1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: **MS-111**
Epoxy Stripping Agent

Product Use: Epoxy Stripper

MANUFACTURER/SUPPLIER:

Miller-Stephenson Chemical
55 Backus Ave.
Danbury, Conn. 06810 USA
(203) 743-4447

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
Acute Toxicity (Oral): Category 4
Skin Corrosion/Irritation: Category 1A
Serious Eye Damage/Eye Irritation: Category 1
Specific Target Organ Toxicity: Category 3 (Respiratory System) Single Exposure

Label elements:
Signal word
Danger

Pictograms

Hazard Statements
Causes skin burns and eye damage.
Harmful if swallowed.
May cause respiratory irritation.

Precautionary Statements
Wear protective gloves, eye of face protection and protective clothing.
Avoid breathing fumes.
Use in a well-ventilated area or outdoors.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician
IF SWALLOWED: Immediately call a POISON CENTER or physician if you feel unwell. Rinse mouth. DO NOT induce vomiting.
IF ON SKIN (or hair): Take off contaminated clothing. Rinse skin with water and shower. Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
Storage: Store in cool dry place. Do not permit fumes to be in contact with high heat.
Disposal: Dispose of contents and containers in accordance with all local, regional, and international regulations.
Supplemental label elements: Do not taste or swallow. Wash thoroughly after handling.
Hazards not otherwise classified: Causes sever digestive tract burns.

3. INGREDIENTS

Material (s)	CAS No.	Approximate %
Methylene Chloride	75-09-2	>50
Formic Acid	64-18-6	<20
Phenol (Carbolic Acid)	108-95-2	<15
Trade Secret Ingredients		Balance

4. FIRST AID MEASURES

Inhalation: Get medical attention immediately. Remove patient to fresh air and keep in a restful position comfortable for breathing.

Eye: Get medical attention immediately. Small amounts splashed into eyes can cause irreversible tissue damage and blindness. Immediately flush with large amounts of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Protect unharmed eye. Continue rinsing eye during transport. If eye irritation persist, consult a specialist.

Skin: Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin rinse well with plenty of water. If on clothes, remove clothes. Clean shoes thoroughly before reuse.

Oral: Get medical attention immediately. **DO NOT INDUCE VOMITING.** Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital

5. FIRE FIGHTING MEASURES

Flash Point: None to boiling point of 104^{O}F

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media: High volume water jet.

Specific hazards arising from the chemical: Do not allow run-off from fire fighting to entire drains or water courses.

Hazardous decomposition products: Carbon dioxide, carbon monoxide, smoke, phosphorus compounds, chlorine compounds.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special Fire Fighting Instructions: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode, if necessary. Collect contaminated fire extinguishing water separately. This must not be discharged in to drains. This must be collected and disposed of properly.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors.

For Emergency Responders: Wear self-contained breathing apparatus for firefighting if necessary.

Environmental Precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do. If the product contaminates rivers and lakes or drains inform the respective authorities.

Spill: Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling: Avoid formation of respirable particles. Do not breathe vapors. Avoid exposure – obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Storage Conditions: Keep container tightly closed dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations/working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	TLV (ACGIH)
Methylene Chloride	50 ppm TWA
Formic Acid	5 ppm TWA
Phenol (Carbolic Acid)	5 ppm TWA

Ventilation System: Local and/or general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection: If adequate ventilation is not available a respirator with an approved respirator must be worn. In confined areas, use a self-contained breathing apparatus.

Eye Protection: Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection: Prolonged or repeated skin contact is likely, appropriate protective gloves, apron etc…should be used. Selection of protective clothing depends on work conditions, potential exposure conditions and may include gloves, boots, suits and other protective items.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 104^{O}F/40^{O}C

Density: NA

Vapor Density (Air=1): 2.93 at 68^{O}F/20^{O}C

pH Information: Not available

Form: Liquid

Color: Clear

Percent Volatile by Volume: Not available

Vapor Pressure: 340 mmHg at 68^{O}F/20^{O}C

Solubility in H_2O: Appox. 14%

Evaporation Rate (BU-AC=1): 0.07

Appearance: Clear volatile liquid

Odor: Sharp acid odor

10. STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Material and Conditions to Avoid: Acids and bases. Organic materials. Oxidizing agents.

Decomposition: Carbon dioxide and carbon monoxide and unburned hydrocarbons (smoke).

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Methylene Chloride

Acute Oral: LD50 > 2,000 mg/kg in rats.
Acute Dermal: LD50 > 2,000 mg/kg in rats.
Acute Inhalation: LD 50: 52,000 mg/m3 in rats.
Skin corrosion/irritation: Skin – Rabbit, 24h, Irritating to skin (Draize Test).
Serious eye damage/eye irritation: Eyes – Rabbit, 24h, Irritating to eyes (Draize Test)
Skin and respiratory sensitization: No data available.
Germ cell mutagenicity: Rat – DNA damage
Carcinogenicity: Carcinogenicity - Rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Endocrine:Tumors. Limited evidence of carcinogenicity in animal studies Suspected human carcinogens. OSHA: OSHA specifically regulated carcinogen (Methylene chloride).

Reproductive toxicity: No data available
Specific target organ toxicity - single exposure:
May cause respiratory irritation. May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure:
Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system
Oral - May cause damage to organs through prolonged or repeated exposure. - Liver, Blood
Aspiration hazard: No data available

Methylene Chloride is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood., Acts as a simple asphyxiant by displacing air., anesthetic effects, Difficulty in breathing, Headache, Dizziness, Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Effects due to ingestion may include:, Gastrointestinal discomfort, Central nervous system depression, Paresthesia., Drowsiness, Convulsions, Conjunctivitis., Pulmonary edema. Effects may be delayed., Irregular breathing., Stomach/intestinal disorders, Nausea, Vomiting, Increased liver enzymes., Weakness, Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material., Abdominal pain To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Phenol:

Acute toxicity: No data available
Skin corrosion/irritation: No data available
Serious eye damage/eye irritation: No data available
Skin and respiratory sensitization: No data available
Germ cell mutagenicity: No data available
Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP and OSHA.
Reproductive toxicity: No data available
Specific target organ toxicity - single exposure: No data available
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea.

Formic Acid:

Acute Oral: LD50: 730mg/kg in rats
Acute Inhalation: Oral 4 hour LD50: 7.4 mg/l in rats
Acute Dermal: No data available
Skin corrosion/irritation: Skin – Rabbit, Irritating to skin (Draize Test).
Serious eye damage/eye irritation: Eyes – Rabbit, Severe eye irritation
Skin and respiratory sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.
Germ cell mutagenicity: No data available
Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP and OSHA.
Reproductive toxicity: No data available
Specific target organ toxicity - single exposure: No data available
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Methylene Chloride
Toxicity
Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h
NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h
Persistence and degradability:
Biodegradability Result: < 26 % - Not readily biodegradable. (OECD Test Guideline 301C)
Bioaccumulative potential: Does not bioaccumulate..
Mobility in soil: No data available
Results of PBT and vPvB assessment:
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Phenol:
No data available

Formic Acid:
Toxicity:
48 hour EC50 in daphnia magna: 34.2 mg/l
96 hour LC50 in Leuciscus idus (Golden orfe): 46 – 100mg/l
Persistence and degradability:
Biodegradability: Result: > 90 % - Readily biodegradable (OECD Test Guideline 301C)
Biochemical Oxygen Demand (BOD): 86 mg/g
Chemical Oxygen Demand (COD): 348 mg/g
Ratio BOD/ThBOD: 8.60%
Bioaccumulative potential: Bioaccumulation is unlikely.
Mobility in soil: No data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects: Harmful to aquatic life.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

U.S. DOT
Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Methylene Chloride, Formic Acid, Phenol)
Hazard Class: 8, Sub Risk 6.1
Identification No. UN2922
Packing Group: III

IATA
Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Methylene Chloride, Formic Acid, Phenol)
Hazard Class: 8, Sub Risk 6.1
Identification No. UN2922
Packing Group: III

IMDG
Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S. (Methylene Chloride, Formic Acid, Phenol)
Hazard Class: 8, Sub Risk 6.1
Identification No. UN2922
Packing Group: III

15. REGULATORY INFORMATION

TSCA: All ingredients are listed in TSCA inventory.

California Proposition 65: This product contains a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm.

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health	- 3
Flammability	- 0
Reactivity	- 1

Personal Protective rating to be supplied by user depending on the conditions.

FOR INDUSTRIAL USE ONLY

REVISION DATE: MAY 2017