Formosa Plastics Corporation, Texas
Material Safety Data Sheet

MANUFACTURER
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1. PRODUCT IDENTIFICATION

Product Name: Sodium Hypochlorite Solution
Product Code: Bleach 100, Bleach 125, Bleach 150
Chemical Family: Hypochlorite Salt
Chemical Name: Sodium Hypochlorite
CAS No: 7681-52-9
Synonyms: Javel Water Bleach, Soda Bleach
Formula: NaOCl
Technical Information: (361) 987-7453

2. PRODUCT INGREDIENTS

No.	Components	CAS No.	Percent (%)	OSHA PEL
1	Sodium Hypochlorite	7681-52-9	5-20	Not established
2	Sodium Hydroxide	1310-73-2	0.3-5	$2mg/M^3$
3	Water	7732-18-5	75-95	Not established

3. PHYSICAL/CHEMICAL PROPERTIES

Physical Form: Liquid
Color: Clear Light yellow-green
Odor: Pungent, irritating, Smell of household bleach
Molecular Weight: 74.45
Boiling Point: Decomposes prior to boiling
Melting Point: Not established
Freezing Point: -20° F
Solubility in Water: 100%
Specific Gravity: 1.09 to 1.27 (water = 1)
Vapor Density: 2.6 (air = 1)
Evaporation Rate: Not applicable (Butyl Acetate = 1)
Vapor Pressure: 12 – 17 mm/Hg
% Volatile: Not established
pH: 12.5
The physical data presented above are typical values and should not be construed as a specification.

4. FIRE HAZARD DATA AND FIGHTING METHOD

Flash Point: Not applicable
Autoignition: Not applicable
Flammable Limits In Air **(LEL, %):** Not applicable
(UEL, %) Not applicable
Extinguishing Media: Not applicable
Special Fire Fighting Procedure:

Not flammable. Avoid fumes from spilled or exposed liquid, dilute with copious amounts of water, ventilate, and be prepared to use respiratory protection if needed. Acid contamination will produce irritating fumes similar to chlorine gas.

Unusual Fire and Explosion Hazards:

Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents; may result in a fire.

5. HUMAN HEALTH DATA

Emergency Overview: Acute: fumes from spills are irritating to mucous membranes.

Primary Route(s) of Exposure: Inhalation, Eye, Skin Contact

Potential Health Effects and Symptoms of Over-Exposure

Irritating effects increase with strength of solution and time of exposure.

Eye Contact: May cause severe irritation.

Skin Contact: May cause skin irritation and damage

Inhalation: May cause irritation to respiratory tract. Pulmonary edema and respiratory failure may arise in severe cases, onset may take up to 36 hours.

Ingestion: May cause irritation to membranes of the mouth, throat, and stomach pain and possible ulceration

Medical Conditions Aggravated by Overexposure: None known

Carcinogenicity: **NTP:** No **IARC:** No **OSHA:** No

6. FIRST AID MEASURES

Eye Contact: Immediately flush with copious amounts of water for at least 15 minutes. Seek medical attention.

Skin Contact: Immediately wash the affected area with large quantities of water for at least 15 minutes while removing contaminated clothing. Call a physician.

Inhalation: Move to fresh air. Support respiration. Call a physician.

Ingestion: If person is conscious, give water to drink. Do not induce vomiting. Call a physician.

Notes to Physician: Treat symptomatically and supportively. Do not administer acidic antidotes such as sodium bicarbonate.

Other Instructions: No additional remark.

7. EXPOSURE CONTROLS, PERSONAL PROTECTION RECOMMENDATIONS

Eye Protection: Chemical goggles

Skin Protection: Rubber gloves

Respiratory Protection: Not needed under normal conditions. If specific use conditions cause exposure to mist or vapor use respiratory protection as specified in a written respiratory protection program that meets 29 CFR 1910.134. Use NIOSH approved respirator.

Engineering Control: Ventilation is generally not needed unless bleach is exposed to decomposition conditions, i.e. heat or acidic conditions.

Required Work/Hygiene Procedure: Emergency eye wash and safety showers for first aid treatment of potential exposure should be available in the product storage and handling areas. Avoid contact with skin and avoid breathing vapor. Do not eat, drink, or smoke in work area. Wash hands thoroughly after handling, especially before eating, drinking, smoking, chewing, or using restroom facility.

Exposure Guidelines:

No.	Components	OSHA-PEL	ACGIH-TLV
1	Sodium Hypochlorite	Not established	AIHA - WEEL: 2 mg/M3 STEL
2	Sodium Hydroxide	2 mg/M3	2 mg/M3 Ceiling

8. ACCIDENTAL RELEASE CONTROL MEASURES

Response to Spills: Wear proper personal protection equipment. Stop the leak. Contain spilled material with absorbent material, sand or clay, and prevent run-off into surface waters or sewers. Flush and mop area with water allowing to air dry. All clean-up material should be removed and placed in approved containers, labeled and stored in a safe place prior to proper treatment or disposal.

9. HANDLING AND STORAGE

Handling: Wear proper personal protection equipment to handle this product. Do not mix with ammonia, acids, alcohols, ethers and hydrocarbons.

Storage: Store in vented, closed, clean non-corrosive containers. Store in a cool, dry location, away from direct sunlight and not adjacent to chemicals which may react with the bleach if spillage occurs.

Container Use: Do not remove or deface label or tags from the containers. Always empty and clean containers of all residues before adding product to avoid potential chemical reaction caused by product and unknown residue. Returnable containers should be shipped in accordance with supplier's recommendations and in compliance with all federal, state, and DOT regulations. All residual sodium hypochlorite should be removed from containers prior to disposal.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Avoid direct sunlight or heat. Avoid contact with acids, ammonia, methanol, oils, greases, metals, such as nickel, cobalt, copper and iron, and ether.

Hazardous Decomposition: Depends upon temperature and concentration, decomposition products may include hypochlorous acid, sodium oxide, chlorine gas, sodium chlorate and oxygen

Hazardous Polymerization: Will not occur

11. DISPOSAL CONSIDERATIONS

Disposal Method: It must be disposed of in accordance with Federal, State and local environmental control regulations.

Recycle/Reclaim: Recycle to process if possible.

12. TRANSPORT INFORMATION

DOT Shipping Name: Hypochlorite solutions
DOT Label: Corrosive
DOT Hazard Class: 8
UN/NA Number: UN1791
Hazard Label(s): Corrosive
Hazard Placard(s): Corrosive
Packing Group: III
Bulk Packaging: 173.241; nonbulk 173.203
RQ: 100 lbs
Emergency Response Guide (ERG) No.: 154

13. TOXICOLOGICAL INFORMATION

The information provided below can be subject to misinterpretation. Therefore, it is essential the following information be interpreted by individuals trained in its evaluation.

Chemical	Toxicity Data
Sodium Hypochlorite	eye-rbt 10 mg MOD mma-sat 1 mg/plate cyt-hmn: lym 100 ppm/24H cyt-ham: lng 100 mg/L LD50 oral-rat 140 to 340 mg/kg
Sodium Hydroxide	Acute Dermal LD50 (rabbit): 1350 mg/kg

14. ECOLOGICAL INFORMATION

No data is available on the adverse effects of this product on the environment and eco-system. Neither COD or BOD data are available.

15. REGULATORY INFORMATION

FEDERAL REGULATORY INFORMATION

OSHA Status: Hazard Communication
EPA FIFRA: Registered as a Pesticide product
Pesticide Product (Various State Laws): Registered as Pesticide product in States where marked.
EPA Clean Air Act: None
EPA Clean Water Act: Hazardous Substances listing
TSCA Status: TSCA Inventory listing
CERCLA RQ: Sodium Hypochlorite 100 lbs.
Sodium Hydroxide 1000 lbs.

SARA Title III

	Section 302*	Section 313**	Section 311/312***
Sodium Hypochlorite	None	None	None
Sodium Hydroxide	None	None	H1, P5

*Reportable quantity of extremely hazardous substance, Sec. 302
*Threshold planning quantity, extremely hazardous substance, Sec. 302
**Toxic chemical. Sec. 313
**Category as required by Sec 313 (40CFR372.65C). Must be used on Toxic Release Inventory form.
***Hazard category for SARA Sec.311/312 reporting H1=acute health hazard, H2=chronic health hazard, P3=fire hazard, P4=sudden release of pressure hazard, P5=reactive hazard

RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

OTHER REGULATORY INFORMATION

The following chemicals are specifically listed by individual states; other product-specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

State	Chemical	Regulation
CA; MA; MN; NJ; PA	Sodium Hydroxide	State Right-To-Know listing

Product Name: Sodium Hypochlorite

International

Canada: WHMIS: Ingredient disclosure item 1% 1443 (1013) Sodium Hypochlorite

WHMIS: Ingredient disclosure item 1% 1442 (998) Sodium Hydroxide

16. OTHER INFORMATION

NFPA

Fire - 0
Health - 3
Reactivity - 2
Specific Hazard - Oxidizer

HMIS

Health - 2
Flammability - 0
Reactivity - 2
Personal Protection Index - D