



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.

Precautionary Statements:

Avoid breathing spray.
Wash skin thoroughly after handling.
Use in a well-ventilated area.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Do not spray on an open flame or other ignition source
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Other Hazards: Thermal decomposition can lead to release of toxic and corrosive gases. Contact with liquefied gas might cause frostbite. May cause irritation, redness, itching and discomfort. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

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
1-Propene,1,1,2,3,3,3-hexafluoro-, oxidized, polymd., reduced, hydrolyzed	161075-14-5	< 1.0
Tert-butyl alcohol	75-65-0	< 0.5

4. FIRST AID MEASURES

Inhalation: If high concentrations are inhaled, immediately remove patient to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Get medical attention immediately.

Eye: Remove contact lenses, if present and easy to do. Immediately flush with large amounts of water for at least 15 minutes, lifting eyelids. Get medical attention.

Skin: Flush promptly with plenty of warm water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if necessary. Treat for frostbite if necessary by gently warming affected area.

Oral: Is not considered a potential route of exposure. DO NOT INDUCE VOMITING without medical advice. Immediately rinse mouth and drink plenty of water. Call a physician immediately.

Notes to Physician: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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.

Hazardous decomposition products: In case of fire, toxic gases (CO, CO₂) along with Hydrogen halides, Hydrogen fluoride and Carbonyl halides may form.

Specific Hazards: The product is not flammable, but vapors may form flammable mixture with air. Avoid contact with flame and hot surfaces because can burst and toxic decomposition products may form. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Protective Equipment for Fire-Fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Aerosols can explode when heated. Warn personnel of this hazard and unprotected personnel should not return until safe to do so. Ventilate area. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Avoid inhalation of vapors. Use an approved respirator if needed to keep exposure levels below the accepted level.

Environmental Precautions: Prevent further leakage or spillage, if safe to do so. Should not be released to the environment. Do not flush into surface water or sanitary sewer system.

Spill Clean Up Methods: Extinguish all ignition sources. Avoid sparks, flames, and heat. Ventilate. Soak up with inert material (sand, earth) and place in a container for disposal according to local/national regulations.

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. Vapors are heavier than air and accumulate in low areas. 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>AEL*(DuPont)</u>
Methanol	200 ppm. TWA	200 ppm, 8 Hr, TWA	200 ppm, 8 & 12 Hr. TWA, Skin
1,1,1,2-Tetrafluoroethane	None established	None established	1000 ppm

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which is lower than the AEL are in effect, such limits shall take precedence.

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: Mechanical ventilation, or respiratory protection with air supply should be used in low or enclosed areas. In poorly ventilated areas, or if a large release occurs, use an approved self-contained breathing apparatus (SCBA).

Eye Protection: Wear approved safety goggles.

Skin Protection: Avoid contact with skin (danger of frostbite). Wear cold insulating gloves/face shield/eye protection, if necessary. Use protective gloves when prolonged or frequently repeated contact occurs.

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

Stability: Stable under normal conditions.

Material and Conditions to Avoid: Avoid open flames and hot surfaces as corrosive and toxic decomposition products can be formed.
Alkali metals, Alkaline earth metals, Powdered metals

Decomposition: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc) forming halogenated compounds, Hydrogen fluoride, Carbon monoxide, Carbon dioxide.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

1,1,1,2 Tetrafluoroethane

Inhalation: 4 hour, LC50 rat: >500000 ppm

Sensitization: Cardiac sensitization

Species: Dogs

Note: No-observed-effect level 50 000 ppm Lowest observable effect level 75 000

Repeated dose toxicity: Species: rat, NOEL: 40000ppm

Genotoxicity in vitro: Note: In vitro tests did not show mutagenic effects

Other Health Effects: This substance has no evidence of carcinogenic properties

Methanol

Inhalation: 4 hour LC50: 1282 mg/l in rats

Inhalation of high airborne concentrations can also irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and even death. NOTE: Odor threshold of methanol is several times higher than the TLV-TWA. Depending upon severity of poisoning and the promptness of treatment, survivors may recover completely or may have permanent blindness, vision disturbances and/or nervous system effects. Concentrations in air exceeding 1000 ppm may cause irritation of the mucous membranes.

Dermal: LD50: 17,000 mg/kg in rabbits

Moderately irritating to the skin. Can be absorbed through the skin and harmful effects have been reported by this route of entry. Effects are similar to those described in "Inhalation".

Eyes: Methanol is a mild to moderate eye irritant. High vapour concentration or liquid contact with eyes causes irritation, tearing and burning.

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

Swallowing even small amounts of methanol could potentially cause blindness or death. Effects of sub lethal doses may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity.

Teratogenicity: Methanol has produced fetotoxicity in rats and teratogenicity in mice exposed by inhalation to high concentrations of methanol vapors.

Reproductive Toxicity: May cause reproductive toxicity (developmental endpoint).

Synergistic Products: In animals, high concentrations of methanol, can increase the toxicity of other chemicals, particularly liver toxins like carbon tetrachloride. Ethanol significantly reduces the toxicity of the methanol because it competes for the same metabolic enzymes, and has been used to treat methanol poisoning.

12. ECOLOGICAL INFORMATION

1,1,1,2 Tetrafluoroethane

Ecotoxicity: There is no data on the ecotoxicity of this product.

Additional ecology information: Accumulation in aquatic organisms is unlikely. The product contains greenhouse gases which may contribute to global warming.

Methanol

96 hour LC50 – Fish: 15400 – 29400 mg/l

48 hour EC50 – Daphnia: > 10000 mg/l

72 hour IC50 – Algae: ca. 22000 mg/l *Selenastrum carpicornutum* (*Pseudokichnerela subcapitata*)

13. DISPOSAL CONSIDERATIONS

Do not puncture or incinerate cans. Empty aerosol cans before disposal. Comply with Federal, State/Provincial and Local regulations. Remove to a permitted waste disposal facility.

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

U.S. Federal Regulations

TSCA: All ingredients are listed in TSCA inventory.

State Regulations (U.S.)

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 - 1

Flammability - 0

Reactivity - 1

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: FEBRUARY 2016

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.