

MATERIAL SAFETY DATA SHEET

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Section 1. Chemical Product and Company Identification

Product Code MS222N"1	
Product Name MS220 AERO-DUSTER	
Manufacturer's Name Mark V Laboratory, Inc.	Emergency Telephone Number CHEMTREC 800-424-9300
Address (Number, Street, City, State, and ZIP Code) 18 Kripes Road	Telephone Number For Information (860) 653-7201
Post Office Box 540	Date Prepared January 1, 2012
East Granby, Connecticut 06026	Signature of Preparer (optional)

Section 2. Composition / Information on Ingredients

Component	CAS Registry #	wt. %	Exposure Limits	
			ACGIH TLV	OSHA PEL
1,1,1,2-Tetraflouroethane	811-97-2	100	N/E	N/E

Section 3. Hazards Identification

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EMERGENCY OVERVIEW

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POTENTIAL HEALTH EFFECTS:

EYE CONTACT: "Frostbite-like" effects may occur if liquid or escaping vapor contacts the eyes

INHALATION: Gross overexposure may cause: CNS depression and dizziness, incoordination, drowsiness or unconsciousness.
Irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors

SKIN CONTACT: Liquid contact can cause frostbite.

Additional Health Effects: Increased susceptibility to the effects of this material may be observed in persons with per-existing disease of the CNS, Cardiovascular System

Product: Aero Duster

Section 4. First Aid Measures

INHALATION: Immediately remove to fresh air. If not breathing, give artificial respiration. Keep person calm. If breathing is difficult give oxygen. Call a physician.

EYE CONTACT: Immediately flush with plenty of water for 15 minutes, lifting eyelids until no evidence of the chemical remains. Call a physician.

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

INGESTION: Ingestion is not considered a potential route of exposure.

NOTE TO PHYSICIAN: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.

Section 5. Fire Fighting Measures

FLAMMABLE PROPERTIES:

FLASH POINT: Non-flammable (16CFR METHOD USED: N.A.
1500.45)

FLAMMABLE LIMITS Auto-ignition Temp: >743c/1369f

LEL: None per ASTM E681 UEL: None per ASTM E681

EXTINGUISHING MEDIA: As appropriate for combustibles in area.

FIRE & EXPLOSION HAZARDS: Cans may rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of the torch flames. Stop all work and ventilate to dispense refrigerant from work area before using any open flames

1,1,1,2 Tetraflouroethane is not flammable in air at temperatures up to 100c/212f at atmospheric pressure, However, mixtures with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. It should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. Do NOT mix with air under pressure for leak testing etc.

Experimental data have been reported indicating combustibility in the presence of certain concentrations of chlorine.

FIRE FIGHTING INSTRUCTIONS: Cool cans with water spray. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or contents are released under fire conditions.

Section 6. Accidental Release Measures

Ventilate area; especially low places where heavy vapors might collect. Remove open flames.

Section 7. Handling and Storage

DO NOT store near sources of heat, in direct sunlight, or where temperatures exceed 126f/52c. DO NOT puncture or damage containers. Contact with chlorine or other strong oxidizing agents should be avoided.

Section 8. Exposure Controls / Personal Protection

ENGINEERING CONTROLS: Normal ventilation for standard procedures is generally adequate. HFC 134a should not be mixed with air for any other purpose above atmospheric pressure.

RESPIRATORY PROTECTION: Under normal use conditions, no respiratory protection is required.

SKIN PROTECTION: Lined butyl gloves.

EYE PROTECTION: Chemical splash goggles.

Product: Aero Duster

Section 9. Physical and chemical Properties

APPEARANCE:	Colorless	PHYSICAL STATE:	Liquified Gas
BOILING POINT:	-15.7f / -26.5c	SOLUBILITY IN WATER:	0.15% by wt @ 77F & 14.7 psia
EVAPORATION RATE:	(CC14=1): >1	DENSITY:	1.21g/cc@77f/25c
ODOR:	Slight Ethereal	VAPOR DENSITY:	3.6
pH:	Neutral	VAPOR PRESSURE:	96 psia @ 77F/25c
		% VOLATILE:	100

Section 10. Stability and Reactivity

CHEMICAL STABILITY: Stable. Avoid open flames and high temperatures.

INCOMPATIBILITY: Alkali or alkaline earth metals, powdered Al, Be, Zn, etc.

HAZARDOUS DECOMPOSITION PRODUCTS: Can be decomposed by high temperatures (open flames, flowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11. Toxicological Information

SEE SECTION 16

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

SKIN: Animal testing indicates this material is a slight irritant, but not a sensitizer

INHALATION: See Section 16

CARCINOGENICITY: See Section 16

Section 12. Ecological Information

ECOTOXICOLOGICAL INFORMATION: Aquatic Toxicity; 48 hour EC50 - Daphnia magna:980mg/L
96 hour LC50 - Rainbow trout:450mg/L

Section 13. Disposal Considerations

Comply with federal, state, and local regulations.

Section 14. Transport Information (Not meant to be all inclusive)

D.O.T. SHIPPING NAME: Refrigerant Gas R 134a
TECHNICAL SHIPPING NAME: Refrigerant Gas R 134a
D.O.T. HAZARD CLASS: 2.2
U.N. / N.A. NUMBER: UN3159
PRODUCT RQ (LBS): N/A
D.O.T. LABEL: Non-Flammable Gas
D.O.T. PLACARD: N/A
FREIGHT CLASS BULK: N/A
FREIGHT CLASS PACKAGE: N/A
PRODUCT LABEL: MS220

Product: Aero Duster

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)

OSHA STATUS: Yes

TSCA STATUS: All ingredients are listed in TSCA inventory.

CERCLA REPORTABLE QUANTITY: No

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: No

SECTION 311/312 HAZARDOUS CATEGORIES: No

SECTION 313 TOXIC CHEMICALS: No

RCRA STATUS: To be determined by user

WHMIS Class (Canada): A

CALIFORNIA PROPOSITION 65: No

CEPA STATUS: DSL REPORTED/INCLUDED

Section 16. Other Information

ANIMAL DATA: 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 effect 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, REPRODUCTIVE, MUTAGENIC EFFECTS:

In a two-year study, HFC-134a, at a concentration of 50,000ppm, 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 Damage in reproductive cells of mammals (has not produced heritable genetic damage).

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