CHEMTRONICS®

TDS # 1677

Technical Data Sheet

Pow-R-Wash™ PN New & Improved!

Contact Cleaner

PRODUCT DESCRIPTION

Pow-R-Wash™ PN New & Improved! Contact Cleaner is a highly effective solvent cleaner for electrical and electronic components and assemblies. This cleaning agent is both nonflammable and safe for use on plastics and metals.

- Same great features as original, without HCFC-141b
- Rapidly cleans dirt, oils, carbon, grease and other contaminants
- Nonflammable
- Excellent material compatibility
- Displaces moisture
- Evaporates fast
- Leaves no residues
- Enhances electrical signal
- Low toxicity
- Available with All-Way Spray valve
- Patent Pending

TYPICAL APPLICATIONS

Pow-R-Wash™ PN New & Improved! Contact Cleaner effectively cleans and degreases:

- Printed Circuit Boards
- Circuit Breakers
- Electrical Motors
- Potentiometers
- Contacts and Relays
- Motors and Generators
- Selector Switches
- Solenoids

TYPICAL PRODUCT DATA AND PHYSICAL PROPERTIES

Boiling Point	99°F (Initial)
Evaporation Rate (butyl acetate=1)	>1
Flash Point (TCC)	None
Specific Gravity	1.29
Vapor Pressure @68°F	165 mmHg
Appearance	Clear, colorless liquid
Odor	Ethereal Odor
Solubility in Water	Negligible
Dielectric Breakdown (ASTM D-877)	26 kV
Shelflife	5 years
RoHS/WEEE Status	RoHS WEEE Compliant

COMPATIBILITY

Pow-R-Wash™ PN New & Improved! Contact Cleaner has excellent compatibility with most materials used in the electronics industry. With any cleaning agent, compatibility with substrate should be determined on a non-critical area prior to use.

Material	Compatibility
ABS	Excellent
Buna-N	Excellent
EPDM	Excellent
Graphite	Excellent
HDPE	Excellent
Kynar™	Excellent
LDPE	Excellent
Lexan™	Good
Neoprene	Excellent
Noryl®	Excellent
Nylon™ 66	Excellent
Cross-Linked PE	Excellent
Polypropylene	Excellent
Polystyrene	Good
PVC	Excellent
Silicone Rubber	Excellent
Teflon™	Excellent
Viton™	Excellent

Performance	
Grease Removal per gram solvent (mg)	
Pow-R-Wash PN New & Improved!	**2.2**
HFC-based Cleaner	**0.5**
Grease & Lubricating Oil Removal per gram solvent (mg)	
Pow-R-Wash PN New & Improved!	**7.4**
HFC-based Cleaner	**0.5**

USAGE INSTRUCTIONS

For commercial use only.
Read MSDS carefully prior to use.
Spray 4-6 inches from surface to clean. Wash parts from top to bottom, allowing the liquid to flush away dirt and dissolved oil and grease.
For precise application use attached extension tube.

AVAILABILITY

ES 1677 12 oz. Aerosol

ENVIRONMENTAL IMPACT DATA

ENVIRONMENTAL IMPACT DATA			
CFC	0.0%	VOC	15.2%
HCFC-225	35.0%	HFC	47.9%
HCFC-141b	0.0%	nPB	0.0%

CFC, HCFC-225, HCFC-141b, VOC, HFC and nPB percentages shown are the content by weight.

NOTE:

This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. ITW CHEMTRONICS® does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Information: 800-TECH-401

Product Identification

Pow-R-Wash® PN

Product Code: ES1677

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. % Range
Pentafluorobutane	406-58-6	20.0-50.0
HCFC-225ca	422-56-0	10.0-20.0
HCFC-225cb	507-55-1	10.0-20.0
Perfluorocarbons	86508-42-1	10.0-20.0
Trans-1,2-dichloroethylene	156-60-5	10.0-20.0
Isohexanes	8030-30-6	1.0-5.0
1,1,1,2-Tetrafluoroethane	811-97-2	5.0-30.0
Carbon Dioxide	124-38-9	1.0-5.0

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview: Clear, colorless liquid with faint ethereal odor. This product is nonflammable. Liquid may irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product vapor may produce dizziness and nausea.

Potential Health Effects:

Eyes: Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin: Prolonged contact can cause skin irritation, including redness, burning, drying and/or cracking of skin..

Ingestion: May be harmful if swallowed. Swallowing this material may result in nausea, vomiting and weakness followed by central nervous system depression.

Inhalation: Can be harmful if inhaled. High concentrations of vapors in immediate area can cause dizziness, nausea, vomiting, unconsciousness and death.

SECTION 4: FIRST AID MEASURES

Eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel if irritation develops or persists.

Skin: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persist. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting. If conscious, give 2 glasses of water. Never give anything by mouth to an unconscious person. Keep head below knees to minimize chance of aspirating material into the lungs. Get medical attention immediately.

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: None to boiling(TCC)

Extinguishing Media: Use water spray or fog, CO_2, dry chemical or water stream when fighting fires involving this material.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus (pressure-demand, MSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spills: Shut off leak if possible and safe to do so. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container for proper disposal. Do not flush to sewer. Avoid runoff into storm sewers and ditches which lead to waterways.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with eyes, skin, and clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor or mist. Do not reuse this container. Store in a cool dry place away from heat, sparks and flame. Do not store in direct sunlight.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

CHEMICAL NAME	ACGIH TLV	OSHA PEL	OTHER
HCFC-225ca	not established	not established	100 ppm*
HCFC-225cb	not established	not established	100 ppm*
Pentafluorobutane	not established	not established	
Perfluorocarbons	not established	not established	
trans-1,2-Dichloroethylene	200 ppm	200 ppm	
1,1,1,2-Tetrafluoroethane	not established	not established	1000 ppm*
Isohexanes	500 ppm	not established	1000 ppm

***** Supplier's Occupational Exposure Limit

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. If vapor concentration exceeds TLV, use NIOSH approved organic vapor cartridge respirator. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves.

NFPA and HMIS Codes:	NFPA	HMIS
Health	1	1
Flammability	0	0
Reactivity	1	1
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear, colorless liquid
Odor: Ethereal Odor
pH: NA
Vapor Pressure: 294 mm Hg @ 68 F
Boiling Point: 99°F (37C)
Solubility in Water: Negligible
Specific Gravity: 1.35
(Water =1)
Evaporation Rate: >1 (Butyl acetate=1)
Percent Volatile: 100%

SECTION 10: STABILITY AND REACTIVITY

Stability - This product is stable.
Conditions to Avoid: Steam, oxidizers, elevated temperatures. Do not spray near open flames, red hot surfaces or other sources of ignition.
Incompatibility: Do not mix with alkali metals, pure oxygen, strong base, open flames, and welding arcs. This product should not be used in long term contact with aluminum or zinc or their alloys.
Products of Decomposition: Thermal decomposition may release carbon monoxide, carbon dioxide and incompletely burned hydrocarbons as well as hydrochloric and hydrofluoric acid vapor.
Hazardous Polymerization: Will not occur
Conditions to Avoid: Finely divided active metals, alkali and alkaline earth metals

SECTION 11: TOXICOLOGICAL INFORMATION

Inhalation:

AK225ca / AK225cb	LC50 rat 37,300 ppm/36,800 ppm (4hr)*
trans-1,2-Dichloroethylene	LC50 rat 24,100 ppm (4hr)*
Tetrafluoroethane	Rat ALC 567,000ppm/4hrs*
Pentafluorobutane	LC50 rat >10% / 4hr*

Ingestion:

AK225ca / AK225cb	LD50/rat >5000 mg/kg*
trans-1,2-Dichloroethylene	LD50/rat >5,000 mg/kg*
Pentafluorobutane	LD50 rat >2,000 mg/kg*

Skin

AK225ca / AK225cb	LD50rabbit	>2,000 mg/kg*
trans-1,2-Dichloroethylene	LD50rabbit	>5,000 mg/kg*
Pentafluorobutane	rabbit	not an irritant*

Eye:

AK225ca / AK225cb	Not an irritant*
trans-1,2-Dichloroethylene	MOD-SEV*
Pentafluorobutane	rabbit SL*

*Information provided by manufacturer.
Cancer Information: No ingredients in this product are listed as human carcinogens by IARC or NTP.
Reproductive effects: none Teratogenic effects: none Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

REPORTING

US regulations require reporting spills of this material that could reach any surface waters.
The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATION

	Proper Shipping Name	UN Number	Class	Sub. Risk	Pkg. Group	Hazard Label	Pkg. Instr.	Max. Quantity
Air:	Aerosols non-flammable	UN 1950	2.2	NA	NA.	Non-flammable	203	75 k.g; 150k.g.
Ground:	Consumer Commodity ORM-D		NA	ORM-D	NA	NA	ORM-D Auth.	Pkg. 173.306

SECTION 15: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION
This product contains the following chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

Chemical Name	CAS No.	Wt. % Range
HCFC-225ca	422-56-0	10.0-20.0
HCFC-225cb	507-55-1	10.0-20.0

This information should be included on all MSDSs copied and distributed for this material.
TOXIC SUBSTANCES CONTROL ACT (TSCA).
All ingredients of this product are listed on the TSCA Inventory.
WHMIS: Class A; Class D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION

This product is a Level 1 aerosol. Do not puncture or incinerate containers. Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.