CHEMTRONICS[®] 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-WashTM 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 | >1 |
| (butyl acetate=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.

TDS # 1677

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

| Performance | | | | | | |
|---|--------------------|--|--|--|--|--|
| Grease Removal per gram s | solvent (mg) | | | | | |
| Pow-R-Wash PN | 2.2 | | | | | |
| New & Improved! | | | | | | |
| HFC-based Cleaner | 0.5 | | | | | |
| Grease & Lubricating Oi solvent (mg) | l Removal per gram | | | | | |
| 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, CO2, 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.

Personal Protection

| SECTION 8: EXPOSUR | E CONTROLS/PERSONAL PROTECT | ION | | |
|-----------------------------|---|------------------------------|-------------------------------------|-----------------------------------|
| 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 | ent to control airborne leve | els. If vapor concentration exceeds | s TLV, use NIOSH approved organic |
| vapor cartridge respirator. | Wear safety glasses with side shields (or go | oggles) and rubber or othe | r chemically resistant gloves. | |
| NFPA and HMIS Codes: | | NFPA | | |
| Health | | 1 | 1 | |
| Flammability | | 0 | 0 | |
| Reactivity | | 1 | 1 | |

В

| | ® | | | | | | | |
|--|--|------------------------------|---------------------------------------|---------------------------|---------------------------------------|-----------------------|----------------|-------------|
| ITW CHE | EMTRONICS | | | | | | MSDS #1 | 677 |
| SECTION | N 9: PHYSICAL AND C | HEMICAL PROPERT | IES | | | | | |
| | tate: Clear, colorless liqu | | | Solubility in W | Vater: Negligible | | | |
| Odor: Ethereal Odor | | | Specific Gravi | <u>ty:</u> 1.35 | | | | |
| <u>pH:</u> NA | | | (Water =1) | | | | | |
| | ssure: 294 mm Hg @ 68 l | F | | | ate: >1 (Butyl aceta | te=1) | | |
| Boiling Po | <u>oint:</u> 99°F (37C) | | | Percent Volati | <u>le:</u> 100% | | | |
| SECTION | N 10: STABILITY AND | REACTIVITY | | | | | | |
| | This product is stable. | | | | | | | |
| | s to Avoid: Steam, oxidiz | | | | | | | |
| | bility: Do not mix with al | kali metals, pure oxygen, | strong base, open fl | ames, and welding arcs | This product shou | ld not be used in lo | ong term conta | act with |
| | or zinc or their alloys. | | · · · · · · · · · · · · · · · · · · · | | ····· | d haadaa aa da ama aa | | -1-1 |
| | of Decomposition: Therm ric acid vapor. | al decomposition may rel | ease carbon monoxi | ide, carbon dioxide and | incompletely burne | a nydrocardons as | well as hydro | chioric and |
| | Polymerization: Will no | t occur | | | | | | |
| | s to Avoid: Finely divided | | alkaline earth meta | ls | | | | |
| | N 11: TOXICOLOGICA | | | | | | | |
| Inhalation | | LINFORMATION | | Ingestion: | | | | |
| | / AK225cb | LC50 rat 37,300 ppm// | 36 800 ppm (4hr)* | AK225ca / AK225cb | LD | 50/rat >5000 mg/ | ko* | |
| | Dichloroethylene | LC50 rat 24,100 ppm (| | trans-1,2-Dichloroet | | 50/rat > 5,000 mg/ | | |
| Tetrafluor | | Rat ALC 567,000ppm | | Pentafluorobutane | | 50 rat >2,000 mg/ | | |
| Pentafluor | obutane | LC50 rat >10% / 4hr | k | | | - | - | |
| Skin | | | | Eye: | | | | |
| | / AK225cb | LD50rabbit >2,0 | 000 mg/kg* | AK225ca / AK225cl | h No | t an irritant* | | |
| | Dichloroethylene | | 000 mg/kg* | trans-1,2-Dichloroet | | D-SEV* | | |
| Pentafluor | | | ot an irritant* | Pentafluorobutane | 2 | bit SL* | | |
| *Informati | ion provided by manufactu | urer. | | | | | | |
| Cancer Inf | formation: No ingredients | in this product are listed | | | | | | |
| Reproduct | ive effects: none | | Teratogenic effect | ts: none | 1 | Mutagenic effects: | none | |
| SECTION | N 12: ECOLOGICAL IN | FORMATION | | | | | | |
| Avoid run | off into storm sewers and | ditches which lead to way | terways. Water runc | off can cause environme | ental damage. | | | |
| REPORT | | | | | | | | |
| | tions require reporting spi | | | | | | | |
| The toll from | ee number for the US Coa | st Guard National Respor | se Center is: 1-800- | -424-8802 | | | | |
| | N 13: DISPOSAL CONS | | | | | | | |
| Dispose of | f in accordance with all fe | ederal, state and local regu | lations. Water rund | off can cause environme | ental damage. | | | |
| SECTION | N 14: TRANSPORTATI | ON INFORMATION | | | | | | |
| | Proper | | Su | 8 | Hazard | Pkg. | Max. | |
| | Shipping Name | UN Number | Class Ri | | Label | Instr. | Quantity | |
| <u>Air:</u> | Aerosols non-flammable | UN 1950 | 2.2 NA | | Non-flammable | 203 | 75 k.g; 15 | U |
| Ground: | Consumer Commodity | | NA | ORM-D NA | NA | ORM-D | Pkg. | 173.306 |
| | ORM-D | | | | | Auth. | | |
| | N 15: REGULATORY I | | | | | | | |
| | 313 SUPPLIER NOTIFI | | | | | | | |
| - | act contains the following | chemicals subject to the | reporting requireme | ents of Section 313 of th | he Emergency Planr | ing and Communi | ty Right-To-K | know Act of |
| 1986 (40 C Chemical | · · · · · · · · · · · · · · · · · · · | | C | AS No. | , | Wt. % Range | | |
| | | | | 2-56-0 | | 10.0-20.0 | | |
| | | 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 | | | | | | | | |
| | ict is a Level 1 aerosol. I | | ate containers. Nor | mal ventilation for stan | dard manufacturing | practices is usually | adequate. L | ocal |
| | ould be used when large a | | | | | | | |
| 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 | | | | | | | | |

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.