



SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

- 1.1 Product Identifier: **KOCHKLEEN® 230** Version: 5
Date of approval: 07 January 2015
- Trade Names: **KOCHKLEEN® 230**
- 1.2 General Use: Cleaning Agent
Product Description: Amber to light brown liquid
- 1.3 Manufacturer Koch Membrane Systems, Inc.
850 Main Street
Wilmington, MA
01887 USA
- 1.4 Telephone 8 – 5 (M-F, EST): +1 (978) 657-4250
- Emergency Telephone: CHEMTREC +1 (800) 424-9300 (inside USA)
+1 (703) 527-3887 (outside USA)

For technical assistance regarding this product, please contact your local Koch Membrane Systems representative.

SECTION 2 – HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:
- This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR §1910.1200).
- 2.2 Emergency overview:
Amber to light brown liquid. Corrosive to eyes and skin. Overexposure may cause temporary or permanent blindness. Contains a material which may cause cancer based on animal data.
- 2.3 Most important symptoms and effects, both acute and delayed:
- EYES: CORROSIVE. Exposure may cause severe burns, destruction of eye tissue and possible permanent injury or blindness.
- SKIN: CORROSIVE. Contact may cause reddening, itching, inflammation, burns, blistering and possibly severe tissue damage. Burns may not become symptomatic for several hours after contact.
- INGESTION: May cause painful irritation and burning of the mouth and throat, painful swallowing, labored breathing, burns or perforation of the gastrointestinal tract leading to ulceration and secondary infection.
- INHALATION: May be irritating. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	Chemical Name	Percentage (wt/wt)
1310-73-2	Sodium hydroxide	5 - 10
64-02-8	Tetrasodium ethylenediamine tetraacetate	5 - 10
526-95-4	Gluconic acid	3 - 7
28348-53-0	Benzenesulfonic acid, (1-methylethyl)-, sodium salt	1 - 5
25155-30-0	Dodecylbenzene sulfonate	1 - 5
5064-31-3	Trisodium nitrilotriacetate	0.1 - 0.2

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

SECTION 4 – FIRST AID MEASURES

- 4.1 Description of first aid measures:
- EYES: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away

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- from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.
- SKIN:** Immediately flush skin with plenty of water, for at least 15 minutes, while removing contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION.
- Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.
- INGESTION:** Rinse out mouth with water. Keep affected person warm and at rest.
- Do not induce vomiting unless directed by a physician. GET IMMEDIATE MEDICAL ATTENTION. Never give anything by mouth to an unconscious person. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side.
- If victim is conscious and alert, give 1-3 glasses of water to dilute stomach contents.
- INHALATION:** Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen.
- Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

4.2 Indication of any immediate medical attention and special treatment needed:

If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Treat as an alkali corrosive; these agents damage the gastrointestinal tract by liquefaction necrosis which permits deep tissue penetration. Severe alkali burns may extend to adjacent viscera. Acute symptoms may not indicate the severity of tissue injury, but signs of chronic injury may include drooling, inability to swallow, erythema and/or ulceration of the oral pharynx, hematemeses, and occasionally shock and respiratory distress. Necrosis and associated inflammatory processes peak at 48 hours, but extend up to 4 days. Initial healing processes occur during the period of 4-14 days, but the esophageal wall is the weakest during this period and the hazard of perforation is greatest.

SECTION 5 – FIREFIGHTING MEASURES

Flammable properties: Not flammable or combustible

- 5.1 Extinguishing media Use any means suitable for extinguishing surrounding fire. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
- Unsuitable: Water jet (frothing may occur).
- 5.2 Special hazards arising from the substance or mixture Thermal decomposition may produce sodium oxides, peroxides, carbonates, oxides of carbon and oxides of nitrogen, sulfur oxides and toxic gases.
- Reacts with most metals to produce hydrogen gas which can form an explosive mixture with air.
- 5.3 Advice for firefighters Evacuate area and fight fire from a safe distance.
- Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.
- Fire fighters must wear MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind.
- 6.2 Environmental precautions If product is released to the environment, take immediate steps to stop and contain



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- 6.3 Methods and material for containment and cleaning up
 Isolate area for at least 25-50 meters (80-160 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).
 Large Spills: Dike far ahead of spill to contain until disposal. Neutralize spill with a weak acid such as vinegar or acetic acid. Stop leak when safe to do so.
 Do not touch or walk through spilled material.
- 6.4 Reference to other sections
 Use proper protective equipment indicated in Section 8.

SECTION 7 – HANDLING AND STORAGE

- 7.1 Precautions for safe handling
 Store in original container.
 Do not inhale vapors or mists. Avoid skin or eye contact.
 Do not eat, drink or smoke in areas of use or storage.
- 7.2 Conditions for safe storage, including any incompatibilities
 Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers acids, metals, explosives and organic peroxides. Protect from freezing.
 Empty containers may contain product residue. Do not reuse without adequate precautions.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

8.1.1 Occupational exposure limits:

Chemical	Limit value – 8 hours		Limit value – Short term	
	ppm	mg/m ³	ppm	mg/m ³
<u>Sodium hydroxide:</u>				
OSHA	Not established	2	Not established	Not established
ACGIH	Not established	2 Ceiling	Not established	Not established

8.1.2 Currently recommended monitoring procedures: Not determined

8.1.3 Exposure guidelines for air contaminants, if any: Not determined

8.1.4 DNELs and PNECs for exposure scenarios: Not determined

8.1.5 Control banding for risk management: Not determined

8.2 Exposure controls:

Engineering controls: General or local exhaust ventilation and other forms of engineering controls are the preferred means for controlling exposures.

Respiratory protection: Under normal conditions of use, ventilation and engineering controls are sufficient. If irritation is evident, and/or a non-routine or emergency situation, a NIOSH/MSHA approved air purifying respirator with a HEPA cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by



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	air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Skin & body protection:	If skin contact is anticipated, protective clothing, including impervious gloves, should be worn. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield, or boots. Provide safety showers at any location where skin contact can occur. Use good personal hygiene.
Eye protection:	Wear approved chemical safety goggles and face shield. Have eye wash stations readily available where eye contact can occur.
Thermal hazards:	None
Environmental exposure controls:	None

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Amber to light brown liquid
Odor:	None
Odor threshold:	ND
pH:	12.00-12.85
Melting/freezing point	ND
Initial boiling point & boiling range:	ND
Evaporation rate:	ND
Flash point:	Does not flash
Flammability (solid, gas):	NA
Upper flammability or explosive limits:	NA
Lower flammability or explosive limits:	NA
Vapour pressure:	ND
Vapour density:	ND
Relative density:	1.130 – 1.200 @ 77 °F (25 °C)
Solubility(ies)	Soluble (water)
Partition coefficient:	ND
Auto-ignition temperature:	NA
Decomposition temperature:	ND
Viscosity:	ND
Explosive properties:	None
Oxidising properties:	None
Other:	
Density:	9.72 lbs/gal (1.165 g/cm ³)

9.2 Other information: None



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SECTION 10 – STABILITY AND REACTIVITY

- 10.1 Reactivity: Stable
- 10.2 Chemicals stability: Stable under normal conditions of use.
- 10.3 Possibility of hazardous reactions: Contact with metals such as aluminum, tin and zinc can generate hydrogen, a highly flammable gas.
- 10.4 Conditions to avoid: Corrosion of metal can occur at temperatures above 140°F (60 °C). Absorbs carbon dioxide from the air to form carbonates.
- 10.5 Incompatible materials: Incompatible with strong oxidizing agents & acids, chlorinated hydrocarbons, peroxides, tin, zinc, copper, bronze and brass. Generates heat when mixed with water or acids. See precautions under Section 7.
- 10.6 Hazardous decomposition products: Thermal decomposition may product CO_x NO_x, SO_x, NaO_x, peroxides, carbonates, and toxic fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Chemical	Oral LD ₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
Sodium hydroxide	325 mg/kg/bw	No data	No data
Tetrasodium ethylenediamine tetraacetate	1913 mg/kg/bw	> 5000 mg/kg/bw	No data
Gluconic acid	6.06 g/kg/bw	No data	No data

Category

Available data

- Acute toxicity: The criteria are not met based on available information.
- Skin/eye irritation: Based on available data the criteria are not met.
- Corrosivity: Corrosive to skin and eyes.
- Respiratory or skin sensitisation: Based on available data the criteria are not met.
- Germ cell mutagenicity: Data lacking.
- Carcinogenicity: This material contains trisodium nitrilotriacetate. IARC has determined that there is sufficient evidence for the carcinogenicity of trisodium nitrilotriacetate in experimental animals. (IARC Class 2B). NTP-listed carcinogen. OSHA-listed carcinogen. Although large dietary doses of trisodium nitrilotriacetate have caused urinary tumors in laboratory animals, there is little likelihood that it could cause cancer in humans, especially at subtoxic doses.
- Reproductive toxicity: This product contains EDTA, which may cause adverse reproductive and/or developmental effects. EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Exposures having no effect on the mother should have no effect on the fetus.
Pregnant women may be at an increased risk from exposure.
Consumption of alcoholic beverages may enhance toxic effects.
- Specific target organ effect – single exposure (STOT-SE): Data lacking
- Specific target organ effect – repeated exposure (STOT-RE): Data lacking
- Aspiration hazard: Data lacking

ROUTE OF ENTRY: Inhalation. Ingestion. Skin and eye contact.

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SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity:	Data lacking
12.2 Persistence and degradability:	Not determined
12.3 Bioaccumulative potential:	Not determined
12.4 Mobility in soil:	Not determined
12.5 Results of PBT and vPvB assessment:	Does not meet criteria
12.6 Other adverse effects:	None

SECTION 13 – DISPOSAL CONSIDERATIONS

This product, as supplied, when discarded or disposed of, is a hazardous waste according to Federal regulations (40 CFR 261) due to its corrosivity. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

In Canada, waste should be disposed of according to federal, state, provincial and local regulations.

SECTION 14 – TRANSPORT INFORMATION

US DOT

Proper Shipping Name	Corrosive liquid, Basic, Organic, N.O.S. (contains sodium hydroxide, tetrasodium ethylenediaminetetraacetate)
Class	8
UN Number	UN 3267
Packing Group	II
Environmental hazard	No

IMDG

Proper Shipping Name	Corrosive liquid, Basic, Organic, N.O.S. (contains sodium hydroxide, tetrasodium ethylenediaminetetraacetate)
Class	8
UN Number	UN 3267
Packing Group	II
Flashpoint	> 100°C
Marine pollutant	No

ICAO/IATA

Proper Shipping Name	Corrosive liquid, Basic, Organic, N.O.S. (contains sodium hydroxide, tetrasodium ethylenediaminetetraacetate)
Class	8
UN Number	UN 3267
Packing Group	II

Special precautions for user: None

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SECTION 15 – REGULATORY INFORMATION

Safety health and environmental regulations:

a. Federal regulations:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

This product, as supplied, contains sodium hydroxide, a Hazardous Substance as per 40 CFR Part 302.4. The reportable quantity for sodium hydroxide is 1000 pound(s). Any release of this product that results in a release of sodium hydroxide equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR Part 302.6 and 40 CFR 355.40, respectively. Failure to report may result in substantial civil and criminal penalties. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations.

This product does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

This product contains one or more components designated as hazardous substances or toxic pollutants pursuant to the Federal Clean Water Act (40 CFR 116.4 Table A; 40 CFR 401.15). Any unpermitted introduction of this product into a facility stormwater or wastewater discharge may constitute a violation of the Clean Water Act. Facilities must notify the appropriate permitting agency prior to introducing this product into the aforementioned discharges.

There may be specific regulations at the local, regional or site/provincial level that pertain to this product.

SARA TITLE III Ratings

Immediate hazard: Yes Delayed hazard: Yes Fire hazards: No
Pressure hazard: No Reactivity hazard: No

b. State regulations:

California Proposition 65: Based on available information this product does not contain any components or chemicals currently known to the State of California to cause cancer, birth defects or reproductive harm at levels which would be subject to Proposition 65. Reformulation, use or processing of this product may affect its composition and require re-evaluation.

PENNSYLVANIA: Non-hazardous ingredients present at >3%: Water, CAS# 7732-18-5.

c. International regulations

1. Canada

All ingredients are on the DSL or are not required to be listed on the DSL.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Classification: D2A, E

WHMIS Ratings:

Compressed Gas: No Flammable/Combustible: No Oxidizer: No Acutely Toxic: No
Other Toxic Effects: Yes Bio Hazardous: No Corrosive: Yes Dangerously Reactive: No



2. Globally Harmonized System (GHS) Classification and Labeling

GHS Signal Word: DANGER

GHS Pictograms: Corrosive, Health Hazard



GHS Hazard Classes and Hazard Statements:

Skin Corrosion/Irritation – Category 1	H314 – Causes severe skin burns and eye damage
Eye Corrosion/Irritation – Category 1	H318 – Causes serious eye damage
Carcinogenicity – Category 2	H351 – Suspected of causing cancer

GHS Precautionary Statements:



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- P201 – Obtain special instructions before use.
- P202 – Do not handle until all safety precautions have been read and understood.
- P264 – Wash thoroughly after handling
- P260 – Do not breathe dusts or mists.
- P264 – Wash thoroughly after handling.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P305 + P351 + P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 – Immediately call poison center/doctor.
- P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing Rinse skin with water/shower.
- P363 – Wash contaminated clothing before reuse.
- P304 + P340 – If INHALED: Remove person to fresh air and keep comfortable for breathing.
- P308 + P313 – If exposed or concerned: Get medical advice.
- P405 – Store locked up.
- P501 – Dispose of contents/container in accordance with local/regional/national regulations.

Note: Hazard and precautionary statement numbers are included here for reference and translation purposes only and do not need to be included on the final label.

SECTION 16 – OTHER INFORMATION

SDS Status: Version 5 Current version: January 7, 2015 Replaces version: May 22, 2008
Changes: Format; Section 2, 3, 4, 5, 8, 9, 11, 15, 16

NFPA 704 RATINGS

Health	3	Flammability	0	Reactivity	0	Special Hazards	-
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HMIS® RATINGS

Health	3*	Flammability	0	Reactivity	0	PPE	-
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RATING CODES[‡]: 0=slight; 1=mild; 2=moderate; 3=severe; 4=very severe; *=chronic hazard
[‡]Consult NFPA 704 and HMIS for full explanation of codes

KEY: DNEL = Derived No-Effect Level; IARC = International Agency for Research of Cancer; WEL = Workplace Exposure Limits; OEL = Occupational Exposure Limits; PBT = Persistent, Bioaccumulative, Toxic; PNEC = Predicted No-Effect Concentration; TWA = Time Weighted Average (8 hours); STEL = Short Term Exposure Limit (15 minutes); ppm = parts per million; NTP = National Toxicology Program; ACGIH = American Conference of Governmental Industrial Hygienists; vPvB = very Persistent, very Bioaccumulative; NFPA = National Fire Protection Association; HMIS = Hazardous Materials Information System

DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

For related trademark information, visit www.kochmembrane.com
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