

MATERIAL SAFETY DATA SHEET

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Revision No: 2
Catholyte

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Catholyte
GENERAL USE: Waste product
PRODUCT FORMULATION NAME: Dilute Sodium Hydroxide
CHEMICAL FAMILY: Inorganic salt solution in water
GENERIC NAME: None

MANUFACTURER

Sterilox Technologies, Inc.
320 King of Prussia Road, Suite 200
Radnor, PA 19087

Customer Service: 610-341-1899

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency FAX: 610-341-0503

Tel: 610-341-1899

COMMENTS: To the best of our knowledge, this Material Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200, 91/155/EEC and Canadian Hazardous Products Act.

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS Registry #</u>	<u>EINECS #</u>
Sodium Hydroxide	<10	1310-73-2	215-185-5
Water	>90	7732-18-5	231-791-2

COMMENTS:

Product composition ranges shown are typical values for health, safety and environmental use and are not intended as specifications.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Colorless liquid

IMMEDIATE CONCERNS: DANGER! Corrosive. Causes eye and skin burns. Eye contact may result in permanent eye damage. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns.

POTENTIAL HEALTH EFFECTS

EYES: Causes eye burns. May cause lacrimation (tearing), blurred vision, and photophobia. May cause chemical conjunctivitis and corneal damage.

SKIN: Causes skin burns. Contact with the skin may have a delayed effect with aching beginning after several hours followed by burns. May cause skin rash (in milder cases) and cold and clammy skin with cyanosis or pale color.

INGESTION: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhoea and shock. May cause systemic effects.

INHALATION: Irritation may lead to chemical pneumonitis and pulmonary oedema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause systemic effects.

CHRONIC: Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

4. FIRST AID MEASURES

EYES: Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation is required for at least 30 minutes.

SKIN: Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner which limits further exposure.

INGESTION: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

INHALATION: Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: Evacuate personnel downwind of fire to avoid inhalation of irritating and/or harmful fumes and smoke.

EXTINGUISHING MEDIA: Substance is non-combustible; use agent most appropriate to extinguish surrounding fire. Cool containers with flooding quantities of water until well after fire is out.

FIRE FIGHTING EQUIPMENT: Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (Bunker Gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of a SCBA may not be required.

6. ACCIDENTAL RELEASE MEASURES

GENERAL INFORMATION: Use proper personal protective equipment as indicated in Section 8.

SPILLS / LEAKS:

Absorb spill with inert material (E.g. dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

7. HANDLING AND STORAGE

HANDLING:

Wash thoroughly after handling. Use only in a well ventilated area. Do not breathe dust, vapor, mist or gas. Do not get in eyes, on skin or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes.

STORAGE:

Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from metals. Keep away from flammable liquids. Keep away from organic halogens.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields or goggles when handling this material.

SKIN: Wear appropriate protective gloves to prevent exposure.

RESPIRATORY: A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

WORK HYGIENIC PRACTICES: Facilities storing or using this material should be equipped with an eyewash facility and a safety shower. Good personal hygiene practices should always be followed.

EXPOSURE LIMITS:

Chemical Name	ACGIH	NIOSH	OSHA – Final PELs
Sodium Hydroxide	C 2 mg/m ³	10 mg/m ³ IDLH	2 mg/m ³ TWA
Water	None listed	None listed	None listed

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Practically odorless

APPEARANCE: Colorless liquid

pH: 11-13.

VAPOR PRESSURE: Not available.

VAPOR DENSITY: >1.0

BOILING POINT: >100 deg C

FREEZING POINT: < 0 deg C

MELTING POINT: < 0 deg C

SOLUBILITY IN WATER: Soluble

VISCOSITY: Not available.

MOLECULAR FORMULA: Solution

MOLECULAR WEIGHT: Not applicable

10. STABILITY AND REACTIVITY

STABLE: Yes.

CONDITIONS TO AVOID: Incompatible materials, acids, excess heat.

STABILITY: The product is stable under normal ambient conditions of temperature and pressure.

HAZARDOUS POLYMERIZATION: Has not been reported.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of sodium oxide, sodium peroxide fumes.

INCOMPATIBLE MATERIALS: Acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulphuric acid), acids (organic, e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), aldehydes (e.g. acetaldehyde, acrolein, chloral hydrate, formaldehyde), carbamates (e.g. carbanolate, carbofuran), esters (e.g. butyl acetate, ethyl acetate, propyl formate), halogenated organics (e.g. dibromoethane, hexachlorobenzene, methyl chloride, trichloroethylene), isocyanates (e.g. methyl isocyanate), ketones (e.g. acetone, acetophenone, MEK, MIBK), metals (alkali and alkaline, e.g. cesium, potassium, sodium), metals as powders (e.g. hafnium, raney nickel), metals and metal compounds (toxic, e.g. beryllium, lead acetate, nickel carbonyl, tetraethyl lead), nitrides (e.g. potassium nitride, sodium nitride), nitriles (e.g. acetonitrile, methyl cyanide), nitro compounds (organic, e.g. nitrobenzene).

11. TOXICOLOGICAL INFORMATION

RTECS#: CAS# 1310-73-2: WB4900000
CAS# 7732-18-5: ZC0110000

LC₅₀ / LD₅₀: Not Available

ORAL RAT: CAS# 7732-18-5 90ml/kg

CARCINOGENICITY:

Listed by IARC - No
Listed by NTP - No
Listed by OSHA - No
Listed by ACGIH - No
Listed by NIOSH - No

MUTAGENICITY: No information found.

EPIDEMIOLOGY: No information found.

NEUROTOXICITY: No information found.

REPRODUCTIVE EFFECTS: No information found.

TERATOGENIC EFFECTS: No information found.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: fish: Carp: 180 ppm (LC100); 24h

CHEMICAL FATE INFORMATION: For more information, see "Handbook of Environmental Fate and Exposure Data".

13. DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPS guidelines for the classification determination are listed in 40 CFR Part. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

No information available.

CANADA TRANSPORT OF DANGEROUS GOODS

No information available.

15. REGULATORY INFORMATION

UNITED STATES

TSCA

CAS# 1310-73-2 and 7732-18-5 are listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 1310-73-2: final RQ = 1000 pounds (454 kg).

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 1310-73-2 acute, reactive.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS # 1310-73-2 is listed as a Hazardous Substance under the CWA.

Substances under the CWA.

None of the chemicals in this product are listed as Priority

Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Sodium hydroxide and be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ

California No Significant Risk Level:

None of the chemicals in this product are listed.

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION: E

WHMIS (WORKER HAZARDOUS MATERIALS INFORMATION SYSTEM): This product is WHMIS controlled.

CANADA INGREDIENT DISCLOSURE LIST: This product does not contain any known ingredient(s) on the "Ingredient Disclosure List".

CAS# 1310-73-2 is listed on Canada's DSL/NDSL List
CAS# 7732-18-5 is listed on Canada's DSL/NDSL List

EUROPEAN COMMUNITY

EUROPEAN COMMUNITY REGULATORY: All intentional ingredients are listed on the European's EINECS Inventory.

Hazard Symbols: C

Risk Phrases: R 34 Causes burns

Safety Phrases: S 3/7/9 Keep container tightly closed in a cool, well-ventilated place

S 23 Do not inhale gas/fumes/vapor/spray.

S 24/25 Avoid contact with skin and eyes.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28A After contact with skin, wash immediately with plenty of water.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

EXPOSURE LIMITS

CAS# 1310-73-2: OEL-AUSTRALIA:TWA 2 mg/m³

OEL-BELGIUM:STEL 2 mg/m³

OEL-DENMARK:TWA 2 mg/m³

OEL-FINLAND:TWA 2 mg/m³

OEL-FRANCE:TWA 2 mg/m³

OEL-GERMANY:TWA 2 mg/m³

OEL-JAPAN:STEL 2 mg/m³

OEL-THE NETHERLANDS:TWA 2 mg/m³

OEL-THE PHILIPPINES:TWA 2 mg/m³

OEL-SWEDEN:TWA 2 mg/m³

OEL-SWITZERLAND:TWA 2 mg/m³;STEL 4 mg/m³

OEL-THAILAND:TWA 2 mg/m³

OEL-TURKEY:TWA 2 mg/m³

OEL-UNITED KINGDOM:TWA 2 mg/m³;STEL 2 mg/m³

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

Wgk (Water Danger / Protection)

CAS# 1310-73-2: 1

CAS# 7732-18-5: No information available.

16. OTHER INFORMATION

DISCLAIMER: Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.