MATERIAL SAFETY DATA SHEET

Revision #: 04

Section 1 - Product Identification & Use

Product Name:	30% Sodium Hydroxide Solution
Synonyms:	Caustic Soda Solution
WHMIS Classification:	Class E, Corrosive Liquids
TDG Classification:	Sodium Hydroxide Solutions UN 1824, Class 8,II
Manufacturer:	Advance Chemicals Ltd. 2023 Kingsway Avenue Port Coquitlam, BC V3C 1S9 Phone (604) 945-9666, Fax (604) 945-9617
Emergency phone:	CANUTEC 24 hrs. (613) 996-6666

Section 2 - Hazardous Ingredients

Hazardous Components	%(w/w)	C.A.S. No.	LD_{50} & LC_{50}
Sodium Hydroxide	30	1310-73-2	oral, rabbit 500mg/kg TLV 2 mg/m^3
Sodium Carbonate	0.1- 1.0	497-19-8	TLV 10mg/m^3

Section 3 - Physical Data

Physical state: liquid
Boiling point: 119° Celcius
Liquid density: 1.33 g/mL
Freezing point: 0° Celcius
pH: 14 @ 20°C
Solubility in water: 100%
Vapour pressure: 76 mmHg @ 60°C
Evaporation rate: n/a

Odour & Apprearance: Clear and colourless liquid, there may not be any distinct odour above the open liquid.

Section 4 - Fire or Explosion Hazard

Flammability: The product is not considered to be flammable.

Extinguishing media: Take care not to splash or splatter the product. Wear full chemical protective clothing. Use an extinguishing media for surrounding the fire, or all purpose foam by manufacturer's recommended techniques for large fires. Use water to cool fire exposed containers to prevent vapour build-up and rupture. Water may also be used to flush spills away from dangerous exposures.

Hazardous Combustion Products: In an aqueous solution, caustic can react with metals to produce hydrogen gas which may accumulate to explosive and flammable concentration.

Section 5 - Reactivity Data

Stability: Stable

Incompatible substances: Metals, strong acids, organic halogen compounds and organic nitro compounds.

Polymerization: Will not occur.

Conditions to Avoid: Contact with soft metals produces hydrogen gas, which can form flammable or explosive mixtures in air. Product may absorb carbon dioxide gas from the atmosphere or other sources, and form sodium carbonate. May spatter upon contact with water.

Hazardous Combustion Products: No data found.

Section 6 - Toxicological Properties

Carcinogenicity: Sodium hydroxide has been implicated as a cause of cancer of the esophagus in individuals who have ingested it. The cancer may develop 12-42 years after the ingestion incident. Similar cancers have been observed at the site of severe thermal burns. These cancers may be due to the tissue destruction and scar formation rather than the hydroxide itself. (Stanchem, 1991, NaOH MSDS). The ingredients of this product are not classified as carcinogenic by the American Conference of Governmental Industrial Hygienists (ACGIH), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA), and not listed as a carcinogen by the National Toxicology Program (NTP).; Stanchem Inc. 1991

Inhalation: Severe irritation of the throat and nasal passages.

Skin contact: Severe and deep burns of the skin. Painful tissue destruction may result and the sensation of pain may be delayed.

Eye contact: Extremely corrosive. Causes corneal scarring and clouding. Glaucoma, cataracts and permanent blindness may occur. Damage may be delayed and not immediately apparent.

Ingestion: Extremely corrosive. May cause pain and severe vomiting, burns of the throat and esophagus, and perforation of the esophagus. May be fatal.

Other health effects: CORROSIVE EFFECTS ON THE SKIN AND EYES MAY BE DELAYED, AND DAMAGE MAY RESULT WITHOUT THE SENSATION OR ONSET OF ANY PAIN. STRICT ADHERENCE TO SAFETY AND IMMEDIATE FIRST AID FOLLOWING ANY EXPOSURE IS ESSENTIAL.

Exposure limits: ACGIH TLV 2 mg/m^3

Section 7 - Preventative Measures

Personal Protective Equipment: Avoid contact with skin and eyes. Wear chemical protective gloves, goggles and face shield, rubber apron and boots. Eye wash fountains and safety shower facilities should be provided nearby for emergency use.

Respiratory protection: For vapours and mist, use an NIOSH/MSHA approved air purifying, dust, mist and particulate respirator equipped with a full face piece. For unknown concentrations, or concentrations above 20 mg/m^3, use a continuous supplied air line respirator with a safety hood.

Ventilation Requirements: This product should be used in a well ventilated area at all times. If the solution is to be heated or a mist will be generated during product application, then local exhaust ventilation will be necessary.

Action to take for spills & leaks: Wear chemical protective clothing, rubber gloves and suitable respiratory protection. Small spills should be wiped up with absorbant material and disposed of in government approved waste containers. The spilled product can be neutralized with a dilute solution of hydrochloric acid to pH 6-8, then wet down with a little water to aid mixing. The spill area may then be flushed with large quantities of water. Larger spills should be contained by diking with sand, soil or other absorbant, non-combustible material, then transferred into approved waste containers for proper disposal. Do not allow spilled, or waste product to flow into waterways. Keep product out of sewers, storm drains, surface run-off water and soil. Restrict access to non-protected personnel. Comply with all government regulations on spill reporting, and handling and disposal of waste.

Disposal methods: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, provincial and local regulatory agencies to ascertain proper disposal procedures.

Note: Empty containers can have residues, gasses and mists, and are subject to proper waste disposal as mentioned above.

Storage & Handling Precautions: Warning! Harmful or fatal if swallowed. Causes eye, skin and respiratory irritation. Avoid contact with eyes and repeated contact with skin and clothing. Do not ingest. Keep container tightly closed when not in use. Store upright in a cool, dry, well ventilated place away from incompatible materials. Do not use pressure to empty container. Wash thoroughly after handling. Use with adequate ventilation.

Repair and Maintenance Precautions: Do not cut, grind, weld or drill in, on or near this container.

Section 8 - First Aid Measures

If inhaled: Remove victim to fresh air. Give artificial respiration if not breathing. Get immediate emergency medical attention. Keep patient warm and at rest.

In case of eye contact: Immediately flush eyes with clean water for at least twenty (20) minutes, lifting the upper and lower eye lids to ensure complete flushing action of the eyeball. Get immediate emergency medical attention. Do not transport victim until the recommended flushing period has been completed, unless eye flushing can be carried out during transport.

In case of skin contact: Immediately flush skin with plenty of clean running water for at least twenty (20) minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Launder clothes before re-use.

In case of ingestion or swallowing: If victim is conscious, dilute stomach contents by giving large amounts of water or milk. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious victim. GET IMMEDIATE EMERGENCY MEDICAL ATTENTION.

Emergency Medical Care: Sodium hydroxide eye burns often go in three stages. An acute stage where early damage is sustained. A reparation stage when the eye begins to heal. Then a stage of late complications when a relapse may occur with more severe damage. Follow up care is essential.

Section 9 - Preparation Information

Advance Chemicals Limited expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided. The information contained herein is offered only as a guide to the handling of this specific product, and has been prepared in good faith by technically knowledgeable personnel. This M.S.D.S. is not intended to be all inclusive, and the manner and conditions of use may involve other and additional considerations.

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