

**MSDS DATA SHEET**

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SCREEN QA06\_\_ KEY 0000939941,0000000018\_\_\_\_\_

FID#: 00123588 VER-DT: 12/04/90

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SECTION 01: CHEMICAL PRODUCT & COMPANY ID  
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PRODUCT PRIMARY NAME: GENETRON 12  
PLANT SYNONYMS: AIR CONDITIONING REFRIGERANT

- > GENETRON 12
- > 12301105
- > 12301106
- > 12301107
- > 15-114
- > 15-115
- > 15-116

SAFE USE CATEGORY AND DESCRIPTION: 01 -HALOGENATED SOLVENTS

LAST UPDATED DATE: 2000-01-01  
MANUFACTURER'S ID (MID): 000556814  
MANUFACTURER'S NAME: HONEYWELL  
MANUFACTURER'S EMERGENCY PHONE NUMBER/TEXT: 800-424-9300  
MANUFACTURER'S MAILING ADDRESS:  
101 COLUMBIA ROAD, BOX 1053  
ALSO SEE GMBA #553141  
MORRISTOWN NJ 07962-1053  
US

SECTION 1 - OTHER INFORMATION: EMERGENCY OVERVIEW: COLORLESS, VOLATILE LIQUID WITH ETHEREAL AND FAINT SWEETISH ODOR. NON-FLAMMABLE MATERIAL. OVEREXPOSURE MAY CAUSE DIZZINESS AND LOSS OF CONCENTRATION. AT HIGHER LEVELS, CNS DEPRESSION AND CARDIAC ARRHYTHMIA MAY RESULT FROM EXPOSURE. VAPORS DISPLACE AIR AND CAN CAUSE ASPHYXIATION IN CONFINED SPACES. AT HIGHER TEMPERATURES, (>250 C), DECOMPOSITION PRODUCTS MAY INCLUDE HYDROFLUORIC ACID (HF) AND CARBONYL HALIDES SUCH AS PHOSGENE. PRODUCT CCL2F2.

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SECTION 02: COMPOSITION & INGREDIENT INFO  
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CAS# FORMULATION W/V CHEMICAL NAME  
000075718 =100.0000/ 0.0000% W METHANE, DICHLORODIFLUORO-

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SECTION 03: HAZARDS IDENTIFICATION  
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PRIMARY ENTRY ROUTE INDICATORS:  
SKIN PRIMARY ENTRY ROUTE INDICATOR = Y  
EYE PRIMARY ENTRY ROUTE INDICATOR = Y  
INHALATION PRIMARY ENTRY ROUTE INDICATOR = Y  
INGESTION PRIMARY ENTRY ROUTE INDICATOR = Y

WOULD RESULT FROM A DEFATTING ACTION ON TISSUE. LIQUID CONTACT COULD CAUSE FROSTBITE.  
EFFECTS OF OVEREXPOSURE - EYE: POTENTIAL HEALTH HAZARDS: LIQUID CONTACT CAN CAUSE SEVERE IRRITATION AND FROSTBITE. MIST MAY IRRITATE.

EFFECTS OF OVEREXPOSURE - INHALATION: POTENTIAL HEALTH HAZARDS: WHEN OXYGEN LEVELS IN AIR ARE REDUCED TO 12-14% BY DISPLACEMENT, SYMPTOMS OF ASPHYXIATION, LOSS OF COORDINATION, INCREASED PULSE RATE AND DEEPER RESPIRATION WILL OCCUR. AT HIGH LEVELS, CARDIAC ARRHYTHMIA MAY OCCUR. EFFECTS OF OVEREXPOSURE - INGESTION: POTENTIAL HEALTH HAZARDS: INGESTION IS UNLIKELY BECAUSE OF THE LOW BOILING POINT OF THE MATERIAL. SHOULD IT OCCUR, DISCOMFORT IN THE GASTROINTESTINAL TRACT FROM RAPID EVAPORATION OF THE MATERIAL AND CONSEQUENT EVOLUTION OF GAS WOULD RESULT. SOME EFFECTS OF INHALATION AND SKIN EXPOSURE WOULD BE EXPECTED. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: NOT YET DETERMINED.

ADDITIONAL HEALTH HAZARD DATA: DELAYED EFFECTS: NONE KNOWN.

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SECTION 04: FIRST AID MEASURES  
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EMERGENCY FIRST AID PROCEDURES - SKIN: PROMPTLY FLUSH SKIN WITH WATER UNTIL ALL CHEMICAL IS REMOVED. IF THERE IS EVIDENCE OF FROSTBITE, BATHE (DO NOT RUB) WITH LUKEWARM (NOT HOT) WATER. IF WATER IS NOT AVAILABLE, COVER WITH A CLEAN, SOFT CLOTH OR SIMILAR COVERING. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

EMERGENCY FIRST AID PROCEDURES - EYES: IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES (IN CASE OF FROSTBITE WATER SHOULD BE LUKEWARM, NOT HOT) LIFTING EYELIDS OCCASIONALLY TO FACILITATE IRRIGATION. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

EMERGENCY FIRST AID PROCEDURES - INHALATION: IMMEDIATELY REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. USE OXYGEN AS REQUIRED, PROVIDED A QUALIFIED OPERATOR IS AVAILABLE. GET MEDICAL ATTENTION. DO NOT GIVE EPINEPHRINE (ADRENALINE).

BECAUSE OF THE PHYSICAL PROPERTIES AND IS NOT EXPECTED TO BE HAZARDOUS. DO NOT INDUCE VOMITING UNLESS INSTRUCTED TO DO SO BY A PHYSICIAN.

NOTES TO PHYSICIAN: BECAUSE OF THE POSSIBLE DISTURBANCES OF CARDIAC RHYTHM, CATECHOLAMINE DRUGS, SUCH AS EPINEPHRINE, SHOULD BE USED WITH SPECIAL CAUTION AND ONLY IN SITUATIONS OF EMERGENCY LIFE SUPPORT. TREATMENT OF OVEREXPOSURE SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITIONS.

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SECTION 05: FIRE-FIGHTING MEASURES  
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SPECIAL FIRE FIGHTING PROCEDURES: EXTINGUISHING MEDIA: USE ANY STANDARD AGENT-CHOOSE THE ONE MOST APPROPRIATE FOR TYPE OF SURROUNDING FIRE (MATERIAL ITSELF IS NOT FLAMMABLE). SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS: FIREFIGHTERS SHOULD WEAR SELF-CONTAINED, TOXIC DECOMPOSITION PRODUCTS. PROPER EYE AND SKIN PROTECTION SHOULD BE PROVIDED. USE WATER SPRAY TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE AND EXPLOSION HAZARDS: CONTACT WITH CERTAIN REACTIVE METALS MAY RESULT IN FORMATION OF EXPLOSIVE OR EXOTHERMIC REACTIONS UNDER SPECIFIC CONDITIONS (E.G. VERY HIGH TEMPERATURES AND/OR APPROPRIATE PRESSURES).

HMIS CODES:

HMIS REACTIVITY CODE = 0

HMIS HEALTH CODE = 1

HMIS FLAMMABILITY CODE = 0

NFPA CODES:

NFPA FLAMMABILITY CODE = 0

NFPA HEALTH CODE = 2

NFPA REACTIVITY CODE = 0

FLASH POINT TEXT: NOT APPLICABLE. GAS, NOT APPLICABLE PER DOT

REGULATIONS.

FLASH POINT METHOD TEXT: NOT APPLICABLE.

SECTION 5 - OTHER INFORMATION: UPPER AND LOWER FLAME LIMIT (VOLUME % IN AIR): NONE (BASED ON ASHRAE STANDARD 34 WITH MATCH IGNITION). FLAME PROPAGATION RATE (SOLIDS): NOT APPLICABLE. OSHA FLAMMABILITY CLASS: NOT APPLICABLE. HMIS AND NFPA CLASSIFICATION: ANSI/ASHRAE 34 SAFETY GROUP-A1.

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SECTION 06: ACCIDENTAL RELEASE MEASURES  
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SPILL OR LEAK PROCEDURES: IN CASE OF SPILL OR OTHER RELEASE: (ALWAYS PERSONNEL. PROTECTED PERSONNEL SHOULD REMOVE IGNITION SOURCES AND SHUT OFF LEAK, IF WITHOUT RISK, AND PROVIDE VENTILATION. UNPROTECTED PERSONNEL SHOULD NOT RETURN UNTIL AIR HAS BEEN TESTED AND DETERMINED SAFE, INCLUDING LOW-LYING AREAS. SPILLS AND RELEASES MAY HAVE TO BE REPORTED TO FEDERAL AND/OR LOCAL AUTHORITIES. SEE SECTION 15 REGARDING REPORTING REQUIREMENTS.

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SECTION 07: HANDLING AND STORAGE  
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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: NORMAL HANDLING: (ALWAYS WEAR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT.) AVOID BREATHING VAPORS AND LIQUID CONTACT WITH EYES, SKIN OR CLOTHING. DO NOT PUNCTURE OR DROP CYLINDERS, EXPOSE THEM TO OPEN FLAME OR EXCESSIVE HEAT. USE AUTHORIZED CYLINDERS ONLY. FOLLOW STANDARD SAFETY PRECAUTIONS FOR HANDLING AND USE OF COMPRESSED GAS CYLINDERS. STORAGE AND OUT OF DIRECT SUNLIGHT. PROTECT CYLINDER AND ITS FITTINGS FROM PHYSICAL DAMAGE. STORAGE IN SUBSURFACE LOCATIONS SHOULD BE AVOIDED. CLOSE VALVE TIGHTLY AFTER USE AND WHEN EMPTY.

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SECTION 08: EXPOSURE CONTROLS - PROTECTION  
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EYE PROTECTION: FOR NORMAL CONDITIONS, WEAR SAFETY GLASSES. WHERE THERE IS REASONABLE PROBABILITY OF LIQUID CONTACT, WEAR CHEMICAL SAFETY GOGGLES.

SKIN PROTECTION: SKIN CONTACT WITH REFRIGERANT MAY CAUSE FROSTBITE. GENERAL WORK CLOTHING SHOULD PROVIDE ADEQUATE PROTECTION. ANY CONTAMINATED CLOTHING SHOULD BE PROMPTLY REMOVED AND WASHED BEFORE REUSE. ADDITIONAL RECOMMENDATIONS: WHERE CONTACT WITH LIQUID IS LIKELY, SUCH AS IN A SPILL OR LEAK, IMPERVIOUS BOOTS AND CLOTHING SHOULD BE

RESPIRATORY PROTECTION: NONE GENERALLY REQUIRED FOR ADEQUATELY VENTILATED WORK SITUATIONS. FOR ACCIDENTAL RELEASE OR NON-VENTILATED SITUATIONS, OR RELEASE INTO CONFINED SPACE, WHERE THE CONCENTRATION MAY BE ABOVE THE PEL OF 1,000 PPM, USE A SELF-CONTAINED, NIOSH-APPROVED BREATHING APPARATUS OR SUPPLIED AIR RESPIRATOR. FOR ESCAPE: USE THE FORMER OR A NIOSH-APPROVED GAS MASK WITH ORGANIC VAPOR CANISTER.

PERSONAL PROTECTIVE EQUIPMENT: ADDITIONAL RECOMMENDATIONS: FOR TANK CLEANING OPERATIONS, SEE OSHA REGULATIONS, 29 CFR 1910.132 AND 29 CFR 1910.133.

ENGINEERING CONTROLS: PROVIDE LOCAL VENTILATION AT FILLING ZONES AND AREAS WHERE LEAKAGE IS PROBABLE. MECHANICAL (GENERAL) VENTILATION MAY BE ADEQUATE FOR OTHER OPERATING AND STORAGE AREAS. PROVIDE EYEWASH STATIONS AND QUICK-DRENCH SHOWER FACILITIES AT CONVENIENT LOCATIONS.

WORKPLACE/HYGIENIC PRACTICES: ADDITIONAL RECOMMENDATIONS: HIGH DOSE-LEVEL WARNING SIGNS ARE RECOMMENDED FOR AREAS OF PRINCIPAL EXPOSURE.

PROTECTIVE GLOVES (SPECIFY TYPE): SKIN CONTACT WITH REFRIGERANT MAY CAUSE FROSTBITE. GENERAL WORK GLOVES (LEATHER) SHOULD PROVIDE ADEQUATE PROTECTION. IF PROLONGED CONTACT WITH THE LIQUID OR GAS IS ANTICIPATED, INSULATED GLOVES CONSTRUCTED OF PVA, NEOPRENE OR BUTYL RUBBER SHOULD BE USED.

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SECTION 09: PHYSICAL & CHEMICAL PROPERTIES  
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BOILING POINT TEMPS: = - 29.80C/- 21.60F

MELTING/FREEZE POINT TEMPS: = - 252.00C/- 157.70F

SPECIFIC GRAVITY VALUES: = 1.3400

SPECIFIC GRAVITY TEXT: (WATER=1.0): AT 30C (86F).

VAPOR DENSITY VALUES: = 4.2000

VAPOR DENSITY TEXT: (AIR=1.0)

VAPOR PRESSURE TEXT: 94.9 PSIA AT 70F; 195.6 PSIA AT 130F.

PERCENT VOLATILE BY VOLUME: = 100.0000

EVAPORATION RATE VALUES: > 1.00

EVAPORATION RATE TEXT: COMPARED TO: CCL4=1

SOLUBILITY IN WATER TEXT: (WEIGHT %): UNKNOWN.

PH OF PRODUCT AS RECEIVED (NEAT)/TEXT: NEUTRAL.

AMBIENT TEMPERATURES.

ODOR: FAINT ETHEREAL ODOR.

MOLECULAR WEIGHT VALUES: = 120.9000

PHYSICAL STATE: LIQ

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SECTION 10: STABILITY & REACTIVITY  
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STABILITY INDICATOR: Y

STABILITY - TEXT: NORMALLY STABLE (CONDITIONS TO AVOID): THE PRODUCT IS STABLE. DO NOT MIX WITH OXYGEN OR AIR ABOVE ATMOSPHERIC PRESSURE. ANY SOURCE OF HIGH TEMPERATURE, SUCH AS LIGHTED CIGARETTES, FLAMES, HOT SPOTS OR WELDING MAY YIELD TOXIC AND/OR CORROSIVE DECOMPOSITION TEMPERATURES AND/OR APPROPRIATE PRESSURES)-FRESHLY ABRADED ALUMINUM SURFACES (MAY CAUSE STRONG EXOTHERMIC REACTION). CHEMICALLY ACTIVE METALS: POTASSIUM, CALCIUM, POWDERED ALUMINUM, MAGNESIUM AND ZINC.

HAZARDOUS DECOMPOSITION PRODUCTS: HALOGENS, HALOGEN ACIDS AND POSSIBLY CARBONYL HALIDES.

HAZARDOUS POLYMERIZATION INDICATOR: N

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SECTION 11: TOXICOLOGICAL INFORMATION  
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TOXICOLOGICAL DATA UNLIMITED TEXT: GENETRON 12 IS LOW IN ACUTE TOXICITY IN ANIMALS EVEN AT A CONCENTRATIONS OF 5% (50,000 PPM). IMMEDIATE

(ACUTE) EFFECTS: LC50: 4 HR. (RAT)->760,000 PPM; CARDIAC SENSITIZATION THRESHOLD (DOG)-50,000 PPM; 10 MIN EC50-254,000 PPM. DELAYED DATA: TERATOLOGY: NOT A TERATOGEN.

CARCINOGENICITY: THERE ARE NO INGREDIENTS LISTED AS CARCINOGENS BY NTP, IARC OR OSHA.

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SECTION 12: ECOLOGICAL INFORMATION  
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ECOLOGICAL INFORMATION: DEGRADABILITY (BOD): GENETRON 12 IS A GAS AT ROOM TEMPERATURE; THEREFORE, IT IS UNLIKELY TO REMAIN IN WATER. OCTANOL WATER PARTITION COEFFICIENT: UNKNOWN.

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SECTION 13: DISPOSAL CONSIDERATIONS  
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WASTE DISPOSAL METHOD: DISPOSAL MUST COMPLY WITH FEDERAL, STATE, AND ENVIRONMENTAL PROTECTION AGENCY CLEAN AIR ACT REGULATIONS SECTION 608 IN 40 CFR PART 82 REGARDING REFRIGERANT RECYCLING. THE INFORMATION OFFERED HERE IS FOR THE PRODUCT AS SHIPPED. USE AND/OR ALTERATIONS TO THE PRODUCT SUCH AS MIXING WITH OTHER MATERIALS MAY SIGNIFICANTLY CHANGE THE CHARACTERISTICS OF THE MATERIAL AND ALTER THE RCRA CLASSIFICATION AND THE PROPER DISPOSAL METHOD.

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SECTION 14: TRANSPORT INFORMATION  
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DOT INFORMATION: US DOT HAZARD CLASS: US DOT PROPER SHIPPING NAME: DICHLORODIFLUOROMETHANE (R12); US DOT HAZARD CLASS: 2.2; US DOT PACKING GROUP: NOT APPLICABLE. US DOT ID NUMBER: UN1028. FOR ADDITIONAL INFORMATION ON SHIPPING REGULATIONS AFFECTING THIS MATERIAL, CONTACT THE INFORMATION NUMBER 1-800-707-4555.

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SARA 311/312 HAZARD INDICATORS:

IMMEDIATE HEALTH INDICATOR =	Y
DELAYED HEALTH INDICATOR =	N
SUDDEN PRESSURE RELEASE INDICATOR =	Y

SECTION 15 - OTHER INFORMATION: TOXIC SUBSTANCES CONTROL ACT (TSCA): TSCA INVENTORY STATUS: LISTED ON THE TSCA INVENTORY. OTHER TSCA ISSUES: NONE. SARA TITLE III/CERCLA: REPORTABLE QUANTITIES (RQS) AND/OR THRESHOLD PLANNING QUANTITIES (TPQS) EXIST FOR THE FOLLOWING INGREDIENTS: DICHLORODIFLUOROMETHANE (75-71-8): SARA/CERCLA 5000 RQ (LB.); SARA EHS TPQ (LB.): NONE. SPILLS OR RELEASES RESULTING IN THE LOSS OF ANY INGREDIENT AT OR ABOVE ITS RQ REQUIRES IMMEDIATE NOTIFICATION TO THE NATIONAL RESPONSE CENTER (800) 424-8802 AND TO YOUR LOCAL EMERGENCY PLANNING COMMITTEE. SARA 313 TOXIC CHEMICALS: THE FOLLOWING INGREDIENT IS A SARA 313 TOXIC CHEMICAL: RIGHT-TO-KNOW: NO INGREDIENTS LISTED IN THIS SECTION. ADDITIONAL REGULATORY INFORMATION: GENETRON 12 IS SUBJECT TO U.S. ENVIRONMENTAL PROTECTION AGENCY CLEAN AIR ACT REGULATIONS AT 40 CFR PART 82. WARNING: DO NOT VENT TO THE ATMOSPHERE. TO COMPLY WITH PROVISIONS OF THE U.S. CLEAN AIR ACT, ANY RESIDUAL MUST BE RECOVERED. CONTAINS DICHLORODIFLUOROMETHANE (75-71-8)(CFC-12), A SUBSTANCE WHICH HARMS PUBLIC HEALTH AND ENVIRONMENT BY DESTROYING OZONE IN THE UPPER ATMOSPHERE. DESTRUCTION OF THE OZONE LAYER CAN LEAD TO INCREASED ULTRAVIOLET RADIATION WHICH, WITH EXCESS EXPOSURE TO SUNLIGHT, CAN LEAD TO AN INCREASE IN SKIN CANCER AND EYE CATARACTS. WHMIS CLASSIFICATION (CANADA): THIS PRODUCT HAS BEEN EVALUATED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED

BY THE CPR. FOREIGN INVENTORY STATUS: CANADA-LISTED ON DSL; EU-EINECS  
NO. 2206926.

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RCRA HAZARDOUS WASTE NUMBER TEXT: THE UNUSED PRODUCT IS NOT A RCRA  
HAZARDOUS WASTE IF DISCARDED. RCRA ID NUMBER: NOT APPLICABLE. GENETRON  
12 IS SUBJECT TO U.S. ENVIRONMENTAL PROTECTION AGENCY CLEAN AIR ACT  
REGULATIONS SECTION 608 IN 40 CFR PART 82 REGARDING REFRIGERANT  
RECYCLING. THE INFORMATION OFFERED HERE IS FOR THE PRODUCT AS SHIPPED.  
USE AND/OR ALTERATIONS TO THE PRODUCT SUCH AS MIXING WITH OTHER  
MATERIALS MAY SIGNIFICANTLY CHANGE THE CHARACTERISTICS OF THE MATERIAL  
AND ALTER THE RCRA CLASSIFICATION AND THE PROPER DISPOSAL METHOD.

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