



MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<u>Company Name</u> Nu-Calgon Wholesaler, Inc.	<u>Phone Number</u> (314) 469-7000 / (800) 554-5499		<u>CHEMTREC</u> (800) 424-9300	
<u>Street Address</u> 2008 Altom Court	<u>City</u> St. Louis	<u>State</u> MO	<u>Postal Code</u> 63146-4151	<u>Last Update</u> 1/2/14
<u>Product Name</u> Pneu-flush	<u>Product Number</u> 4298	<u>Product Use</u> Air line flushing system.		<u>EPA Registration #</u> N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	% By Wt.	CAS Number	TLV	PEL
1,1,1,3,3-Pentafluorobutane	0-48.0	406-58-6	None Established AEL (Solvay) 500 ppm, 8 & 12 hr. TWA	None Established
1,1,1,2,3,4,4,5,5,5-decafluoropentane	45.0-96.0	138495-42-8	None Established AEL (DuPont) 200ppm, 8 & 12 hr TWA, 400ppm ceiling	None Established
Methanol	04.0	67-56-1	200 ppm TWA	AEL: 200 ppm (260 mg/m3) STEL: 250ppm(310 mg/m3)

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Colorless liquid with a slight ethereal odor. This product is not flammable. Liquid will irritate eyes and skin under repeated or prolonged exposure. Large quantities of product vapors displace air and can cause asphyxiation especially in confined spaces.

Potential Health Effects

Eyes: Moderate irritation. Persons wearing contact lenses should wear chemical protective safety glasses when exposed to this product.

Skin: For repeated contact: dry/chapped skin, risk of chronic dermatitis.

Ingestion: Harmful if swallowed. Irritating to the mouth, throat and stomach.

Inhalation: Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse or deliberate inhalation may cause death without warning.

Chronic Exposure: No Data.

Carcinogenicity: None of the components present in this material are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Medical Conditions Aggravated by Exposure: Preexisting disease of the heart, lungs, skin and eyes.

SECTION 4 – FIRST AID MEASURES

Eyes: Immediately flush with water. Remove any contact lenses and continue flushing for 15 minutes, lifting eyelids occasionally until no evidence of the chemical remains. If irritation develops or persists call a physician.

Skin: Wash promptly with soap and water. Remove contaminated clothing and shoes and replace with clean clothing.

Ingestion: DO NOT induce vomiting. Immediately give two glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

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

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: None; TCC/TOC°C/None; TCC/TOC°F

Autoignition Temp: No Data.°C/No Data.°F

Hazardous Products of Combustion: No Data.

Flammable Limits in Air: LEL/UEL: 7.5-9.0 (% by volume)

Extinguishing Media: CO2, dry chemical, water spray, water fog

Fire and Explosion Hazards: No Data.

Special Firefighting Procedures: Evacuate personnel. Wear self contained breathing apparatus (SCBA) and full protective equipment. Decomposition may occur. Drums may build pressure and rupture under fire conditions.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Evacuate area, absorb spilled liquid with commercial, nonflammable absorbent i.e. sand, vermiculite. Remove unprotected personnel. Protected personnel should remove ignition sources and shut off fire sources. Provide ventilation. Shovel (spark proof) absorbent material into drums and close. Do not flush to sewer.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Avoid breathing vapors or mist. Use only with adequate ventilation. Avoid repeated or prolonged contact with eyes, skin or clothing. Wash thoroughly after handling.

Storage Requirements: Do not store in direct sunlight. Store in cool dry place, away from heat, sparks or flames which may generate toxic decomposition products. Vapors are heavy and may concentrate in low poorly ventilated areas. Keep away from children.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Use only with adequate ventilation. Keep container tightly closed. Use approved NIOSH self-contained or supplied air respirators for emergencies and in situations where air may be displaced by vapors.

Eye Protection: Use chemical protective safety glasses.

Protective Clothing: Where there is potential for skin contact, use appropriate impervious gloves, apron, pants and jacket.

Exposure Guidelines: See Section 2.

Specific Engineering Controls (such as ventilation, enclosed process): No Data.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: liquid	Freezing Point: No Data.°C/No Data.°F	% Volatile by Weight: 100%
Color: Clear colorless	Vapor Density [air =1]: 4	Evaporation Rate: No Data.
Odor: Slight Ethereal	Vapor Pressure: (Estimated) 65 kilopascals at 20o C /77o F	Specific Gravity: <1.34
Boiling Point: 45°C/113°F	Solubility in Water: Slight	pH (concentrate): Neutral

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Material is stable.

Hazardous Polymerization: Will not occur.

Incompatibilities: Alkali or alkaline earth metals powdered Al, Zn, Be, Na, Mg, etc. Incompatible w/strong bases such as NaOH, KOH, etc.

Reactive Conditions to avoid: No Data.

Decomposition Products: Decomposes with heat. High temperatures (open flame, glowing metal surfaces, etc.) can decompose forming hydrofluoric acid and possibly carbonyl fluoride. This material is incompatible with strong bases and can react to form salts of hydrofluoric acid and unsaturated compounds of unknown toxicity.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients

Toxicity information for the two primary components of this product are listed below.

1,1,1,3,3-Pentafluorobutane: Oral LD50>5,000 mg/kg in rats. Dermal LD > 2,000 mg/kg in rats. Inhalation, 4 hour LC50, rat: 301 mg/liter. Animal testing indicates that 1,1,1,3,3, pentafluorobutane is not a skin irritant for rabbits. It is a slight eye irritant for rabbits. It is not an irritant of the respiratory tract for rats. No sensitization was observed in Guinea Pigs.

This material is currently undergoing chronic toxicity testing. 1,1,1,2,3,4,4,5,5,5-decafluoropentane: Oral LD50>5,000 mg/kg in rats. Dermal ALD > 5,000 mg/kg in rabbits. Inhalation, 4 hour LC50: 11,100 ppm in rats. Animal testing indicates that 1,1,1,2,3,4,4,5,5,5-decafluoropentane is a slight skin irritant and a mild eye irritant, but is not a skin sensitizer. Single exposure to 5,000 ppm by inhalation caused tremors. No cardiac sensitization was observed. A different single exposure study by inhalation in rats caused incoordination, hyperactivity and prostration; pathological examination of rats from this study revealed kidney and lung changes and external hair loss. Repeated exposures to 1,900-3,500 ppm caused tremors or convulsions, behavioral effects, and altered clinical chemistry. These effects were temporary. In a different repeated exposure test the No Observed Adverse Effect Level (NOAEL) for convulsions was 1,000 ppm. Results indicate convulsions is an acute effect of 1,1,1,2,3,4,4,5,5,5-decafluoropentane. The 90 day NOAEL is 500 ppm. In animal testing this material produced developmental effects only at exposure levels producing other toxic effects in the adult animal. No animal data are available to define the carcinogenic or reproductive hazards of this material. Tests have shown that 1,1,1,2,3,4,4,5,5,5-decafluoropentane does not cause genetic damage in bacterial mammalian cell cultures. It has not produced genetic damage in tests on animals.

SECTION 12 – ECOLOGICAL INFORMATION

<u>Hazardous Ingredients</u>	<u>Aquatic Toxicity Data</u>
1,1,1,2,3,4,4,5,5,5-decafluoropentane:	96 hour LC50 in fathead minnows: 27.2 mg/L 96 hr LC50 in rainbow trout: 13.9 mg/L 48 hour LC50 in Daphnia magna: 11.7 mg/L
1,1,1,3,3-Pentafluorobutane:	96 hour LC50 in Zebra fish : >200 mg/L 48 hour NOEC in Daphnia magna: >200 mg/L 72 hour NOEC in Algae: 113 mg/L
	None of the components present in this material are ozone depleting substances. This material contains 4% VOC content by weight.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Reclaim by distillation or remove to a permitted waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: Not regulated as a hazardous material by DOT, IMO, or IATA.

<u>Purview</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT (Land)	Limited Quantity<, Compressed Gases, n.o.s.	1956		Non-flammable gas
IMO (Water)	Not Regulated.			
ICAO (Air)	Not Regulated.			

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification: (Workplace Hazardous Material Information System)	Class A - Compressed Gas.
SARA Title III: (Superfund Amendments & Reauthorization Act)	Acute Yes; Chronic No; Fire No; Reactivity No; Pressure No This material contains the following toxic chemicals subject to the emergency reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40 CFR 372: CaS# Chemical Name % by Weight 67-56-1 Methanol 4 % SARA Extremely Hazardous Substance No; SARA Toxic Chemicals No.
OSHA: (Occupational Safety & Health Administration)	No Data.
TSCA: (Toxic Substance Control Act)	No Data.
VOC: (volatile Organic Compounds)	No Data.
CPR: (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.
EINECS: (European Inventory of Existing Commercial Chemical Substances)	No Data.
DSL / NDSL: (Canadian Domestic Substance List)(Non-Domestic Substance List)	No Data.
CERCLA: (Comprehensive Response Compensation & Liability Act)	CERCLA Hazardous Substance: No
IDL: (Canadian Ingredient Disclosure List)	No Data.
NFPA (HMIS) Rating: (Hazardous Materials Identification System)	Health 1 Flammability 0 Reactivity 1

SECTION 16 – OTHER INFORMATION

No Data.

The information contained herein is based on the data available to us and is believed to be correct. However, Nu-Calgon Wholesaler Inc. makes no warranty, expressed, or implied, regarding the accuracy of this data or the results to be obtained from the use thereof. Nu-Calgon Wholesaler Inc. assumes no liability for injury from the use of the product described herein.