

MATERIAL SAFETY DATA SHEET

NFPA RATING: Health = 2 Flammability = 0 Reactivity = 0
HMIS RATING: Health = /2 Flammability = 0 Reactivity = 0

SECTION I -- IDENTITY AND MANUFACTURER'S INFORMATION (502N-42G)**Manufacturer's Name:** HILLYARD INDUSTRIES**Product Name:** TYPHOON**Address:** 302 North Fourth Street
St. Joseph, MO 64501**Date Prepared:** September 18, 2001**Prepared by:** Regulatory Affairs Department**Emergency Telephone No.:** (800) 424-9300 (Only in the event of chemical emergency involving a spill, leak, fire, exposure or accident involving chemicals.)**Other information calls:** (816) 233-1321 (Ext. 8285)**SECTION II -- INGREDIENTS/IDENTITY INFORMATION****Components****(Specific Chemical Identity:**

Common Name(s)	CAS#	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED	%
Dipropylene glycol methyl ether	34590-94-8	100ppm	100 ppm	STEL-150 ppm	8-13%
Water	7732-18-5	not established	not established	N/A	---
Linear primary alcohol ethoxylate	68439-46-3	not established	not established	N/A	---
Propylene glycol butyl ether	5131-66-8	not established	not established	N/A	---
Propylene Glycol N-Propyl Ether	1569-01-3	not established	not established	N/A	---
Didecyl dimethyl ammonium chloride	7173-51-5	not established	not established	N/A	---
n-Alkyl (C ₁₄ 50%, C ₁₂ 40%, C ₁₆ 10%)	8001-54-5	not established	not established	N/A	---
dimethyl benzyl ammonium chloride					
Lauramine oxide	1643-20-5	not established	not established	N/A	---
Tetrasodium Salt of EDTA	64-02-8	not established	not established	N/A	---

VOS (Concentrate) = 20% or 1.7 lbs./gallon; VOS (Diluted 1:12) = 1.54%

SECTION III -- PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point: corrected 206°F **Specific Gravity (H₂O = 1):** 25°C = 0.99 & 39°C = 0.99
Vapor Pressure (mm Hg.): 16.9 **Percent Volatile by Volume (%):** 86.54%
Vapor Density (AIR = 1): 1.6 **Evaporation Rate (ethyl ether = 1):** slower than 1
Solubility in Water: Complete **Appearance and Odor:** clear orange liquid; fresh & clean mint odor

pH (concentrate) = 10.74 – 11.74**SECTION IV -- FIRE AND EXPLOSION HAZARD DATA****Flash point:** None (Tag Closed Cup) **Flammable Limits:** LEL = N/A UEL = N/A**Extinguishing Media:** Foam, carbon dioxide, dry chemical, water spray.**Special Fire Fighting Procedures:** Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.**Unusual Fire and Explosion Hazards:** None known to manufacturer.**SECTION V -- PHYSICAL HAZARDS****Stability:** Stable **Conditions to Avoid:** N/A**Incompatibility (Materials to Avoid):** Do not mix with strong acids.**Hazardous Decomposition Products or Byproducts:** As with any organic material, combustion will produce carbon dioxide and carbon monoxide.**Hazardous Polymerization:** Will not occur **Conditions to Avoid:** N/A**SECTION VI -- HEALTH HAZARD DATA****Routes of entry:** Inhalation? Yes Skin? Yes Ingestion? Yes**HEALTH HAZARDS (1. Acute and 2. Chronic)**

1. When tested per the Federal Hazardous Substance Act, the concentrate was found to be a Primary Skin Irritant (concentrate induced crust formation in all six test subjects by day 7) and per this method concentrate was also found to be a primary eye irritant. (neovascularization was observed in all 6 test subjects by day 7). Concentrate induced mortality in one test subject; concentrate was estimated to have an acute oral LD50 of greater than 5 g./kg. When diluted 1:6 product was not acutely toxic to 10 test subjects following a one hour exposure at a nominal concentration of 52.7026 mg./L (actual concentration = 37.7248 mg./L.) This concentration was the maximum that could be generated with this test system. 2. None known to Hillyard.

SECTION VI -- HEALTH HAZARD DATA continued

Chemical listed as Carcinogen or Potential Carcinogen:

National Toxicology Program = No I.A.R.C. Monographs = No OSHA = No

This product has no carcinogens listed by IARC, NTP, NIOSH, or ACGIH as of this date, greater than or equal to 0.1%.

Signs and Symptoms of Exposure: May cause redness of eyes; prolonged contact may cause skin and eye burns with concentrate. Prolonged breathing of fine fog mist may cause nose, throat, and lung irritation.

Medical Conditions Generally Aggravated by Exposure: Repeated overexposure may cause defatting of skin and dermatitis.

Emergency and First Aid Procedures: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contact lenses then flush eyes with water again. Get medical attention. Wash clothing before reuse and thoroughly clean contaminated shoes before reuse. If swallowed, do not induce vomiting; immediately give large amounts of water and CALL A PHYSICIAN, hospital emergency room or poison control center. Inhalation -remove victim to fresh air; if respiratory tract remains irritated call a physician.

SECTION VII -- PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released Or Spilled: Absorb large spills with floor dry material (see disposal below). Small spills: Flush with water and pick up with mop or wet vacuum.

Waste Disposal Method: Dispose of in accordance with state or local regulations. Do not dispose of in storm drains or streams.

Precautions To Be Taken In Handling And Storing: Keep container closed when not in use. Since empty packages retain product residue, follow label warning even after package is empty. Spray mist may produce respiratory irritation or damage and increase susceptibility to respiratory illness.

Other Precautions: Do not get in eyes, on skin, or on clothing. USE ONLY WITH ADEQUATE VENTILATION. Avoid breathing vapors or spray mist. Open windows and doors, use exhaust fans or other means to insure fresh air entry during application and drying. Refer to OSHA STANDARD 29 CFR 1910.94 for technical guidelines on keeping air contaminants below acceptable exposure limits. Wash thoroughly after handling. Do not take internally. Keep container closed when not in use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

SECTION VIII -- CONTROL MEASURES

Respiratory Protection (Specify Type): Ventilate to keep air below TLV. A NIOSH approved respirator for organic vapor should be worn if needed to keep level below TLV.

Ventilation:

Local Exhaust = Recommended Mechanical (General) = Recommended Special = N/A

Other = N/A Eye Protection: Chemical safety goggles

Other Protective Clothing or Equipment: Impervious boots and aprons where splashing of concentrate is a problem; otherwise, use uniforms or coveralls.

Work / Hygienic Practices: Wash thoroughly after handling.

SECTION IX - TRANSPORTATION INFORMATION

Applicable regulations: 49 CFR = no; IMCO = no; IATA = no

Proper shipping name: Cleaning compound

UN NO.: not applicable **Limited Qty.:** not applicable **Hazard Class =** not applicable

Labels required: not required **DOT Exception:** not applicable

EPA Hazardous waste number / code: not listed

Hazardous waste characteristics:

Ignitability = not applicable; **Corrosivity =** not applicable; **Reactivity =** not applicable

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