



1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-132FE
J0806A-1
Release Agent

Product Use: Release Agent

MANUFACTURER/DISTRIBUTOR:

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

Emergency Phone Number:
(800) 424-9300

2. HAZARDS IDENTIFICATION

Physical Hazard: Gases under pressure – Liquefied Gas

Label elements:



Single Word: Warning

Hazard Statements

Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements

Protect from sunlight.
Store in a well-ventilated place.
Pressurized container. Do not pierce or burn, even after use.

Other Hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Misuse or intentional inhalation abuse may lead to death without warning symptoms, due to cardiac effects. Rapid evaporation of the product may cause frostbite.

3. INGREDIENTS

| <u>Material (s)</u> | <u>CAS No.</u> | <u>Approximate %</u> |
|---------------------------|----------------|----------------------|
| 1,1,1,2 Tetrafluoroethane | 811-97-2 | 90 – 96 |
| Methanol | 67-56-1 | 3 – 5 |

4. FIRST AID MEASURES

Inhalation: If inhaled, immediately remove to fresh air. Get medical attention if symptoms occur.

Eye: In case of contact, flush eyes with water. Get medical attention if irritation develops and persists.

Skin: Wash skin with water and soap after contact. Get medical attention if symptoms occur.

Oral: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

Most important symptoms/effects, acute and delayed: May cause cardiac arrhythmia.

Other symptoms potentially related to misuse or inhalation abuse: Cardiac sensitization, Anaesthetic effects, Light-headedness, Dizziness, Confusion, Lack of coordination, Drowsiness, Unconsciousness.

Contact with liquid or refrigerated gas can cause cold burns or frostbite.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: This product is not flammable.

Test Method: Ignition distance test and Enclosed space ignition test

Extinguishing media: Use the media appropriate for surrounding materials.

Fire and Explosion: Aerosol cans may rupture under fire conditions.

Special hazards: Aerosol cans may rupture under fire conditions Exposure to combustion products may be hazardous to health. Hazardous combustion products: Hydrogen fluoride, Carbonyl fluoride, Carbon oxides.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate personnel to safe areas. Cool containers with water spray. Fight fire remotely due to risk of explosion.

Protective Equipment for Fire-Fighters: Self-contained breathing apparatus if necessary. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Aerosols can explode when heated. Ventilate area. Warn personnel of this hazard and unprotected personnel should not return until safe to do so. Follow safe handling advice and personal protective equipment recommendations. Avoid skin contact with leaking liquid (danger of frostbite).

Environmental Precautions: Prevent further leakage or spillage, if safe to do so.

Methods and materials for containment and clean up: Ventilate area. Local and national regulations may apply to releases and disposal of this material.

7. HANDLING AND STORAGE

Handling: Avoid inhalation of vapors. Use in a well-ventilated area to keep employee exposure below recommended limits. Use an approved respirator if necessary. Avoid contact with naked flames and hot surfaces as toxic decomposition products can be formed. Do not get in eyes or on skin.

Storage Conditions: Store in a clean, dry place, not near sources of heat, in direct sunlight or where temperatures exceed 122°F/50°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| <u>Exposure Limits:</u> | <u>TLV(ACGIH)</u> | <u>PEL (OSHA)</u> | <u>US WEEL</u> |
|---------------------------|-------------------|--------------------|----------------|
| Methanol | 200 ppm. TWA | 200 ppm, 8 Hr, TWA | |
| 1,1,1,2-Tetrafluoroethane | None established | None established | 1000 ppm (TWA) |

Engineering Measures: Use adequate ventilation. Vapors are heavier than air and if working in confined or poorly ventilated areas, proper respiratory protection must be used to prevent exceeding the exposure limit.

Respiratory Protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Eye Protection: Avoid eye contact. Use chemical goggles or safety glasses with side shields.

Skin Protection: Avoid contact with skin. Use gloves impervious to this material. For special applications, we recommend clarifying the resistance to chemicals of the afore mentioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often.

Hygiene Measures: Good personal hygiene practices are always advisable. Do not eat, drink, or smoke when using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable

Percent Volatile by Volume: 99%

Density of Coating: 1.06 g/cc at 77°F/25°C

Vapor Pressure: 96 psia at 77°F/25°C

pH Information: Neutral

Evaporation Rate (CCl4=1): N.A.

Form: Liquid

Appearance: Clear

Color: Colorless

Odor: Faint alcohol

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable if used as directed. Follow precautionary advice and avoid incompatible materials and conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents.

Material and Conditions to Avoid: Heat, flames and sparks. Oxidizing agents.

Decomposition: No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

1,1,1,2-Tetrafluoroethane

Acute Inhalation toxicity:

4 hour, LC50 rat: >567000 ppm

Skin Corrosion/Irritation: Not classified based on available information.

Serious Eye Irritation/ Eye Irritation: Not classified based on available information.

Skin Sensitization: Not classified based on available information.

Respiratory Sensitization: Not classified based on available information

Germ Cell Mutagenicity: Not classified based on available information.

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Not classified based on available information.

STOT-single exposure: Not classified based on available information.

STOT-repeated exposure: Not classified based on available information.

Aspiration toxicity: Not classified based on available information

Methanol

Inhalation Acute toxicity: 3mg/l, 4 hours, animals (unspecified species)

Dermal Acute toxicity: 300 mg/kg, (estimated in humans)

Oral Acute Toxicity: 300 mg/kg, (estimated in humans)

Skin Corrosion/Irritation: No irritation, Rabbit

Serious Eye Irritation/ Eye Irritation: No irritation, Rabbit

Skin sensitization: Not classified based on available information.

Respiratory Sensitization: Not classified based on available information.

Germ Cell Mutagenicity: Genotoxicity in vivo and vitro tests were negative.

Carcinogenicity: Not classified based on available information.

Reproductive Toxicity: Not classified based on available information.

STOT-single exposure: May cause damage to organs (Eyes, Central Nervous System)

STOT-repeated exposure: NOEL (90 days, Inhalation) in rats: 1.06 mg/l

Aspiration toxicity: Not classified based on available information.

Oral: LD50: 1187 - 2769 mg/kg in rats

12. ECOLOGICAL INFORMATION

Ecotoxicity

1,1,1,2-Tetrafluoroethane

96 hour LC50 in *Oncorhynchus mykiss* (rainbow trout): 450 mg/l

48 hour EC50 in *Daphnia magna* (Water flea): 980 mg/l

96 hour ErC50 (algae): 142 mg/l

72 hour NOEC in *Pseudokirchneriella subcapitata* (green algae): 13.2 mg/l

Biodegradability: Not readily biodegradable.

Bioaccumulative potential: Partition coefficient: n-octanol/water: log Pow: 1.06

Mobility in soil: No data available

Other adverse effects

Results of PBT and vPvB assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Methanol

96 hour LC50 in *Lepomis macrochirus* (Bluegill sunfish): 15,400 mg/l

48 hour EC50 in *Daphnia magna* (Water flea): >10,000 mg/l

96 hour EC50 in *Pseudokirchneriella subcapitata* (Green algae): 22,000 mg/l

200 hour NOEC in *Oryzias latipes* (Orange-red killfish): 15,800 mg/l

Biodegradability: Readily biodegradable. 95% biodegradable in 20 days

13. DISPOSAL CONSIDERATIONS

Do not puncture or incinerate cans. Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

U.S. DOT

Proper Shipping Name: Consumer Commodity

Hazard Class: ORM-D

Identification No. None

Packing Group: None

IATA

Proper Shipping Name: Aerosols, Non-Flammable

Hazard Class: 2.2

Identification No. UN1950

Packing Group: None

IMDG

Proper Shipping Name: Aerosols, Non-Flammable

Hazard Class: 2.2

Identification No. UN1950

Packing Group: None

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS:

TSCA: All ingredients are listed in TSCA inventory.

CERCLA Reportable Quantity: Methanol, 67-56-1: Component RQ is 5000 lbs.

SARA 304 Extremely Hazardous Substances Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity: This material does not contain any components with a section 302 EHS RQ.

SARA 311/312 Hazards: Gases under pressure. Simple Asphyxiant.

SARA 313: Methanol

California Proposition 65: This product contains Methanol, known to the State of California to cause birth defects or other reproductive harm.

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health - 1

Flammability - 0

Reactivity - 2

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: NOVEMBER 2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.