miller-stephenson

Material Safety Data Sheet

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-122AX
DPMS B0216A
PTFE Release Agent/Dry Lubricant

Product Use: Release Agent or Dry Lubricant

MANUFACTURER/DISTRIBUTOR:

Miller-Stephenson Chemical
George Washington Highway
Danbury, Conn. 06810 USA
(203) 743-4447

Date Revised: February 2008

Emergency Phone Number:
(800) 424-9300

2. INGREDIENTS

Material (s)	CAS No.	Approximate %
1,1,1,2-Tetrafluoroethane	811-97-2	86 - 94
Isopropyl Alcohol	67-63-0	5 - 15
Tetrafluoroethylene Telomer	65530-85-0 9002-84-0	1 - 2

3. HAZARDS IDENTIFICATION

Milky, white, liquid with a faint ethereal odor, packaged in an aerosol container.

Potential Health Effects

1,1,1,2-Tetrafluoroethane

1,1,1,2-tetrafluoroethane is untested for skin and eye irritation, and is untested for animal sensitization. No toxic effects were seen in animals from exposure by inhalation to concentrations up to 81,000 ppm. Lethargy and rapid respiration were observed at a vapor concentration of 205,000 ppm and pulmonary congestion, edema, and central nervous system effects occurred at a vapor concentration of 750,000 ppm. Cardiac sensitization occurred in dogs at 75,000 ppm from the action of exogenous epinephrine. No adverse effects were observed in male and female rats fed 300 mg/kg/day of tetrafluoroethane for 52 weeks. Animal testing indicates that this compound does not have carcinogenic, or mutagenic effects. Embryotoxic activity has been observed in some animal tests but only at maternally toxic dose levels.

Tetrafluoroethylene Telomer

Inhalation of PTFE dust may cause generalized irritation of the nose, throat, and lungs with cough, difficulty in breathing or shortness of breath. Inhalation of fluorine compounds released as decomposition products above 290°C (554°F) may cause lung irritation and pulmonary edema, which require medical treatment. Inhalation of fumes or smoke from overheated or burning Poly-TFE may cause polymer fume fever, a temporary flu-like illness accompanied by fever, chills, and sometimes cough, of approximately 24 hour in duration. Repeated episodes of polymer fume fever may cause lung damage.

Isopropyl Alcohol

Short-term overexposure of Isopropyl Alcohol by inhalation may cause irritation of the nose and throat with sneezing, sore throat or runny nose. Repeated and/or prolonged skin contact with Isopropyl Alcohol may cause defatting of the skin with itching, redness or rash. There are inconclusive or unverified reports of human sensitization. Contact with the vapor or aerosol may cause eye irritation with tearing, pain or blurred vision. Ingestion of Isopropyl Alcohol may cause irritation of the digestive tract with stomach pain, heartburn, nausea, vomiting or diarrhea; however there may be no symptoms at all. Immediate effects of inhalation, ingestion or skin contact with Isopropyl Alcohol may include non-specific effects such as headache, nausea and weakness; flushing of the face; and low blood pressure. Repeated and/or prolonged exposure may cause central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Gross overexposure may cause fatality.

4. FIRST AID MEASURES

Inhalation: Remove patient to fresh air. If not breathing, give artificial respiration. Give oxygen as necessary, if qualified personnel is available. Get medical attention if necessary.

Eye: Flush with large amounts of water for at least 15 minutes, lifting eyelids until no evidence of the chemical remains. Get medical attention if necessary.

Skin: Wash skin with water after contact. Wash contaminated clothing before use. Get medical attention if necessary.

Oral: If swallowed, do not induce vomiting, because the hazard of aspirating the material into the lungs is considered greater than swallowing it. Get medical attention.

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

Flash Point: Non-flammable as described in 16CFR 1500.45. **Method:** N.A.

Autoignition Temperature: Not Determined **Flammable Limits in Air, % by Vol.:** Not determined

Autodecompostion Temperature: Not Determined

Fire and Explosion: Aerosols may rupture under fire conditions. Decomposition may occur.

Extinguishing Media: As appropriate for combustibles in area.

Special Fire Fighting Instruction: Use water spray to cool containers. Self-contained breathing apparatus (SCBA) maybe required if a large amount of material is spilled under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area with fresh air and remove all ignition sources, if a large amount is accidental released. No need for additional release information, since it is an aerosol.

7. HANDLING AND STORAGE

Handling: Use in a well-ventilated area to avoid breathing vapors. Vapors are heavier than air and accumulate in low areas. Use only with adequate ventilation. Where ventilation is inadequate, use appropriate respiratory protection. Avoid contact with skin or eyes. Wash thoroughly after handling. Fluorotelomer should not be handled around tobacco products. The inhalation of vapors in the presence of tobacco products will cause polymer fume fever.

Storage Conditions: Do not store near sources of heat, in direct sunlight or where temperatures exceed 120^{o}F/49^{o}C. Rotate stock to shelf life of one year.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	STEL(ACGIH)	TWA (OSHA)	AIHA(WEEL)
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	1000 ppm (DuPont)
Isopropyl Alcohol	400 ppm	400 ppm	

Respiratory Protection: Avoid breathing vapors, mists or spray. Use with sufficient ventilation especially for enclosed or low places. Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection. If necessary to keep exposure limits below permissible limits, use NIOSH approved respirators, such as an air-purifying respirator with organic cartridges. In poorly ventilated areas, use an approved self-contained breathing apparatus.

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 when prolonged or frequently repeated contact occurs.

Prevention of Swallowing: Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not Applicable

Percent Volatile by Volume: 99%

Density: 1.2 g/cc at 77°F/25°C

Vapor Pressure: 80 psig at 70°F/21°C

Vapor Density (Air=1): >1

Solubility in H_2O : Insoluble

pH Information: Neutral

Evaporation Rate (CC14=1): >1

Form: Aerosol

Appearance: Milky

Color: White

Odor: Faint Ethereal Odor

10. STABILITY AND REACTIVITY

Stability: Stable.

Material and Conditions to Avoid: Avoid heat, sparks and flame. Strong acids and alkalis. Finely powdered metals such as Al, Be, Mg, Zn, etc. Strong oxidizing agents, aldehydes, halogens, halogen compounds, amines and ammonia.

Decomposition: This product can be decomposed by high temperatures (flame, glowing metal surfaces, etc.) forming hydrofluoric acid, possibly carbonyl fluoride, hazardous gases including carbon monoxide and carbon dioxide.

Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: None of the components in this product are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

1,1,1,2-Tetrafluoroethane (HFC134a)

Animal Data:

Eye: A short duration spray of vapor produced very slight eye irritation.

Skin: Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

Inhalation: 4 hour, ALC, rat: 567,000ppm

Single exposure caused: Cardiac sensitization, a potentially fatal disturbance of the heart rhythm associated with a heightened sensitivity to the action of epinephrine.
Lowest – Observed –Adverse –Effect –Level for cardiac sensitization: 75,000ppm Single exposure caused: Lethargy, Narcosis. Increased respiratory rates. These effects were temporary. Single exposure to near lethal doses caused: Pulmonary edema. Repeated exposure caused: Increased adrenals, liver, spleen weight. Repeated dosing of the higher concentrations caused; the following temporary effects – Tremors. Incoordination.

CARCINOGENIC, DEVELOPMENTAL, REPRODCTIVE, MUTAGENIC EFFECTS:

In a two-year inhalation study, HFC-134a, at a concentration of 50,000 ppm, produced an increase in late occurring benign testicular tumors, testicular hyperplasia, and testicular weight. The no-effect-level for this study was 10,000ppm. Animal data show slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

Isopropyl Alcohol

Inhalation:

Vapor Study LC50 Rat; male; (8h) = 22500 ppm, female (8h) = 19000 ppm

DEVEOLPMENTAL TOXICITY
Isopropyl alcohol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

REPRODUCTIVE TOXICITY
In animal studies, did not interfere with reproduction.

Isopropyl Alcohol is a mild skin irritant, a moderate eye irritant, and is untested for skin sensitization in animals. Repeated exposure caused dry skin, decreased body weight, and increased lung weight. The effects in animals from single exposure by ingestion to near lethal doses include bistopathological changes of the stomach, lungs, kidneys, incoordination, lethargy, gastrointestinal tract irritation, inactivity or anaesthesia. Long-term ingestion exposure caused incoordination, lethargy, and reduced weight gain. The effects in animals from single exposure by inhalation include inactivity or anaesthesia,histopathological changes of the nasal cavity, and auditory canal. Repeated inhalation exposure caused narcosis, incoordination, and degeneration of the liver. No adequate animal data are available to define the carcinogenic potential of this material. Animal data show developmental effects only at exposure levels producing other toxic effects in the adult animal. Reproductive data on rats show no change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures or in animals.

Tetrafluoroethylene Telomer

In rats, single exposure to dusts of undergraded PTFE by inhalation caused irritation of the lungs. Exposure to thermal decomposition products of PTFE caused lung injury whose severity depends upon the temperature and exposure conditions. Birds appear to be especially susceptible to the toxic effects of fluoropolymer decomposition products. In rats, exposure to freshly formed low molecular weight polymer fragments (fume) produced by continuous heating of the polymer above 400^{O}C may produce acute pulmonary inflammation. When the concentration of fluoropolymer fragment fumes increases, death may occur from pulmonary edema and hemorrhage. At higher temperatures involving gross thermal decomposition of the polymer, deaths occurred due to pulmonary edema from lethal concentrations of fluoropolymer fume and/or fluorinated gas decomposition products.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Isopropyl Alcohol

Test Organism	Test Type	Result
Fathead Minnow (Pimephales promelas)	Acute LC 50	8300-9200 mg/L
Mosquito Fish (Gambusia affinis)	Acute LC 50	> 1400 mg/L
Bluegill (Lepomis macrochrius)	Acute LC 50	> 1400mg/L
Golden Orfe (Leuciscus idus)	Acute LC 50	9100 mg/L
Goldfish (Carassius auratus)	Acute LC 50	> 500 mg/L

1,1,1,2-Tetrafluoroethane:

48 hour EC50 – Daphnia magna: 980 mg/L
96 hour LC50 – Rainbow trout: 450 mg/L

13. DISPOSAL CONSIDERATIONS

Comply with federal, state and local regulations. Remove to a permitted waste disposal facility. Do not puncture or incinerate cans. Empty aerosol cans before disposal.

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: Aerosol, Non-Flammable
Hazard Class: 2.2
Identification No. UN1950
Packing Group: None

IMDG
Proper Shipping Name: Aerosol, 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.

SARA/TITLE III HAZARD CATEGORIES AND LIST:

Product Hazard Categories:		**Lists:**	
Acute Health	- Yes	Extremely Hazardous Substance	- N.A.
Chronic Health	- No	CERCLA Hazardous Substance	- N.A.
Fire Hazard	- No	Toxic Chemicals	- N.A.
Reactivity Hazard	- No		
Pressure Hazard	- Yes		

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health	- 2
Flammability	- 2
Reactivity	- 1

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

FOR INDUSTRIAL USE ONLY