

MATERIAL SAFETY DATA SHEET
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EMERGENCY PHONE NO.: (FOR SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT): 1-800-535-5053

***** **CIRCUIT WASH 11169, 11170, 11171** *****

**
 (Previously AERO CIRCUIT WASH 11169, 11170, 11171)

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Circuit Wash (aerosol)
 PRODUCT DESCRIPTION: A safe, non-flammable, non-toxic cleaning solvent of high dielectric strength. Quick drying time, residue-free, cleans all types of electronic equipment. Tested safe for most plastics.
 RESTRICTIONS: Commercial / industrial use only

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT NAME(S)	CAS#	OCCUPATIONAL EXPOSURE LIMITS	
		TLV OR PEL	ORAL LD-50
1,1-Dichloro-fluoroethane	1717-00-6	500 ppm (See below *)	5 gm / kg (rat)
Methyl Nona-Fluorobuty-ether	163702-07-6	600 ppm (See below**)	5 g/kg (rat)
Methyl nonafluoroiso-Butylether	163702-08-7	600 ppm (See below**)	5 g/kg (rat)
Carbon Dioxide	124-38-9	5000 ppm	N.E.

* Recommended Workplace Environmental Exposure Level (WEEL) as established by American Industrial Hygiene Association

** Minnesota Mining and Manufacturing Company (3-M) Medical Department developed exposure guideline
 Carcinogenic: **OSHA** = no **NTP** = no **IARC** = no

SECTION III - PHYSICAL DATA

APPEARANCE: Transparent liquid, no color
 ODOR: Slightly sweet, ethereal odor
 BOILING POINT: 90 degrees F. (32.22 degrees C.)
 VAPOR DENSITY (Air = 1): >1
 VAPOR PRESSURE: 4380 mmHg
 SOLUBILITY IN WATER: Nil
 SPECIFIC GRAVITY: 1.40
 EVAPORATION RATE (Ether = 1): >1

SECTION IV - FIRE AND EXPLOSION DATA

HMIS RATING: Health - 1, Fire - 0, Reactivity - 1
 FLASH POINT : Non-flammable
 FLAMMABLE LIMITS: LEL: N.A. UEL: N.A.
 EXTINGUISHING MEDIA: Dry chemical, CO2
 UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents decompose to produce irritating, toxic and corrosive gases. Heated containers may become over-pressurized and fail explosively.
 SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water fog.

SECTION V - HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES:
Eye Contact: Flush eyes with water for at least 15 minutes. Consult a physician.
Skin Contact: Wash affected area with soap and water. If irritation develops or persists, consult a physician.
Inhalation: Remove victim to fresh air, administer oxygen if necessary. If victim has stopped breathing begin CPR, get immediate medical attention.
Ingestion: If material is swallowed, consult a physician immediately. DO NOT induce vomiting unless physician directed. If spontaneous vomiting occurs, keep victim's head below hips to prevent aspiration of vomitus into lungs.
 MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Cardiovascular disease, pre-existing skin conditions
 PRIMARY ROUTES OF ENTRY: Inhalation, skin and eye contact.
 HEALTH HAZARDS (acute and chronic) / EFFECTS OF OVEREXPOSURE: Excessive inhalation of high vapor concentrations may cause dizziness, weakness, fatigue, nausea, headache, unconsciousness. Extreme inhalation overexposure may cause asphyxiation.

SECTION VI - REACTIVITY DATA

STABILITY: Stable under normal use and storage conditions.
 HAZARDOUS POLYMERIZATION: Will not occur.
 HAZARDOUS DECOMPOSITION PRODUCTS (under fire conditions): Hydrogen fluoride, perfluoroisobutylene, other toxic and corrosive gases.
 INCOMPATIBILITY: Avoid alkali or alkaline earth metals, finely divided reactive metals.
 CONDITIONS TO AVOID: Avoid contact with heat, flame, high-intensity energy sources.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove ignition / combustion sources, ventilate area. Take up spilled material on an inert, absorbant material and place into a DOT approved closed-top waste container for disposal. Prevent spilled material from entering sewers or drains.
 WASTE DISPOSAL: Comply with all existing Federal, State and Local environmental regulations. Waste or unwanted product may be reclaimed or incinerated by permitted facilities.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: Not normally required; mechanical (general) ventilation is generally adequate. Wear a NIOSH approved organic vapor respirator in nuisance-level vapor concentrations, a positive-pressure, air-supplied respirator in high vapor concentrations or oxygen-deficient atmospheres.
 PROTECTIVE GLOVES: Chemical resistant rubber or plastic
 EYE PROTECTION: Safety glasses, splash goggles, face shield
 OTHER PROTECTIVE EQUIPMENT: Eye wash station.

SECTION IX - SPECIAL PRECAUTIONS AND STORAGE DATA

PRECAUTIONS TO BE TAKEN IN HANDLING: Avoid eye and skin contact with liquid. Avoid excessive inhalation of vapors. Use in a well-ventilated environment. Intentional inhalation of contents is harmful and may be fatal.
 PRECAUTIONS TO BE TAKEN IN STORING: Store containers below 120°F (48°C), away from heat sources, open flame, out of direct sunlight.

SECTION X - SHIPPING DATA

(continued on page 2)

U.N/N.A. NUMBER: UN1950

DOT/IATE SHIPPING NAME: Aerosols, non-flammable, (each not exceeding 1L capacity)

DOT/IATA HAZARD CLASS: 2.2

DOT REQUIRED LABELS: 2, Non-flammable gas (air shipment only)

DOT EXCEPTION: See code 49 section 172.101, column (8A). Section 173.306(h) permits "limited quantity" materials (inner packagings which do not exceed 1L capacity / 61 cubic inches and for which internal pressures do not exceed 180 psig at 130 degrees F.) meeting section 171.8 definition of "consumer commodity" to be renamed "Consumer commodity" and reclassified as ORM-D when shipped via ground mode, domestically.

IMDG SHIPPING NAME: Aerosols, non-flammable, (each less than 1L capacity)

FREIGHT CLASS: NMFC 48580, Sub 3

LTL: 55

TL: 35

MW: 36

T.S.C.A. STATUS: All components listed

PREPARED BY: Roger Hanson

DATE PREPARED: 07-21-00 SUPERSEDES: 01-26-00

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N.E. = NOT ESTABLISHED

N.A. = NOT APPLICABLE