



**1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION**

**Name:** MS-122AD  
DPMS-Z0918A  
PTFE Release Agent/Dry Lubricant

**Product Use:** Release Agent or Dry Lubricant

**MANUFACTURER/DISTRIBUTOR:**

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

**Emergency Phone Number:**  
(800) 424-9300

**Date Revised:** June 2013

**2. HAZARDS IDENTIFICATION**

**Potential Health Effects**

**1,1,1,2-Tetrafluoroethane**

**Inhalation:** Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms may include anesthetic effects, light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

**Skin:** Contact with liquid or refrigerated gas can cause cold burns and frostbite. May cause skin irritation, discomfort, itching, redness or swelling.

**Eye:** "Frostbite-like" effects may occur if liquid or escaping vapor contacts the eyes. May cause irritation, tearing, redness and discomfort.

**Additional Health Effects:** Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the: Central Nervous System, Cardiovascular System.

### Isopropyl Alcohol

**EYE:** May cause pain disproportionate to the level of irritation to eye tissues. May cause moderate eye irritation. May cause moderate corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness. Vapor may cause lacrimation (tears).

**SKIN:** Prolonged exposure not likely to cause significant skin irritation. May cause drying and flaking of the skin.

**SKIN ABSORPTION:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**INHALATION:** With good ventilation, single exposure is not likely to be hazardous. In poorly ventilated areas, vapors or mists may accumulate and cause respiratory irritation. Prolonged excessive exposure may cause adverse effects. Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown

**INGESTION:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. May cause central nervous system depression. May cause nausea and vomiting. Signs and symptoms of excessive exposure may include: Facial flushing. Low blood pressure. Irregular heartbeats.

**ASPIRATION HAZARD:** Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

**EFFECTS OF REPEATED EXPOSURE:** In animals, effects have been reported on the following organs: Liver. Kidney. Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy.

**BIRTH DEFECTS/DEVELOPMENTAL EFFECTS:** Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

### Poly-Tetrafluoroethylene

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 polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Repeated episodes of polymer fume fever may result in persistent lung effects.

### 3. INGREDIENTS

<u>Material (s)</u>	<u>CAS No.</u>	<u>Approximate %</u>
1,1,1,2-Tetrafluoroethane	811-97-2	88 - 92
Isopropyl Alcohol	67-63-0	5 - 10
Poly-TFE, Omega-Hydro-Alpha-(Methylcyclohexyl)-	65530-85-0	1 - 2
Poly-Tetrafluoroethylene	9002-84-0	< 1

#### 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. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. 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.

**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. Fight fire from a distance, heat may rupture containers.

#### 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. Use appropriate respiratory protection, where ventilation is inadequate. Avoid contact with skin or eyes. Wash thoroughly after handling. Polytetrafluoroethylene should not be handled around tobacco products because smoking contaminated tobacco products may cause polymer fume fever.

**Storage Conditions:** Do not store near sources of heat, in direct sunlight or where temperatures exceed 120°F/49°C.



## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Limits:</u>	<u>TLV (ACGIH)</u>	<u>PEL (OSHA)</u>	<u>AEL* (DuPont)</u>
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	1000 ppm
Isopropyl Alcohol	200 ppm, TWA	400 ppm, 8 Hr. TWA	200ppm, 8 & 12Hr. TWA
Poly-Tetrafluoroethylene	Not Established	Not Established	10 mg/m <sup>3</sup> , 8 Hr. TWA, Total dust 5 mg/m <sup>3</sup> , 8 Hr. TWA, Respirable dust

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

**Respiratory Protection:** Avoid breathing vapors, mists or spray. Use with mechanical ventilation especially for enclosed or low places. Local exhaust should be used when large amounts are released. If necessary to keep exposure limits below permissible limits, use NIOSH approved respirators. 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<sub>2</sub>O :** 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 at recommended storage conditions.

**Material and Conditions to Avoid:** Avoid heat, sparks and flame. Strong oxidizers, strong acids, reactive metals, halogenated compounds, aldehydes, strong bases, alkali metals, alkaline earth metals.

**Decomposition:** Carbon oxides, Fluorinated compounds.

**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.

### **Animal Data:**

#### **1,1,1,2 Tetrafluoroethane**

**Eye:** Slight irritation, rabbit. No eye irritation, human.

**Skin:** Slight irritation, rabbit. No skin irritation, human.

No skin sensitization, guinea pig. Not expected to cause sensitization based on review of the properties of this product.

**Inhalation:** 4 hour LC50: 567,000ppm, rat.

Lowest – Observed –Adverse –Effect –Level for cardiac sensitization: 75,000ppm, dog.

**Repeated dose toxicity:** Inhalation, rat

**Carcinogenicity:** Overall weight of evidence indicates that the substance is not carcinogenic. An increased incidence of benign tumors was observed in laboratory animals.

**Mutagenicity:** Did not cause genetic damage in animals, cultured mammalian cells, or cultured bacterial cells.

**Reproductive toxicity:** Animal testing showed no reproductive toxicity.

**Teratogenicity:** Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

#### **Isopropyl Alcohol**

##### **Acute Toxicity**

**Ingestion:** LD50, Rat 4,700 - 5,800 mg/kg. Approximate. Lethal Dose, Human 100 ml

##### **Skin Absorption**

LD50, Rabbit 13,000 mg/kg

##### **Inhalation**

LC50, 8 h, Vapor, Rat, female 19,000 ppm

##### **Sensitization Skin**

Did not demonstrate the potential for contact allergy in mice.

##### **Repeated Dose Toxicity**

In animals, effects have been reported on the following organs: Liver. Kidney. Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy.

##### **Chronic Toxicity and Carcinogenicity Inhalation:**

Did not cause cancer in laboratory animals.

##### **Developmental Toxicity**

Isopropanol 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.

##### **Genetic Toxicology**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Poly-TFE, Alpha-Hydro-Omega-(Methylcyclohexyl)**

**Oral ALD:** > 17,000 mg/kg , rat

**Skin irritation:** No skin irritation, guinea pig

**Eye irritation:** slight irritation, rabbit

**Skin sensitization:** Did not cause sensitization on laboratory animals., guinea pig

**Poly-Tetrafluoroethylene**

**Oral LD50:** > 11,280 mg/kg , rat

**Skin irritation:** No skin irritation, rabbit or human

**Skin sensitization:** Patch test on human volunteers did not demonstrate sensitization properties.

**Repeated dose toxicity:** Oral – feed, rat. No toxicologically significant effects were found.

**12. ECOLOGICAL INFORMATION**

**Aquatic Toxicity:**

**1,1,1,2 Tetrafluoroethane**

48 hour EC50 – Daphnia magna: 980 mg/L

96 hour LC50 – Rainbow trout: 450 mg/L

72 hour EC50 – Algae > 118 mg/L

**Isopropyl Alcohol**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, fathead minnow (Pimephales promelas), flow-through, 96 h: 9,640 - 10,400 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, water flea Daphnia magna, 48 h, immobilization: 7,550 - 13,299 mg/l

**Aquatic Plant Toxicity**

EC50, alga Scenedesmus sp., Growth rate inhibition, 72 h: > 1,000 mg/l

**Toxicity to Micro-organisms**

EC50; activated sludge, respiration inhibition: > 1,000 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:** 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.

**SARA/TITLE III HAZARD CATEGORIES:**

**Product Hazard Categories:**

Acute Health	- Yes
Chronic Health	- Yes
Fire Hazard	- No
Reactivity Hazard	- No
Pressure Hazard	- Yes

**16. OTHER INFORMATION**

**NPCA-HMIS Ratings:**

Health	- 2
Flammability	- 2
Reactivity	- 0

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

**FOR INDUSTRIAL USE ONLY**