310-73-2.
Pennsylvania Right-to-Know: Sodium hydroxide, CAS No. 1310-73-2. **Rhode Island Right-to-Know:** Sodium hydroxide, CAS No. 1310-73-2.

International Inventories

Australia (AICS):	All components are listed or exempted.
Canada (DSL):	All components are listed or exempted.
Canada (NDSL)	Not applicable.
China (IECSC):	All components are listed or exempted.
European Union (EINECS):	All components are listed or exempted.
European Union (ELINCS):	One or more components of the product are not listed or exempt from listing.
Japan (ENCS):	All components are listed or exempted.
New Zealand (NZIoC):	All components are listed or exempted.
Philippines (PICCS):	All components are listed or exempted.
South Korea (KECL):	All components are listed or exempted.
Taiwan (NECI):	Not determined.
United States (TSCA):	All components are listed or exempted.

16. OTHER INFORMATION

Prepared By	Product Safety Committee
Revision Number	2.00
Revision Date	11 August 2021
Updates from Previous Revision	Updated all section to GHS format.

Disclaimer

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Acronyms and Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAA	Clean Air Act
CAS	Chemical Abstract Services (division of the American Chemical Society)
CDR	Chemical Data Reporting
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DSL	Domestic Substances List
EC_{50}	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Chemical Substances
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
ENCS	Existing and New Chemical Substances
ERG	Emergency Response Guidebook
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
KECL	Korean Existing Chemical List
LC_{50}	Lethal concentration for 50 percent of the test population
LD_{50}	Lethal dose for 50 percent of the test population
mg	Milligram
mg/kg	Milligram per kilogram
mg/l	Milligram per liter
mg/m^3	Milligram per cubic meter
mm	Millimeter
NDSL	Non-Domestic Substances List
NECI	National Existing Chemical Inventory
NIOSH	National Institute for Occupational Safety and Health, U.S. Centers for Disease Control and Prevention
NZIOC	New Zealand Inventory of Chemicals
OSHA	Occupational Safety and Health Administration, U.S. Department of Labor
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
TLV	Threshold Limiting Value
TSCA	Toxic Substances Control Act
µg	Microgram
UN	United Nations
U.S.	United States

END OF SAFETY DATA SHEET