HASA CAUSTIC SODA 50% (All Grades)

Material Safety Data Sheet

Emergency 24 Hour Telephone: **CHEMTREC 800.424.9300**

Corporate Headquarters: Hasa Inc.
23119 Drayton Street
Saugus, California 91350
Telephone • 661.259.5848
Fax • 661.259.1538

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION			
1.1	**Product Identification:**		
	1.1.1	**Product Name:**	Hasa Caustic Soda 50% (All Grades)
	1.1.2	**CAS #: (**Chemical Abstracts Service Registry Number)	1310-73-2
	1.1.3	**EINECS:** (European Inventory of Existing Commercial Substances)	215-185-5
	1.1.4	**RTECS:** (Registry of Toxic Effects of Chemical Substances)	WB4900000
	1.1.5	**Synonym:**	Lye, Sodium Hydrate.
	1.1.6	**Chemical Name:**	Sodium Hydroxide
	1.1.7	**Chemical Formula:**	NaOH
	1.1.8	**Chemical Family:**	Alkali
1.2	**Recommended Uses:**		Manufacture of pulp and paper, textiles, drinking water, soaps and detergents and as a drain cleaner.
1.3	**Company Identification:**		Hasa Inc. 23119 Drayton Street Saugus, California 91350
1.4	**Emergency Telephone Number:**		**CHEMTREC (24 Hour):** 1-800-424-9300
1.5	**Non-Emergency Assistance:**		661-259-5848 (8 AM – 5 PM PST / PDT)

SECTION 2: EMERGENCY OVERVIEW and HAZARD IDENTIFICATION			
2.1	**Emergency Overview:**		Odorless, clear, non-volatile liquid. EXTREMELY CORROSIVE! Causes severe burns on contact. Can cause blindness, permanent scarring and death. Aerosols can cause lung injury – effects may be delayed. Highly reactive. Can react violently with water and numerous commonly encountered materials, generating enough heat to ignite nearby combustible materials. Contact with many organic and inorganic chemicals may cause fire or explosion. Reacts with some metals to liberate hydrogen gas, which can form explosive mixtures with air. Will not burn. Harmful to aquatic life.
2.2	**Acute Hazard:**		
	2.2.1	**Eye Contact:**	The severity of injury increases with the concentration, the duration of exposure, and the speed of penetration into the eye. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring and clouding. Conditions, which affect vision such as glaucoma and cataracts, are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue which may lead to permanent blindness.
	2.2.2	**Skin Contact:**	Sodium hydroxide is capable of causing severe burns with deep ulceration and permanent scarring. It can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration (solutions) and the duration of exposure. Burns may not be immediately painful; onset of pain may be delayed minutes to hours.
	2.2.3	**Inhalation:**	Sodium hydroxide does not readily form a vapor and inhalation exposure is likely to occur as an aerosol. Due to its corrosive nature, sodium hydroxide aerosols could cause pulmonary edema (severe, life threatening lung injury). The development of pulmonary edema may be delayed up to 48 hours after exposure. The early symptoms of pulmonary edema include shortness of breath and tightness in the chest.
	2.2.4	**Ingestion:**	Severe pain; burning of the mouth, throat and esophagus; vomiting; diarrhea; collapse and possible death may result.
2.3	**Chronic Hazard:**		Repeated or prolonged skin contact would be expected to cause drying, cracking, and inflammation of the skin (dermatitis).
2.4	**Existing Medical Conditions Possibly Aggravated by Exposure:**		Asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. Skin irritation may be aggravated in individuals with existing skin disorders.

SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS			
	Ingredient	**CAS No.**	**Approx. Wt.%**
3.1	Sodium Hydroxide	1310-73-2	50%
3.2	Water	7732-18-5	50%

SECTION 4: FIRST AID MEASURES		
4.1	**IF IN EYES**	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
4.2	**IF ON SKIN OR CLOTHING**	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
4.3	**IF INHALED**	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
4.4	**IF SWALLOWED**	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER		
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.		
NOTE TO PHYSICIAN		
Probable mucosal damage may contraindicate the use of gastric lavage.		

SECTION 5: FIRE FIGHTING MEASURES		
5.1	**Flammability:**	Not flammable.
5.2	**Auto-Ignition Temperature:**	Not applicable.
5.3	**Flash Point:**	Not applicable.
5.4	**Flammable Limits:**	Not applicable.
5.5	**Extinguishing Media:**	Use extinguishing media suitable for the surrounding fire. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to sodium hydroxide.
5.6	**Fire and Explosion Hazards:**	Sodium hydroxide will not burn or support combustion. The reaction of sodium hydroxide with water and a number of commonly encountered materials (see Section 10) can generate sufficient heat to ignite nearby combustible materials.
5.7	**Thermal Decomposition Products:**	Sodium oxide fumes.
5.8	**Fire Hazards in Presence of Various Substances:**	Sodium hydroxide can react with metals, such as aluminum, tin and zinc, to form flammable hydrogen gas.
5.9	**Fire-Fighting Procedures:**	Evacuate area and fight fire from a safe distance or a protected location. Approach fire from upwind. If possible, isolate materials not involved in the fire and protect personnel. Move containers from fire area if it can be done without risk. Avoid contact with skin. Water can be used with extreme caution to extinguish a fire in an area where sodium hydroxide is stored. The water must not come into contact with the sodium hydroxide. Water can be used in flooding quantities as a spray or fog to keep fire-exposed containers cool and absorb heat. At high temperatures, fuming may occur, giving off a strong, corrosive gas. Do not enter without wearing specialized protective equipment suitable for the situation.

SECTION 6: ACCIDENTAL RELEASE MEASURES		
6.1	**Spills, Leaks or Releases:**	• Restrict access to area until completion of clean up. Ensure trained personnel to conduct clean up. • Ventilate area. • Wear adequate personal protective equipment (See Section 8). Do not touch spilled material. • Prevent entry into sewers or waterways. • Land spill of sodium hydroxide: Solutions should be contained by diking with inert material, such as sand or earth. Solutions can be recovered or carefully diluted with water and cautiously neutralized with acids such as acetic acid or hydrochloric acid. • Water spill: Neutralize with dilute acid. • Comply with Federal, Provincial/State and local regulations on reporting releases.
6.2	**Reporting:**	Spills are subject to CERCLA reporting requirements: RQ = 1,000 lbs. (454 kg).

SECTION 7: HANDLING AND STORAGE		
7.1	**Precautions:**	EXTREMELY CORROSIVE! Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Wear appropriate Personal Protection Equipment (Refer to Section 8). People working with this chemical should be properly trained regarding its hazards and its safe use.
7.2	**Handling:**	Use smallest possible amounts in designated areas with adequate ventilation. Keep containers closed when not in use. Empty containers may contain hazardous residues. Avoid generating mists. Transfer solutions using equipment, which is corrosion-resistant. Cautiously, transfer into sturdy containers made of compatible materials. Never return contaminated material to its original container. Considerable heat is generated when diluted with water. Proper handling procedures must be followed to prevent vigorous boiling, splattering or violent eruption of the diluted solution. Never add water to a sodium hydroxide solution. **ALWAYS ADD SODIUM HYDROXIDE TO WATER** and provide agitation. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation.
7.3	**Storage:**	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use and when empty. Protect from damage. Store away from incompatible materials such as strong acids; nitro-aromatic, nitro-paraffinic or organohalogen compounds. See Section 10 for Incompatibles. Use corrosion resistant structural materials and lighting and ventilation systems in the storage area. Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated. Nickel is the preferred metal for handling this product. Plastics or plastic-lined steel, or FRP tanks of Derakane vinyl ester resin may be suitable. Container contents may develop pressure after prolonged storage. Drums may need to be vented. Only trained personnel should perform venting.
7.4	**Storage Temperature:**	Avoid freezing. Do not expose sealed containers to temperatures above 40ºC (104ºF).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1	**Engineering Controls:**		Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact.
8.2	**Personal Protection:**		
	8.2.1	**Eye / Face Protection:**	Wear full face-shield and chemical safety goggles when there is potential for contact.
	8.2.2	**Skin Protection:**	Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber; natural rubber, neoprene rubber, nitrile rubber, polyethylene, polyvinyl chloride, Teflon™, Viton™, Saranex™, 4H™, Barricade™, CPF 3™, Responder™, Trellchem HPS™, Tychem 10000™. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse.
	8.2.3	**Respiratory Protection:**	Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and chemical goggles. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus.
	8.2.4	**Other Safety Equipment:**	Eye wash facility and emergency shower should be in close proximity.
8.3	**Exposure Limits:**		
	8.3.1	**AIHA** (American Industrial Hygiene Association) / **WEEL** (Workplace Environmental Exposure Level guides) 2010	Not established.
	8.3.2	**ACGIH** (American Conference of Governmental Industrial Hygienists) **TWA** (Time Weighted Average)	Not established.
	8.3.3	**ACGIH STEL** (Short Term Exposure Limit)	Not established.
	8.3.4	**OSHA PEL** (Permisible Exposure Limit)	2 mg/m^3
	8.3.5	**ACGIH** (Ceiling)	2 mg/m^3
	8.3.6	**NIOSH** (National Institute for Occupational Safety & Health) **IDLH** (Immediate Danger to Life & Health)	10 mg/m^3
	8.3.7	**OSHA STEL** (Short Term Exposure Limit)	Not established.
	8.3.8	**NIOSH REL** (Recommended Exposure Limit)	2 mg/m^3

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES		
9.1	**Physical state and Appearance:**	Clear-to-slightly turbid liquid.
9.2	**Odor:**	Odorless
9.3	**Odor Threshold:**	Odorless
9.4	**Taste:**	No information available.
9.5	**Molecular Weight:**	40 g/mole
9.6	**Color:**	Off White
9.7	**pH** (7.5% aqueous solution):	14
9.8	**Boiling Point:**	145°C (293°F)
9.9	**Melting Point:**	4.4°C (40°F)
9.10	**Critical Temperature:**	No information available.
9.11	**Specific Gravity** (water = 1):	1.53 @ 15.5°C (60°F)
9.12	**Bulk Density** (lb/ft^3):	No information available.
9.13	**Decomposition Temperature:**	No information available.
9.14	**Vapor Pressure** (mm Hg):	1.5 mm Hg (0.2 kPa) at 20 ºC(68˚F)
9.15	**Volatility:**	Not applicable.
9.16	**Water/Oil Distribution Coefficient:**	Essentially zero
9.17	**Solubility in Water** (@ 25°C):	Infinite.

SECTION 10: STABILITY AND REACTIVITY		
10.1	**Stability:**	Stable at room temperature.
10.2	**Hazardous Decomposition Products:**	Thermal decomposition: sodium oxide fumes.
10.3	**Conditions to Avoid:**	Water. Keep away from incompatibles.
10.4	**Incompatibility:**	Sodium hydroxide reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, nitroaromatic, nitroparaffin and organohalogen compounds, glycols and organic peroxides. Reacts violently with water generating significant heat and dangerously spattering corrosive sodium hydroxide. Violently polymerizes acetaldehyde, acrolein or acrylonitrile. Produces flammable and explosive hydrogen gas if it reacts with sodium tetrahydroborate or certain metals such as aluminum, tin, or zinc. Can form spontaneously flammable chemicals upon contact with 1,2- dichloroethylene, trichloroethylene or tetrachloroethane. Can produce carbon monoxide upon contact with solutions of sugars, such as fructose, lactose and maltose.
10.5	**Corrosivity:**	Corrosive to aluminum, tin, zinc, copper, and most alloys in which they are present including brass and bronze. Corrosive to steel at elevated temperatures above 40°C (104ºF).
10.6	**Special Remarks on Reactivity:**	Slowly attacks glass at room temperature.
10.7	**Polymerization:**	Will not occur. However, it can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	**Routes of Entry:**		Eyes, nose and skin. Unlikely ingested.
11.2	**Acute Toxicity:**		
	11.2.1	**Oral Toxicity** (LD_{50}):	LD_{Lo} - Lowest published lethal dose oral rabbit 500 mg /kg ; LD_{50} intraperitoneal mouse 40 mg/kg
	11.2.2	**Dermal Toxicity** (LD_{50}):	1350 mg/kg (rabbit).
11.3	**Acute Effects from Overexposure:**		Sodium hydroxide is corrosive and may produce severe eye, skin and respiratory tract irritation and upper gastrointestinal tract damage. Ingestion of concentrated solutions has caused death in animals and humans. [Gosselin, Smith & Hodge, 1984; PB 234-899 1974]
11.4	**Chronic Effects from Overexposure:**		Sodium hydroxide may produce inflammation of the eyes, skin, and mucous membranes. Esophageal carcinoma at the site of a chronic lye stricture has been reported. [Gosselin , Smith & Hodge 1984]
11.5	**TOXICITY:** The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation and possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion/ulceration, nausea, and vomiting. In general, chronic effects are due to long-term irritation. This material may cause dermatitis. In rare cases reports have noted long-term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.		
11.6	**Carcinogenic [Cancer Potential] Information:**		
	11.6.1	**NTP** (National Toxicological Program 6th Annual Report on Carcinogens):	Not Listed.
	11.6.2	**IARC** (International Agency for Research on Cancer Monographs, V. 1-100):	Not Listed.
	11.6.3	**Proposition 65, California only**: (Safe Drinking Water and Toxic Enforcement Act of 1986):	Not Listed.

SECTION 12: ECOLOGICAL INFORMATION

12.1	**Ecotoxicity:** This material has exhibited moderate toxicity to aquatic organisms.		
	12.1.1	**Freshwater Fish** (LC_{50}):	LC_{50} brook trout: 25 ppm/24 hr LC_{50} king salmon: 48 ppm
	12.1.2	**Invertebrate** (EC_{50}):	EC_{50} daphnia magna: 100 ppm EC_{50} shrimp: 33 -100 ppm/48 hr EC_{50} cockle: 330 -1000 ppm/48 hr
	12.1.3	**Avian** (LD_{50}):	No information.
12.2	**Environmental Fate:**		This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state in the environment.
12.3	**Persistence and Degradation:**		Degrades readily by reacting with natural carbon dioxide in the air.
12.4	**Bioconcentration:**		This material is not expected to bioconcentrate in organisms.
12.5	**Biodegradation:**		This material is inorganic and not subject to biodegradation.
12.6	**Additional Ecological Information:**		This material has exhibited slight toxicity to terrestrial organisms.

SECTION 13: DISPOSAL CONSIDERATIONS

Review federal, state and local government requirements prior to disposal.
Do not dispose of waste with normal garbage, or to sewer systems.
Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options.
RCRA: Test waste material for corrosivity, D002, prior to disposal.

SECTION 14: TRANSPORT INFORMATION

14.1	**US D.O.T.** (49 CFR 172.101)		
	14.1.1	**Proper Shipping Name:**	Sodium Hydroxide, Solution
	14.1.2	**Hazard Class:**	8
	14.1.3	**UN ID Number:**	UN 1824
	14.1.4	**Packing Group:**	PG II
	14.1.5	**Reportable Quantity (RQ):**	1,000 lb (160 gallons)
14.2	**Canadian TDG** (Transportation of Dangerous Goods)		
	14.2.1	**Shipping Name:**	Sodium Hydroxide, Solution
	14.2.2	**UN ID Number:**	8
	14.2.3	**Hazard Class:**	UN 1824
	14.2.4	**Packing Group:**	PG II
	14.2.5	**Reportable Quantity (RQ):**	Not applicable.

This information is not intended to convey all specific regulatory or operational requirements / information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

15.1	**U.S. Regulations:**		
	15.1.1	**OSHA HAZCOM** (Hazard Communication)	The product is regulated under the HAZCOM Standard (29 CFR 1910.1200)
	15.1.2	**OSHA PSM** (Process Safety Management)	Not regulated under PSM Standard (29 CFR 1910.119)
	15.1.3	**EPA FIFRA** (Federal Insecticide, Fungicide and Rodenticide Act)	Not regulated as a pesticide.
	15.1.4	**EPA SARA TITLE III** (Superfund Amendments And Reauthorization Act) **SECTIONS 311/312**	ACUTE: Yes CHRONIC: No FIRE: No REACTIVE: Yes SUDDEN RELEASE: No
	15.1.5	**EPA TSCA** (Toxic Substance Control Act)	Listed on the inventory.
	15.1.6	**EPA RCRA** (Resource Conservation and Recovery Act)	D002
	15.1.7	**EPA RMP** (Risk Management Plan)	Not regulated. (40 CFR 68.130)
15.2	**State of California Regulations:**		
	15.2.1	**Prop 65** (Safe Drinking Water and Toxic Enforcement Act of 1986):	Not Listed
	15.2.2	**CalARP** (California Accidental Release Prevention):	Not regulated.
	15.2.3	**CDPR** (California Department of Pesticide Regulation):	Not regulated.
15.3	**Canada Regulations:**		
	15.3.1	**WHMIS** (Workplace Hazardous Materials Information System):	• Classification: E - Corrosive material • Health Effects Criteria Met by this Chemical: ▪ E - Corrosive to skin ▪ E - TDG class 8 - corrosive substance • Ingredient Disclosure List: Included for disclosure at 1% or greater.
	15.3.2	**DSL** (Domestic Substances List)	The substance is specified on the public Portion of the DSL.
15.4	**International Inventory:**		
	15.4.1	**AICS** (Australian Inventory of Chemical Substances)	On inventory or in compliance with inventory.
	15.4.2	**KECI** (Korean Existing Chemicals Inventory)	On inventory or in compliance with inventory.
	15.4.3	**PICCS** (Philippine Inventory of Chemicals and Chemical Substances)	On inventory or in compliance with inventory.
	15.4.4	**IECSC** (Inventory of Existing Chemical Substances in China)	On inventory or in compliance with inventory.
	15.4.5	**NZIoC** (New Zealand Inventory of Chemicals)	On inventory or in compliance with inventory.

SECTION 16: OTHER INFORMATION

16.1	**HMIS III** (Hazardous Materials Identification System):		
	16.1.1	**HEALTH:**	**3**
	16.1.2	**FLAMMABILITY:**	**0**
	16.1.3	**PHYSICAL HAZARD:**	**1**
	16.1.4	**Personal Protection:**	See Section 8
16.2	**NFPA 704** (National Fire Protection Association):		
	16.2.1	**Health:**	3
	16.2.2	**Flammability:**	0
	16.2.3	**Instability**:	1
	16.2.4	**Special:**	None
16.3	**International Fire Code/ International Building Code.**		Information not available.
16.4	**ANSI** (American National Standards Institute):		
	16.4.1	**Hazardous Industrial Chemicals -** MSDSs-Preparation:	Complies with **ANSI Z400.1 – 2004.**
	16.4.2	**Hazardous Industrial Chemicals -** Precautionary Labeling:	Complies with **ANSI Z129.1 – 2006.**
16.5	**GHS** (Globally Harmonized System)**:**		
	16.5.1	**GHS Classification:**	Serious Eye Damage / Eye Irritation (Category 1).
	16.5.2	**GHS Symbol:**	
	16.5.3	**GHS Signal Word:**	Danger.
	16.5.4	**GHS Hazard Statement:**	Causes severe skin burns and eye damage.

NOTE: The information contained herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge and belief. NO WARRANTY OR GUARANTEE, express or implied, is made regarding the product performance, product stability, or as to any other condition of use, handling, transportation, and storage. Customer use, handling, transportation, and storage may involve additional safety and/or performance considerations. Our technical personnel will be happy to respond to questions regarding safe handling, storage, transportation, and use procedures. The safe handling, storage, transportation, and use procedures remain the sole responsibility of the customer. No suggestions for handling, storage, transportation, or use are intended as or to be construed as recommendations which may infringe on any existing patents or violate any Federal, State, and/or local law and/or regulation, ordinance, standard, etc. This Material Data Safety Sheet has been prepared by Hasa, Inc. according to Hazard Communication Guidelines for Compliance (OSHA 3111) published by U.S. Department of Labor, Occupational Safety and Health Administration and Hasa, Inc. can rely on the information received from its suppliers and Hasa Inc. has no independent duty to analyze the chemical or evaluate the hazards of it.