

Head, Red & Roll Cleaner™ (HR&R)

tape path & magnetic head cleaner, general purpose cleaner & degreaser for professional use

MATERIAL SAFETY DATA SHEET

Page 1 of 3

1. Chemical Product and Company Identification

Product Name: Head, Red & Roll Cleaner

Chemical Family: Azeotropic hydrofluorocarbon (HFC) blend.

Packaged By: MDI PrecisionMotorWorks Hudson, MA 01749 USA

Emergency Telephone: CHEMTREC (800) 424-9300

2. Composition / Information on Ingredients

Chemical Name	% by Wt	TLV Units
1,1,1,2,3,4,4,5,5,5-decafluoropentane CAS# 138495-42-8	25% - 32%	See Section 7
Trans,1,2-dichloroethylene CAS# 156-60-5	40% - 55%	See Section 7
1,1,1,3,3,Pentafluorobutane CAS# 406-58-6	25% - 32%	See Section 7
2-Propanol (Isopropanol) CAS# 67-63-0	10% - 12% by vol	See Section 7

All components of this material are listed on the TSCA inventory.

3. Hazard Identification

Emergency Overview: Colorless liquid with a slight ethereal odor.

This product is nonflammable. Liquid will irritate eyes and skin under repeated or prolonged exposure. 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. Medical Conditions Aggravated by Exposure: Preexisting disease of the heart, lungs, skin and eyes.

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.

5. Firefighting Measures

Flash Point: Not flammable per Tag Closed Cup (ASTM D 56) and Pinsky-Martins Closed Cup (ASTM D 93).

Flammable Limits in air: LEL/UEL: 4.3 - 13.5 (% by volume)

Extinguishing Media: CO₂, dry chemical, water spray, water fog
Special Firefighting Procedures: Evacuate personnel. Wear self contained breathing apparatus (SCBA) and full protective equipment. Containers generate pressure when heated causing violent bursting and dangerous propelling of container. May form toxic decomposition products above 480 deg. F/ 250 deg. C.

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.

6. Handling and Storage

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

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.



7. 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: Applicable Exposure Limits:

1,1,1,2,3,4,4,5,5,5-decafluoropentane:

PEL (OSHA) None Established

AEL (DuPont) 200 ppm, 8 & 12 hr. TLV 400 ppm ceiling

TLV (ACGIH) None Established

Trans,1,2-dichloroethylene:

PEL (OSHA) 200 ppm, 790 mg/m³, 8 hour TWA

TLV (ACGIH) 200 ppm STEL, 8 hour TWA

AEL (DuPont) 200 ppm, 8 & 12 hour TWA

1,1,1,3,3-Pentafluorobutane:

PEL (OSHA) None Established

AEL (DuPont) 200 ppm TWA

TLV (ACGIH) None Established

2-Propanol (Isopropanol):

OSHA P (PEL): 400 ppm (TWA)

ACGIH Threshold Limit Value (TLV): 200 ppm (TWA),
400 ppm (STEL),

A4 - not classifiable as a human carcinogen.

NFPA, NPCA-HIMIS RATING:

Health 1	Flammability 0	Reactivity 1
Personal Protection rating to be supplied by user depending on use conditions.		

8. Physical and Chemical Properties

Physical Form:	Clear colorless liquid
Odor:	Slight Ethereal
Boiling Point:	41 deg. C / 106 deg. F estimated
Solubility in Water:	0.4%
% Volatile by Weight:	100
Vapor Pressure:	5.5 psia at 20 deg. C / 77 deg. F
Vapor Density (air=1):	3.4
Evaporation rate (Ether = 1):	>1

9. 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.

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.

10. Toxicological Information

Toxicity information for the individual components of this product are listed below. 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 effect 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.

Trans,1,2-dichloroethylene (t-DCE): A severe eye irritant and a moderate to severe skin irritant. Single and repeated exposure by ingestion caused increased kidney weight, histopathological changes of the lungs, liver effects, decreased motor activity, pulmonary edema, cardiovascular system changes, and mortality. Single and repeated exposure to t-DCE by inhalation caused pathological changes of the liver and lungs, inactivity/ anaesthesia, altered white blood cell count, cardiovascular system changes and weak cardiac sensitization, a potentially fatal disturbance of the heart rhythm caused by heightened sensitivity to the action of epinephrine. Long term exposure caused altered liver and lung function. A Dec. 1998 inhalation study conducted with 99.45 pure t-DCE produced no adverse, compound related effects. The NOEL was 4,000ppm. Exposure of pregnant rats shows maternal toxicity at 2,000, 6,000 & 12,000ppm. Developmental toxicity was seen only at 12,000 ppm. Tests have shown that T-DCE does not cause genetic damage in bacterial or mammalian cell cultures. No animal data are available to define the carcinogenic or reproductive hazards of t-DCE.

1,1,1,3,3-Pentafluorobutane: No Federal OSHA PEL (29 CFR 1919.1000) or ACGIH TLV values are established for this chemical. The manufacturer of this material (Solvay) has established an AEL as an 8 hour & 12 hour TWA of 500 ppm. Where governmentally imposed occupational exposure limits which are lower than the above AEL are in effect, such limits shall take precedence.

2-Propanol (Isopropanol): Oral rat LD50: 5045 mg/kg; skin rabbit LD50: 12.8 gm/kg; inhalation rat LC50: 16,000 ppm/8-hour; investigated as a tumorigen, mutagen, reproductive effector.

Conditions aggravated/Target organs: Persons with preexisting skin, eye, respiratory disorders may be more susceptible. Acute: Irritation to skin, eyes, lungs, mucous membranes and GI tract, nausea, narcosis, drowsiness, dizziness. Chronic: Dermatitis, eye damage.

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

11. Ecological Information

Aquatic Toxicity:

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

Trans,1,2-dichloroethylene

96 hour LC 50 in bluegill sunfish: 1350 mg/L
 48 hour LC50 in Daphnia magna: 220 mg/L

2-Propanol (Isopropanol):

The LC50/96-hour values for fish are over 100 mg/l. This material is not expected to be toxic to aquatic life. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.



12. 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.

13. Transportation Information

Ground Transport: Not Hazardous, Not Regulated
Air Transport: Not Hazardous, Not Regulated

14. Regulatory Information

Section 313 Supplier Information: 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:

<u>CAS#</u>	<u>Chemical Name</u>	<u>% by Weight</u>
	NONE CONTAINED	

This information must be included in all MSDSs that are copied and distributed for this material.

Title III Hazard Communications Sections 311, 312

Acute:	Yes
Chronic:	No
Fire:	No
Reactivity:	No
Pressure:	No

Lists:

SARA Extremely Hazardous Substance	No
CERCLA Hazardous Substance	No
SARA Toxic Chemicals	No

15. Other Information

For additional information, contact support at:
 MDI PrecisionMotorWorks
 Tel.: (978) 562-4420
 email: info@PrecisionMotorWorks.com