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MATERIAL SAFETY DATA SHEET *DATE REVISED: JAN 2024*

PRODUCT IDENTIFICATION:

PRODUCT NAME:	***HALONAIRE***
INGREDIENTS:	***HALON 1211 & HALON 1301***
CHEMICAL NAMES:	***BROMOCHLORDIFLUORMETHANE & BROMOTRIFLUOROMETHANE***
SYNONYMS:	***NOT APPLICABLE***
CHEMICAL FAMILY:	***HALOGENATED HYDROCARBONS***
MOLECULAR FORMULA:	***NOT APPLICABLE***
PRODUCT USES:	***EXTINGUISHING AGENTS***

HAZARDOUS INGREDIENTS OF MATERIAL:

HAZARDOUS INGREDIENTS

HALON 1211	***ACGIH TLV***
HALON 1301	***BOTH NOT LISTED***

PHYSICAL PROPERTIES:

PHYSICAL STATE:	***GAS***
APPEARANCE & ODOR:	***COLORLESS GAS WITH A VERY FAINT SWEET ODOR***
ODOR THRESHOLD:	***NOT AVAILABLE***
BOILING POINT C:	***MINUS 50***
MELTING POINT:	***NO DATA***
FREEZING POINT:	***NO DATA***
SPECIFIC GRAVITY:	***1.73***
VAPOR DENSITY:	***5.3 (AIR=1.00)***
EVAPORATION RATE:	***100% VOLATILE***
SOLUBILITY:	***NOT SOLUBLE IN WATER***

REACTIVITY DATA:

STABILITY:

UNDER NORMAL CONDITIONS:	***STABLE***
UNDER FIRE CONDITIONS:	***DECOMPOSES ABOVE 900F***
HAZARDOUS POLYMERIZATION:	***WILL NOT OCCUR***

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REACTIVITY DATA CONT'D:

CONDITIONS TO AVOID: ***AVOID EXCESSIVE AMOUNTS OF HEAT***
MATERIALS TO AVOID: ***- FUELS THAT CONTAIN THEIR OWN OXIDIZING AGENTS SUCH AS GUN POWDER, PROPELLANTS, CELLULOSE NITRATE, ORGANIC PEROXIDES, ETC.***
-REACTIVE METALS SUCH AS SODIUM, POTASSIUM, MAGNESIUM, TITANIUM, ETC.
-METAL HYDRIDES SUCH AS LITHIUM HYDRIDE.
-CHEMICALS CAPABLE OF AUTO-THERNAL DECOMPOSITION SUCH AS.
ORGANIC PEROXIDES AND HYDRAZINE.

HAZORDOUS DECOMPOSITION OR COMBUSTION PRODUCTS: HALONAIRE BEGINS DECOMPOSING AT TEMPERATURES ABOVE 900F (482C) TO GIVE FREE HALOGENS, HALOGEN ACIDS AND MINUTE QUANTITIES OF CARBONYL HALIDES.

SENSITIVITY TO STATIC CHARGE: ***NOT AVAILABLE***
EXPLOSIVE POWER: ***NOT AVAILABLE***
SENSITIVITY TO MECHANICAL IMPACT: ***NOT AVAILABLE***
RATE OF BURNING: ***NOT AVAILABLE***

SHIPPING DATA: (UNDER THE TDG ACT)

SHIPING NAME: ***BROMOCHLORODIFLUOROMETHANE & BROMOTRIFLUOROMETHANE***
PRODUCT NAME: ***HALONAIRE (HALON 1211 AND HALON 1301)***
SHIPPING CLASS/DIVISION: ***60 & 2.2***
PRODUCT IDENTIFICATION NO: ***UN 1044***
CANUTEC 24 HR EMERGENCY NO. 613-996-6666

FIRE AND EXPLOSIVE DATA:

FLASH POINT: ***DOES NOT FLASH***
AUTO-IGNITION TEMP ***NOT APPLICABLE***
FLAMMABILITY LIMITS IN AIR (%UEL &LEL): ***NOT APPLICABLE***
FIRE EXTINGUISHING MEDIA: ***NOT APPLICABLE***
FIRE FIGHTING PROCEDURES: ***USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS OR STRUCTURES. USE WATER SPRAY TO DISPERSE VAPORS; RE-IGNITION IS POSSIBLE. USE SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.***

OTHER FIRE OR EXPLOSIVE HAZARDS: ***WEAR SELF-CONTAINED BREATHING APPARATUS WITH FULL FACE PIECE AND PROTECTIVE CLOTHING WHEN RE-ENTERING UNVENTILATED AREAS WHERE HALONAIRE HAS BEEN USED.***

MATERIAL SAFETY DATA SHEET(PAGE 3)

FIRE AND EXPLOSIVE DATA (CONT'D):

OTHER PERSONAL PROTECTIVE EQUIPMENT:	***IMPERVIOUS APRON AND BOOTS. SAFETY AND EYE BATH LOCATED CLOSE TO CHEMICAL EXPOSURE AREA.***
HANDLING PROCEDURES AND EQUIPMENT:	***NOT APPLICABLE.***
STORAGE TEMPERATURE AND REQUIREMENTS:	***STORE IN AREAS UNDER 120F(49C) AND OVER –40F(-40C). KEEP AWAY FROM HEAT, SPARKS AND FLAMES (i.e. CONTAINERS).***
OTHER PRECAUTIONS:	***AFTER USED TO EXTINGUISH FIRE, VENTILATE AREA TO DISSIPATE COMBUSTION PRODUCTS. AVOID BREATHING VAPORS. AVOID CONTACT WITH EYES OR SKIN. WASH THPROUGHLY WITH SOAP AND WATER AFTER HANDLING.***

TOXICOLOGICAL AND HEALTH DATA:

RECOMMENDED EXPOSURE LIMIT:	***NO TLV ASSIGNED BY ACGIH. OUR RECOMMENDATION FOR OPERATING PERSONNEL IS THAT EMPLOYEE EXPOSURE SHOULD BE KEPT UNDER 3000PPM AS AN (8) HOUR TWA.***
CARCINOGENICITY DATA:	***THE INGREDIENTS OF THIS PRODUCT ARE NOT LISTED AS CARCINOGENS BY NTP (NATIONAL TOXICOLOGY PROGRAM) AND NOT REGULATED BY OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) AND HAVE NOT BEEN EVALUATED BY IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER) OR ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGENISTS).***
REPRODUCTIVE EFFECTS:	***NO INFORMATION IS AVAILABLE AND NO ADVERSE REPRODUCTIVE EFFECTS ARE ANTICIPATED.***
MUTAGENICITY DATA:	***NO ADVERSE MUTAGENIC EFFECTS ARE ANTICIPATED.***
TERATOGENIC DATA:	***NO INFORMATION IS AVAILABLE AND NO ADVERSE EFFECTS ARE ANTICIPATED.***
SYNERGISTIC MATERIALS:	***NONE KNOWN.***

MATERIAL SAFETY DATA SHEET (PAGE 4)

TOXICOLOGICAL AND HEATH DATA (CONT'D)

EFFECTS OF EXPOSURE WHEN:

-INHALED: EXPOSURE TO CONCENTRATIONS ABOVE 5% FOR LONGER THAN ONE MINUTE MAY CAUSE TOXIC SIDE EFFECTS.

-IN CONTACT WITH SKIN: EVAPORATION OF LIQUID FROM THE SKIN WILL PRODUCE A CHILLING SENSATION. SKIN INJURY DOES NOT RESULT.

SYSTEMATIC TOXIC CONCENTRATIONS ARE UNLIKELY TO BE ABSORBED THROUGH THE SKIN IN HUMANS.

-IN CONTACT WITH EYES: THE LIQUID FORM OF THIS MATERIAL CAN PRODUCE A CHILLING SENSATION AND DISCOMFORT.

-INGESTED: INGESTION IS NOT POSSIBLE SINCE THE MATERIAL IS A GAS AT ROOM TEMPERATURE.

OTHER HEALTH EFFECTS: PROLONGED EXPOSURES AT HIGHER THAN 5% CONCENTRATIONS MAY CAUSE DIZZINESS, HEADACHE, NAUSEA, IMPARED COORDINATION AND CARDIAC SENSITISATION. THIS IS HGOWEVER EXTREMELY UNLIKELY AS IT IS NOT POSSIBLE TO ACHIEVE CONC'NS OF 5% FOR EXTENDED PERIODS WITH PORTABLE HALONAIRE UNITS.

FIRST AID PROCEDURES WHEN:

-INHALED: REMOVE VICTIM TO FRESH AIR. IF COUGH OR OTHER RESPIRATORY SYMPTOMS DEVELOP, CONSULT MEDICAL PERSONNEL.

-IN CONTACT WITH SKIN: WASH MATERIAL FROM THE SKIN WITH COPIOUS AMOUNTS OF SOAP AND WATER. IF REDNESS, ITCHING OR A BURNING SENSATION DEVELOPS, CONSULT A DOCTOR.

-IN CONTACT WITH EYES: FLUSH IMMEDIATELY WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. IF REDNESS, ITCHING OR A BURNING SENSATION DEVELOPS, HAVE EYES EXAMINED AND TREATED BY MEDICAL PERSONNEL.

-INGESTED: GIVE 1 OR 2 GLASSES OF WARM WATER. GET MEDICAL ATTENTION. THIS SITUATION IS EXTREMELY UNLIKELY SINCE HALONAIRE IS A GAS AT ROOM TEMPERATURE.

EMERGENCY MEDICAL CARE: IN THE UNLIKELY EVENT THAT THE PERSON HAS BREATHED HIGH CONC'NS OF HALONAIRE, DO NOT GIVE ADRENALIN OR SIMILAR SYMATHOMIMETIC DRUGS. DO NOT ALLOW VICTIM TO EXERCISE UNTIL 24 HOURS FOLLOWING HIGH EXPOSURE.

FIRST AID PROCEDURES WHEN (CONT'D):

FREEZE BURNS OF MUCOSAL TISSUE CAN DEVELOP FOLLOWING CONTACT WITH LIQUID HALONAIRE.

ADDITIONAL SOURCES:

1. ***NFPA 12A (NATIONAL FIRE PROTECTION ASSOCIATION STANDARD HALON 1301)***

2. ***NFPA 12B (DITTO FOR HALON 1211 SYSTEMS)***

3. ***NATIONAL FIRE PROTECTION HANDBOOK***

4. ***PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, VOL. 11 A.B.C. CLAYTON, G.D. AND GLAYTON, F.E. ed., JOHN WILEY & SONS, NEW YORK 3RD ed. 1981.***

THE INFORMATION CONTAINED HEREIN IS OFFERED AS A GUIDE TO THE HANDLING OF PROTECTION R.T.'S HALONAIRE PRODUCT AND HAS BEEN PREPARED IN GOOD FAITH BY TECHNICALLY KNOWLEDGEABLE PERSONNEL.
IT IS NOT INTENDED TO BE ALL INCLUSIVE.

PREPARED BY:

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THIS MATERIAL SAFETY SHEET IS VALID FOR THREE YEARS.