

# GENERAL MOTORS CORPORATION

## MATERIAL SAFETY DATA SHEET

### SECTION I

|                                                                                                                                                            |                               |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------|
| PRODUCT NAME OR NUMBER (as it appears on label)<br>Freon® 22                                                                                               |                               | GM COMMON CODE                            |
| MANUFACTURER'S NAME<br>E. T. Du Pont de Nemours and Company, Inc.                                                                                          |                               | EMERGENCY TELEPHONE NO.<br>(800) 441-3637 |
| ADDRESS (Number, Street, City, State and Zip Code)<br>Freon® Products Division, Wilmington, DE 19898                                                       |                               | MANUFACTURER'S D-U-N-S NO.                |
| HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)<br>Monochlorodifluoromethane, Nonflammable Gas, UN-1018 |                               |                                           |
| ADDITIONAL HAZARD CLASSES (as applicable)<br>--                                                                                                            |                               |                                           |
| CHEMICAL FAMILY<br>Halogenated Hydrocarbon                                                                                                                 | FORMULA<br>CHClF <sub>2</sub> |                                           |

### SECTION II — INGREDIENTS (list all ingredients)

| CAS REGISTRY NO. | %W  | %V  | CHEMICAL NAME(S)      | Listed as a Carcinogen in NTP, IARC or OSHA 1910(z) (specify) |
|------------------|-----|-----|-----------------------|---------------------------------------------------------------|
| 75-45-6          | 100 | 100 | Chlorodifluoromethane | N/A                                                           |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |
|                  |     |     |                       |                                                               |

### SECTION III — PHYSICAL DATA

|                                                               |                                                         |                                                                                                                                             |                                    |
|---------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| BOILING POINT<br>-41.4 °C                                     | SPECIFIC GRAVITY (H <sub>2</sub> O = 1)<br>g/cc at 77°F | 1.194                                                                                                                                       |                                    |
| VAPOR PRESSURE<br>787.2 mm Hg at 77°F                         | PERCENT VOLATILE BY VOLUME (%)                          | 100                                                                                                                                         | PERCENT SOLID BY WEIGHT (%)<br>N/A |
| HAZARD RATIO (AIR = 1)                                        | EVAPORATION RATE ( = 1)                                 | Rapid                                                                                                                                       |                                    |
| SOLUBILITY IN WATER<br>wt. % at 77°F                          | pH =                                                    | Neut                                                                                                                                        |                                    |
| APPEARANCE AND ODOR<br>Clear, colorless--slight ethereal odor |                                                         | IS MATERIAL<br>GAS <input checked="" type="checkbox"/> LIQUID <input checked="" type="checkbox"/> SOLID <input checked="" type="checkbox"/> |                                    |

### SECTION IV — FIRE AND EXPLOSION HAZARD DATA

|                                                                                                                                         |                    |                  |             |             |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|-------------|-------------|
| FLASH POINT<br>None                                                                                                                     | method used<br>TOC | FLAMMABLE LIMITS | LEL<br>None | UEL<br>None |
| EXTINGUISHING MEDIA<br>Nonflammable                                                                                                     |                    |                  |             |             |
| SPECIAL FIRE FIGHTING PROCEDURES<br>Burning material may cause Freon® 22 to burn weakly. Extinguishant for burning material is suitable |                    |                  |             |             |
| USUAL FIRE AND EXPLOSION HAZARDS<br>Cylinders are equipped with relief devices but may still rupture under fire conditions              |                    |                  |             |             |

## SECTION V-HEALTH HAZARD DATA

|                                                                                                                            |                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Light-headedness, shortness of breath<br>possible cardiac arrhythmias at<br>high concentrations                            | THRESHOLD LIMIT VALUE <input checked="" type="checkbox"/><br>PERMISSIBLE EXPOSURE LIMIT <input checked="" type="checkbox"/> 1000 ppm<br>OTHER LIMIT <input type="checkbox"/> |
| MAJOR ROUTES OF ENTRY Inhalation <input checked="" type="checkbox"/> Skin Contact <input type="checkbox"/> Other (specify) |                                                                                                                                                                              |

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Remove to fresh air, call a Physician. Do not give epinephrine or similar drugs. Skin or Eye Contact: Flush with water, treat for frostbite

## SECTION VI-REACTIVITY DATA

|                                                                                                    |                |   |                                  |
|----------------------------------------------------------------------------------------------------|----------------|---|----------------------------------|
| STABILITY                                                                                          | UNSTABLE       |   | CONDITIONS TO AVOID              |
|                                                                                                    | STABLE         | X | Open flames or high temperatures |
| INCOMPATIBILITY (materials to avoid)<br>Alkali or alkaline earth metals--powdered Al, Be, Zn, etc. |                |   |                                  |
| HAZARDOUS DECOMPOSITION PRODUCTS:<br>Hydrochloric and Hydrofluoric Acids--possible carbonyl halide |                |   |                                  |
| HAZARDOUS                                                                                          | MAY OCCUR      |   | CONDITIONS TO AVOID              |
| POLYMERIZATION                                                                                     | WILL NOT OCCUR | X |                                  |

## SECTION VII-SPILL OR LEAK PROCEDURES

|                                                                                            |                                                                                |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED                                  |                                                                                |
| Ventilate Area--especially low places where heavy vapors might collect. Remove open flames |                                                                                |
| WASTE DISPOSAL METHOD                                                                      |                                                                                |
| Reclaim by Distillation                                                                    |                                                                                |
| CERCLA (Superfund) REPORTABLE QUANTITY (in lbs)                                            | N/A                                                                            |
| RCRA HAZARDOUS WASTE NO. (40 CFR 261.33)                                                   | N/A                                                                            |
| LAVILE ORGANIC COMPOUND (VOC) (as packaged, minus water)                                   | 100%                                                                           |
| <input type="checkbox"/> Theoretical _____ lb/gal                                          | <input checked="" type="checkbox"/> Analytical 9.96 lb/gal at 77°F in cylinder |

## SECTION VIII-SPECIAL PROTECTION INFORMATION

|                                                               |                                                                                 |
|---------------------------------------------------------------|---------------------------------------------------------------------------------|
| RESPIRATORY PROTECTION (specify type)                         |                                                                                 |
| Use self-contained breathing apparatus in high concentrations |                                                                                 |
| VENTILATION                                                   | LOCAL EXHAUST (Specify Rate)<br>When large amounts are released > 100 rpm       |
|                                                               | MECHANICAL (General) (Specify Rate)<br>When large amounts are released > 60 rpm |
| PROTECTIVE GLOVES (specify type)                              | Neoprene-handling liquid                                                        |
| OTHER PROTECTIVE EQUIPMENT                                    | EYE PROTECTION (specify type) Chemical splash - handling liquid                 |

## SECTION IX-SPECIAL PRECAUTIONS

|                                                                                                                                                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING                                                                                                                                                                                                                                                                                                                             |  |
| Store containers in a clean, dry area. Do not heat above 125°F. Vaporization of excessive amounts of this product can deplete or replace oxygen necessary for breathing. In confined/enclosed spaces or areas with little ventilation, this may be hazardous to health. Exposure to high concentrations of this product may induce cardiac arrhythmias in some individuals. |  |
| OTHER PRECAUTIONS                                                                                                                                                                                                                                                                                                                                                           |  |
| PLEASE COMPLETE QUESTIONNAIRE AND RETURN TO:                                                                                                                                                                                                                                                                                                                                |  |

|              |                        |
|--------------|------------------------|
| Name (print) | Richard J. Burg        |
| Signature    | <i>Richard J. Burg</i> |
| Title        | Senior Technologist    |
| Date         | July 10, 1985          |