Parker Hannifin Corporation
Sporlan Division
206 Lange Drive
Washington, MO 63090
U.S.A.

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier : **Foam-Max**

Product Code(s) : FM1 (P/N 475137)

Product Use : Refrigeration coil cleaner.

Chemical Family : Mixture.

Supplier's name and address:

Parker Hannifin Corporation - Sporlan Division

206 Lange Drive
Washington, MO, U.S.A.
63090

Manufacturer's name and address:

Refer to Supplier

Information Telephone # : (636) 239-1111

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:
Class E (Corrosive Material).

OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification:
Acute Health Hazard;
Chronic Health Hazard.

Emergency Overview : Light brown liquid. Pungent odour.
DANGER!
Contact with some reactive metals may produce flammable hydrogen gas. May be corrosive to metals. Corrosive material. Causes eye, skin and digestive tract burns. Severe respiratory irritant Could result in pulmonary edema (fluid accumulation).

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : If mists are formed, may cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, choking and wheezing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Skin : Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.

Eyes : Causes severe burns. Contact may lead to permanent injury and blindness.

Ingestion : May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

Effects of long-term (chronic) exposure

: Chronic skin contact with low concentrations may cause dermatitis.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: See ECOLOGICAL INFORMATION, Section 12.

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SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt.%
sodium hydroxide	1310-73-2	10.00 - 30.00
Tetrasodium EDTA	64-02-8	1.00 - 5.00
Potassium silicate	1312-76-1	0.50 - 1.50
C8-10 Alkylpolyglycoside	68515-73-1	0.50 - 1.50

SECTION 4 - FIRST AID MEASURES

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. Keep warm and in a quiet place. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.

Skin contact : Immediately remove contaminated clothing and shoes. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice. Wash contaminated clothing before re-use. Leather and shoes that have been contaminated with the solution may need to be destroyed.

Eye contact : Immediately flush eyes with running water for at least 20 minutes. Protect unharmed eye. Seek immediate medical attention/advice.

Ingestion : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice.

Notes For Physician : Immediate medical attention is required. Corrosive. Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

: Not flammable under normal conditions of handling. Closed containers are contained under pressure and may explode if exposed to excess heat for a prolonged period of time. Contact with metals may release small amounts of flammable hydrogen gas.

Flammability classification (OSHA 29 CFR 1910.1200)

: Non-flammable.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

: Not expected to be sensitive to mechanical impact or static discharge.

Suitable extinguishing media : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical. Some chemical extinguishing agents may react with this material.

Special fire-fighting procedures/equipment

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.

Hazardous combustion products

: Carbon oxides; Aldehydes; Hydrogen; silicon oxides; Sodium oxides.

NFPA Rating 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

: *Health:* 3 *Flammability:* 0 *Instability:* 1 *Special Hazards:* None.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : Restrict access to area until completion of clean-up. Keep all other personnel upwind and away from the spill/release. Individuals involved in the cleanup must wear appropriate personal protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Spill response/cleanup : Ventilate area of release. Stop the spill at source if it is safe to do so. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Recovered solutions can be carefully diluted with water and then neutralized with acids, such as acetic acid (vinegar) or hydrochloric acid. Flush any residue in the spill area with water. Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.

Prohibited materials : None known or reported by the manufacturer.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): sodium hydroxide (1000 lbs / 454 kg)

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures : Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Avoid contact with eyes, skin and clothing. Keep away from extreme heat and flame. Keep away from acids and other incompatibles. Always replace cap after use. Wash thoroughly after handling. Keep out of the reach of children.

Storage requirements : Store in a cool, dry, well ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking in the area. Inspect periodically for damage or leaks. Store in corrosion-resistant containers. Avoid contact with aluminum.

Incompatible materials : Acids; Strong oxidizing agents; Metals (e.g. tin, aluminum, zinc and alloys containing these metals).

Special packaging materials : Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Ingredients	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
sodium hydroxide	2 mg/m³ (Ceiling)	N/Av	2 mg/m³	N/Av
Tetrasodium EDTA	N/Av	N/Av	N/Av	N/Av
Potassium silicate	N/Av	N/Av	N/Av	N/Av
C8-10 Alkylpolyglycoside	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment. Use NIOSH/MSHA approved full-face respirator with an organic vapour cartridge if the recommended exposure limit is exceeded. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection : Wear impervious gloves, such as butyl rubber. Advice should be sought from glove suppliers.

Eye / face protection : Chemical splash goggles must be worn when handling this material. Do not wear contact lenses. A full face shield may also be necessary.

Other protective equipment : An eyewash station and safety shower should be made available in the immediate working area. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

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General hygiene considerations

: Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid.
Appearance : Light brown liquid
Odour : Pungent.
Odour threshold : N/Av
pH : >13.5
Boiling point : 109°C (228.9°F)
Specific gravity : 1.25
Melting/Freezing point : -5°C (23°F)
Coefficient of water/oil distribution : N/Av
Vapour pressure (mmHg @ 20° C / 68° F) : 13 @ 21.1°C (70°F)
Solubility in water : Complete
Vapour density (Air = 1) : N/Av
Evaporation rate (n-Butyl acetate = 1) : < 1
Volatile organic Compounds (VOC's) : N/Av
Volatiles (% by weight) : 80.9%
Flash point : >100°C (>212°F)
Flash point Method : Setaflash Closed Tester
Auto-ignition temperature : N/Av
Lower flammable limit (% by vol.) : N/Ap
Upper flammable limit (% by vol.) : N/Ap
Flame Projection Length : N/Ap
Flashback observed : N/Ap
Viscosity : < 5 cps
Absolute pressure of container : N/Ap

Section 10: Stability And Reactivity

Stability and reactivity : Stable at ambient temperatures and pressures. Closed containers may build up pressure when exposed to heat and flame. Contact with metals may release small amounts of flammable hydrogen gas. May be corrosive to Aluminum.

Hazardous polymerization : Hazardous polymerisation does not occur.

Conditions to avoid : Keep out of direct sunlight. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.

Materials To Avoid And Incompatibility : See Section 7 (Handling and Storage) for further details.

Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system and digestive system.

Routes of exposure : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
sodium hydroxide	N/Av	N/Av	N/Av
Tetrasodium EDTA	N/Av	1700 - 1913 mg/kg	N/Av
Potassium silicate	N/Av	5700 mg/kg	N/Av
C8-10 Alkylpolyglycoside	N/Av	> 2000 mg/kg	> 2000 mg/kg

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects : Not expected to cause reproductive effects.

Teratogenicity : Not expected to be a teratogen.

Mutagenicity : Not expected to be mutagenic in humans.

Epidemiology : Not available.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Synergistic materials : N/Av

Irritancy : Corrosive

other important hazards : None known or reported by the manufacturer.

Conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. This product contains the following substance which may also be hazardous for the environment: sodium hydroxide .
The acute toxicity of sodium hydroxide is (OECD SIDS):
Toxicity to daphnia - EC50/48h/daphnia = 40 mg/L
Toxicity is primarily associated with pH.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself.

Bioaccumulation potential : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal : Improper disposal can cause damage to the environment. Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14: TRANPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	UN1824	Sodium hydroxide solution	8	II	
49CFR/DOT Additional information	This material may be shipped as a limited quantity according to 49CFR section 173.154.				
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	8	II	
TDG Additional information	Within Canada, the Limited Quantity Exemption may apply for containers which hold specific quantities of the product. Under the TDGR, refer to section 1.17 for Limited Quantity Exemption information, if shipping under this exemption.				
ICAO/IATA	UN1824	Sodium hydroxide solution	8	II	
ICAO/IATA Additional information	May be shipped as a limited quantity according to IATA section 2.7.				

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): sodium hydroxide (1000 lbs / 454 kg)

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Acute Health Hazard. Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: sodium hydroxide (CA, MA, MN, NJ, PA, RI).

International Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

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

SECTION 16 - OTHER INFORMATION

HMIS Rating :

* - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: *3 *Flammability:* 0 *Reactivity:* 1

Legend :

ACGIH: American Conference of Governmental Industrial Hygienists
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References :

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2012.
2. International Agency for Research on Cancer Monographs, searched 2012.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases (Chempendium, HSDB and RTECs). (2012).
4. Material Safety Data Sheets from manufactuer.
5. US EPA Title III List of Lists (July 2011).
6. California Proposition 65 List (22 June 2012).

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Preparation Date (mm/dd/yyyy)

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