1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Name: MS-122XD
DPMS-Z0612A
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

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.
Harmful to aquatic life with long lasting effects.

Hazardous prevention measures: Avoid release to the environment.
Dispose of contents/container to an approved waste disposal plant.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Pressurized container. Do not pierce or burn, even after use**.**

Other hazards which do not result in classification or are not covered by GHS
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
May cause cardiac arrhythmia
The thermal decomposition vapors of fluorinated polymers 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

Material (s)	CAS No.	Approximate %
1,1,1,2-Tetrafluoroethane	811-97-2	80 - 90
1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee)	138495-42-8	9 - 15
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 to an unconscious person. Call a physician.

If vomiting occurs naturally, have a victim lean forward to reduce the risk of aspiration.

5. FIRE FIGHTING MEASURES

Specific hazards: This product is not flammable.

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

Extinguishing Media: As appropriate for surrounding area.

Special Fire Fighting Instruction: Self-contained breathing apparatus (SCBA) maybe required if a large amount of aerosols rupture under fire conditions. Evacuate personnel to safe area. Fight fire from a distance, heat may rupture containers.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area with fresh air, if a large amount is accidental released and wear self-contained breathing apparatus. 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. 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^{O}F/49^{O}C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	TLV (ACGIH)	PEL (OSHA)	AEL*(DuPont)
1,1,1,2-Tetrafluoroethane	Not Established	Not Established	1000 ppm
1,1,1,2,2,3,4,5,5,5-Decafluoropentane	Not Established	Not Established	200 ppm, 8 & 12 Hr. TWA 400 ppm, Ceiling
Poly-Tetrafluoroethylene	Not Established	Not Established	10 mg/m3, 8 Hr. TWA, total dust 5 mg/m3, 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

Density: 1.25 g/cc at 77^{O}F/25^{O}C

Vapor Density (Air=1): >1

pH Information: Neutral

Form: Aerosol

Color: White

Percent Volatile by Volume: 99%

Vapor Pressure: 80 psig at 77^{O}F/25^{O}C

Solubility in H_2O : Insoluble

Evaporation Rate (CC14=1): >1

Appearance: Milky

Odor: Faint Ethereal Odor

10. STABILITY AND REACTIVITY

Stability: Stable at normal and storage conditions.

Material and Conditions to Avoid Incompatible with alkali or alkaline earth metals – powdered Al, Zn, Be, Na, Mg, etc.
Incompatible with strong bases such as NaOH, KOH, etc.

Decomposition: This product can be decomposed by high temperatures (flame, glowing metal surfaces, etc.) forming fluorinated hydrocarbons, hydrogen 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.

Animal Data

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

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee)

Inhalation: 4 hour LC50: 114mg/l in rats, Central nervous system effects, Convulsions
Oral: LD50: > 5,000 mg/kg in rats
Dermal: LD50: > 5,000 mg/kg in rabbits
Skin Irritation: No skin irritation, rabbit
Eye Irritation: No eye irritation, rabbit
Skin Sensitization: Did not cause sensitization on laboratory animals, guinea pig
Repeated dose toxicity: Inhalation, rat
No toxicologically significant effects were found.
Reproductive toxicity: Animal testing showed no reproductive toxicity.
Teratogenicity: Animal testing showed no developmental toxicity.

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

Oral: ADL/rat: >17,000 mg/kg
Skin irritation: No skin irritation, guinea pig
Eye irritation: No eye irritation, rabbit
Skin sensitization: Did not cause sensitization on laboratory animals., guinea pig

Poly-Tetrafluoroethylene

Oral: LD50/rat: >11,280 mg/kg
Skin irritation: No skin irritation, guinea pig
Eye irritation: No eye irritation, rabbit
Skin sensitization: Did not cause sensitization on laboratory animals., guinea pig
Repeated dose toxicity: Oral, rat
No toxicologically significant effects were found.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee):

96 hour LC50 in fathead minnows: 27.2 mg/L
96 hour LC50 in rainbow trout: 13.9 mg/L
48 hour LC50 in Daphnia magna: 11.7 mg/L
72 hour EC50 in green algae: > 120 mg/L

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.

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	- No
Fire Hazard	- No
Reactivity Hazard	- No
Pressure Hazard	- Yes

1,1,1,2,2,3,4,5,5,5-Decafluoropentane (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule (SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

16. OTHER INFORMATION

NPCA-HMIS Ratings:

Health	- 1
Flammability	- 0
Reactivity	- 0

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

FOR INDUSTRIAL USE ONLY

REVISION DATE: FEBRUARY 2016