



Formosa Plastics Corporation, U.S.A.
Material Safety Data Sheet

1. PRODUCT IDENTIFICATION

Product Name: Liquid Caustic Soda 25%, Membrane Grade
Synonyms: Sodium Hydroxide 25%, Caustic Soda, Lye
Manufacturer: Formosa Plastics Corp., Texas
201 Formosa Drive
Point Comfort, TX 77978
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Emergency Contact: CHEMTREC (24 hrs) at +1 (800) 424-9300 (United States, Canada, Puerto Rico, Virgin Islands) or +1 (202) 483-7616 (Other Countries)
Product Code: NAOH25
Product Use: Chemical processing, soaps and detergents, water treatment, pulp and paper.
Physical Description: Clear to opaque liquid
Formula: NaOH

2. HAZARD IDENTIFICATION

Emergency Overview:
DANGER!

- Causes severe skin burns and eye damage.
- May cause respiratory irritation.
- Onset of symptoms may be delayed following exposure.



3. PRODUCT INGREDIENTS

Components	Percent (%)
Sodium Hydroxide	25
CAS Number:	1310-73-2
GHS Classification:	Corrosive 1B, STOT-SE 3; H314, H335

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Get immediate medical attention.
Skin Contact: Remove contaminated clothing and shoes. Wash affected skin area with soap and water. Get immediate medical attention.



Inhalation:	Remove to fresh air. Get immediate medical attention.
Ingestion:	If ingested, dilute swallowed material by drinking water. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Other Instructions:	Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas. Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Flash Point:	Not applicable
Autoignition Temperature:	Not applicable
Flammable Limits, in Air:	
LEL (%):	Not applicable
UEL (%):	Not applicable



Extinguishing Media:	Dry chemical, foam, water or carbon dioxide.
Special Fire Fighting Procedure:	In the event of a fire, wear a NIOSH (US) or CEN (EU) approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all non-essential personnel from the danger area.
Unusual Fire and Explosion Hazards:	Direct contact with water may cause a violent exothermic reaction. This material reacts violently with acids, organic halogen compounds and metals (zinc, tin, aluminum etc.) giving off highly flammable hydrogen gas.
Hazardous Combustion Products	Carbon monoxide, carbon dioxide and other irritating and harmful gases and fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Restrict access to keep out unauthorized or unprotected personnel. Stay upwind of spilled material. Wear appropriate personal protective equipment during all clean-up activities. Avoid inhalation and direct contact.
Environmental Precautions:	Keep spilled material away from sewage/drainage systems and waterways. This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center (800) 424-8802 is required. See Section 15 for more information.
Methods for Clean-Up:	All clean-up personnel must be properly trained. Confine the spill and remove incompatible materials and ignition sources. Ensure adequate ventilation. Secure the source of the leak if conditions are safe. Neutralize spill and collect using an appropriate absorbent material such as clay or vermiculite. Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.



7. HANDLING AND STORAGE

- Handling:** Use with adequate ventilation. Wear proper personal protective equipment. Do not mix with water or acids without dilution and agitation to prevent a potentially violent reaction.
- Storage:** Store in closed, properly labeled containers. Protect containers from heat, physical damage, ignition sources and incompatible materials. Have emergency equipment for fires and spills readily available.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

- Eye Protection:** Wear chemical splash goggles or face shield.
- Skin Protection:** Minimize contact with product. Wear chemical resistant coveralls, boots, gloves, apron and/or suitable long-sleeved clothing. Consult protective equipment manufacturer for chemical resistance information.
- Respiratory Protection:** An industrial hygiene risk assessment is required to determine the appropriate respiratory protection. A NIOSH (US) or CEN (EU) approved full-face, air-purifying cartridge respirator may be appropriate under limited exposure conditions. Wear an approved supplied air respirator if there is a potential for an uncontrolled release, exposure levels are not known, or in other circumstances where air-purifying respirators may not provide adequate protection.
- Engineering Controls:** Ensure adequate ventilation. Emergency eyewash and safety shower facilities should be available in the immediate work area.
- Required Work/Hygiene Procedure:** Wash hands thoroughly after handling. Do not eat, drink or smoke in work area. If unusual exposures are expected, an industrial hygiene review of work practices, engineering controls and personal protective equipment is recommended.

Exposure Guidelines:

OSHA PEL-TWA:	2 mg/m ³
ACGIH TLV-Ceiling:	2 mg/m ³
NIOSH IDLH:	10 mg/m ³

9. PHYSICAL / CHEMICAL PROPERTIES

- Physical Form:** Liquid
- Color:** Clear to opaque
- Odor:** No distinct odor
- Molecular Weight:** 40.0
- Boiling Point:** 240.8°F (116°C)
- Freezing Point:** -13°F (-25°C)
- Solubility in Water:** Soluble
- Specific Gravity:** 1.27 @ 60°F (*water = 1*)
- Vapor Density:** Not determined (*air = 1*)
- Evaporation Rate:** Not applicable (*butyl acetate = 1*)
- Vapor Pressure:** 95 mmHg @ 60°F



% Volatile: Not applicable
pH: 14

The physical data included above are typical values and should not be construed as a specification.

10. STABILITY & REACTIVITY

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Keep away from water, organic materials, chlorinated solvents, aluminum, phosphorus, tin/tin oxides, and zinc.

Hazardous Decomposition: Direct contact with water may cause a violent exothermic reaction. This material reacts violently with acids, organic halogen compounds and metals (zinc, tin, aluminum etc.) giving off highly flammable hydrogen gas.

Hazardous Polymerization: Not expected to occur.

11. TOXICOLOGY INFORMATION

Primary Route(s) of Exposure: Eye, skin contact, inhalation

Potential Health Effects:

Eye Contact: Causes severe eye damage.

Skin Contact: Causes skin burns. Onset of symptoms may be delayed following.

Inhalation: Corrosive to respiratory tract.

Ingestion: May be harmful if swallowed. Ingestion may cause chemical burns, pain, vomiting, difficulty breathing and other gastrointestinal effects.

Carcinogenicity: The components of this product are not classified as carcinogenic by OSHA, NTP or IARC.

Medical Conditions Aggravated by Overexposure: Asthma and other respiratory conditions, skin disorders.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data are available on the adverse effects of this material on the environment.

13. DISPOSAL CONSIDERATIONS

Disposal Method: This product must be disposed of in accordance with Federal, state and local environmental regulations. Discarded materials may be considered hazardous waste due to pH/corrosivity.

It is the responsibility of the product user to determine at the time of disposal whether a material containing, or derived from, this product should be classified as hazardous waste.



14. TRANSPORTATION INFORMATION

Proper Shipping Name: Sodium Hydroxide Solution
Hazard Label: Corrosive
Hazard Class: 8
UN/NA Number: UN 1824
Packing Group: II
EPA Reportable Quantity (RQ): 1000 lbs. (sodium hydroxide); 4000 lbs. (product as supplied)
Marine Pollutant: No
Emergency Response Guide: 154

15. REGULATORY INFORMATION

U.N. GHS Classification & Labeling Information:

Classification: Corrosive 1B
Specific Target Organ Toxicity (STOT)
- Single Exposure 3



Signal Word: DANGER

H Statements: H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

P Statements: P307+315: If exposed, get immediate medical attention.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P264: Wash thoroughly after handling.
P273: Avoid release into the environment.

NFPA 704 Information:

Health Rating: 3
Flammability Rating: 0
Reactivity Rating: 1
Other Hazards: CORROSIVE



U.S. Federal Regulatory Information:

EPA Clean Air Act: Not listed
EPA Clean Water Act: Not listed
TSCA: The ingredients of this product are listed on TSCA inventory (40 CFR 710).
RCRA: This product as supplied is a D002 (corrosive) waste.
CERCLA RQ: 1000 lbs. (sodium hydroxide); 4000 lbs. (product as supplied)
SARA Title III § 302: None
SARA Title III § 311/312: Acute Health Hazard
SARA Title III § 313: Not listed



U.S. State Regulatory Information:

California Proposition 65: This product is not listed as a carcinogen or reproductive hazard under California's Proposition 65 Safe Drinking Water and Toxic Enforcement Act. However, materials used the manufacturing process may result in contamination with trace quantities of various compounds listed under Proposition 65.

European Union Regulatory Information:

DSD/DPD Risk (R) Phrases: R35: Causes severe burns



DSD/DPD Hazard Symbol: C: Corrosive

DSD/DPD Safety (S) Phrases: S18: Handle and open containers with care.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39: Wear suitable gloves and eye/face protection.
S62: If swallowed, do not induce vomiting.
S64: If swallowed, rinse mouth with water if victim is conscious.

Canadian Regulatory Information:

WHMIS Category: Class E Corrosive Material
Ingredient Disclosure List: Listed
Domestic Substances List (DSL): Listed



16. OTHER INFORMATION

European Union Compliance: This MSDS conforms to regulations 1907/2006/EC (REACH). This product has been classified in accordance with 67/548/EEC, 1999/45/EC, 1272/2008 (CLP) and amendments.

Prepared By: Formosa Plastics Corporation USA
Corporate Environment, Safety & Communications Department

Revision History: The March 4, 2011 version of this MSDS contains revisions to the following sections:
• Section 8 – Exposure Controls/Personal Protection

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