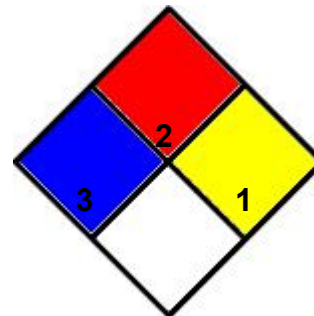


MATERIAL SAFETY DATA SHEET

NM-1132, NM-1133

COMPANY IDENTIFICATION

MANUFACTURER: Chem-Tech
400 Ternes Dr.
Random Lake, WI 53075



INFORMATION PHONE: 920-994-2299
EMERGENCY: 1-800-255-3924
HMIS **HEALTH:** 3 **FLAMMABILITY:** 2 **REACTIVITY:** 1 **PROTECTIVE:** G

SECTION I - PRODUCT IDENTIFICATION

PRODUCT: NM-1132, NM-1133

PREPARED BY: Jason Sprang

DATE PREPARED: 2/28/2007

LAST REVISION: 9/1/2010

HAZARD CLASS: 3, 8

UN: 2924

PACKING: III

GUIDE NUMBER: 154

SHIPPING NAME: Flammable liquids, corrosive, N.O.S.,
(Morpholine, Cyclohexylamine)

SECTION II - HAZARDOUS INGREDIENTS

| <u>Chemical Name</u> | <u>%</u> | <u>CAS #</u> | <u>OSHA PEL</u> | <u>ACGIH TLV</u> |
|----------------------|----------|--------------|-----------------|------------------------|
| MORPHOLINE | 8-10 | 11-09-18 | PEL = 20 PPM | TWA: 20 PPM; 71 MG/M3 |
| CYCLOHEXYLAMINE | 16-2 | 108-91-8 | N/A | TWA: 10 PPM; 41 MG/M3. |

SECTION III - PHYSICAL CHARACTERISTICS

BOILING POINT: 212°F

SPECIFIC GRAVITY: .96-.99

VAPOR PRESSURE: 1 mm

MELTING POINT: N/A

EVAPORATION: N/A

VAPOR DENSITY: N/A

PH: 12.2

SOLUABILITY IN WATER: Soluble

APPEARANCE AND ODOR: Clear liquid, strong fishy odor.

SECTION IV - FIRE/EXPLOSION

FLASH POINT: > 200°F

LEL: 11.2 %

UEL: 1.4%

EXTINGUISHING MEDIA: Use media which is safe for surrounding fire.

SPECIAL FIRE FIGHTING: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When heated to its flash point, this material may emit explosive vapors.

SECTION V - REACTIVITY DATA

STABLE: Stable

INCOMPATIBILITY: Strong acids metals, Nitro compounds, and oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS: Unknown

HAZARDOUS POLYMERIZATION: N/A

SECTION VI - HEALTH HAZARD DATA

ACUTE HEALTH EFFECTS

EYE CONTACT: Corrosive to the eyes and may cause severe damage including blindness.

INHALATION: The vapor is highly discomforting to the upper respiratory tract and may be harmful if inhaled. Prolonged overexposure may cause headache, nausea, vomiting, fatigue, weakness, drowsiness and collapse. Severe overexposure may result in unconsciousness and coma. Extreme overexposure may result in death. High concentrations may cause pulmonary edema after several hours delay.

INGESTION: Corrosive and may cause severe and permanent damage to mouth, throat, and stomach.

SKIN CONTACT: The material is corrosive to the skin and may cause chemical burns. Toxic effects may result from skin absorption. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling (edema) which may progress to vesiculation, scaling and thickening of the epidermis.

SIGNS AND SYMPTOMS OF EXPOSURE: Shortness of breathing, confused behavior, redness of skin, swelling of tissues, watery eyes, nausea.

SUPPLEMENTAL HEALTH INFORMATION: WARNING! This product contains Morpholine which is a known mutagenic substance. The material may accumulate in the human body and progressively cause tissue damage. Long-term exposure to Morpholine can produce liver and kidney damage. Obvious evidence of chronic nasal irritation and inflammation and ocular injury (including retinal degeneration, corneal irritation, uveitis and corneal damage) has been documented in rats exposed to 150 ppm, 6 hours/day, and 5 days/week for 104 weeks. Earlier reports linking exposure to Morpholine with an increased incidence of hepatocellular carcinoma and pulmonary angiosarcoma probably resulted from exposure to the carcinogenic contaminant, N-nitrosomorpholine. It must be noted however that there is potential to convert Morpholine in the body to N-nitrosomorpholine. Secondary amines may react in the acid conditions of the stomach with endogenous nitrites or nitrites found in various food-stuffs (as anti-oxidants or preservatives) to form potentially carcinogenic N-nitrosamines. The formation of nitrosamines from such amines has not only been observed in animal models but, at least for certain compounds, in the workplace. The amine-containing substances and end products handled at work can themselves be contaminated to a degree with corresponding nitrosamines. **CYCLOHEXYLAMINE** has produced embryo toxicity, low birth count, and postnatal mortality.

EMERGENCY FIRST AID PROCEDURES

EYE CONTACT: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

INHALATION: Remove to fresh air. Monitor patient and call emergency personnel if necessary.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED: Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

WASTE DISPOSAL METHOD: The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

OTHER PRECAUTIONS: Keep ignition sources away from this product. Do not smoke near this product. Keep all drum closures tight and secure.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION: A NIOSH approved respirator with a multi gas cartridge is required when using this product.

VENTILATION: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits.

PROTECTIVE GLOVES: North brand Silver shield, or butyl gloves are required for this product.

EYE PROTECTION: Safety glasses with side shields (or goggles) and a face shield.

OTHER PROTECTIVE CLOTHING: Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK / HYGENIC: Use good personal hygiene when handling this product. Wash hands after use, before smoking, or using the toilet.