

Type RP™ Rapid Power Cleaner



TECHNICAL DATA SHEET

Description:

Type RP™ Cleaner effectively cleans semi-conducting cable shield, corrosion inhibiting compound, silicone greases, filling gels, transformer oils and many other contaminants found in electrical construction and maintenance.

Type RP™ Cleaner evaporates quickly and does not leave a residue. Type RP™ has excellent dielectric properties and is non-conductive. Type RP™ Cleaner is compatible with most materials and plastics, including polycarbonate.

Type RP™ Cleaner is available in convenient pre-saturated towelettes. Use of individual towels limits solvent exposure and eliminates spill hazard.

Cleaning Properties:

Type RP™ Cleaner meets IEEE 1493 performance criteria¹. It effectively cleans semi-conducting cable shield. A towel saturated with cleaner quickly removes the compound and becomes visibly black. Type RP™ Cleaner dissolves a broad range of contaminants.

Type RP™ Cleaner has excellent solvency across a broad spectrum of grimes. Contaminant grease is spread onto a polyethylene plaque with 6 mm thick ribbons. The plaque is immersed in RP™ Cleaner and agitated. Cleaning time is noted.

Contaminant

Cleaning Time

Silicone Grease, DC #4 <60 seconds

Dielectric Oil <30 seconds

Hydrocarbon Grease <30 seconds

Aluminum Oxide Grease <60 seconds

¹ Tested using methods from IEEE 1493, "Guide for the Evaluation of Solvents Used for Cleaning Electrical Cables and Accessories."



Type RP™ Rapid Power is fast evaporating and effective

Product Benefits:

- Fast Evaporation
- Excellent Solvency
- No Residue
- Non-Conductive
- Contains No Chlorinated Solvents
- Compatible with Most Plastics and Rubbers

End Use:

- Splicing and Terminating Cables
- Cleaning Relays, Generators, Motors, Circuit Boards and other Electrical Equipment
- Maintaining Transformers and Switch Gear
- Preparing Surfaces for Adhesives, Sealants and Tapes

Performance Properties:

<u>Property</u>	<u>Result</u>
Cleaning Effectiveness	Excellent
Dielectric Strength 100 mil gap (ASTM D877):	56 KV
Evaporation Rate	Fast (similar to alcohol)
Residue (ASTM D2369)	<100 ppm (None)

Usage Directions:

To prepare cable for splice, buff the insulation with the abrasive strip to remove any conductive material remaining on the insulation. The surface should be smooth with no particle contaminants.

Clean the cable insulation with the Type RP™ Cleaning Wipe. Wipe away from the conductor towards the insulation shield. Turn the solvent towelette after each wipe, using a fresh portion of the towel each time. It is important not to wipe material from the insulation onto the insulation shield. Do not wipe the insulation shield. RP™ Cleaning Wipes can also be used to clean the cable jacket for improved adhesion of mastics and tapes used in splicing and termination.

For general electrical cleaning, follow manufacturers' instruction. RP™ Cleaning Wipes are fast evaporating. Do not open until ready to use.

Environmental Impact:

Type RP™ Cleaner is a safer alternative to chlorinated solvents.

<u>Property</u>	<u>Result</u>
VOC Content	720 grams/liter
Global Warming Potential	Does not contain global warming compounds
Ozone Depletion Potential	None
CFC, HCFC, HFC Content:	None
RCRA	Not regulated as hazardous waste
CERCLA/SARA Status	Not regulated as a hazardous substance

Safety:

Type RP™ Cleaner has a low level of toxicity and does not contain any listed carcinogens. It is flammable and should not be exposed to fire or flame. Towelette package limits hazard. Good industrial hygiene practice and appropriate precautions should be employed during use. See SDS for specific details.

PEL-PAC® System

Type RP™ Cleaner pre-saturated towelettes are a convenient package with multiple safety benefits.

Control

Pre-saturated wipes minimize solvent exposure on sensitive electrical parts. Directly spraying or immersing the part allows the solvent to puddle into small openings. Wipe cleaning will also ensure that the solvent evaporates more quickly.

Safety

The pre-saturated towelette package eliminates spill hazard and limits solvent vapor exposure. Wipes contain a carefully measured quantity of solvent and are an excellent way to control vapor. Type RP™ Cleaner pre-saturated towelettes are a great choice for underground or confined space applications.

Convenience

Each PEL-PAC® package utilizes non-linting, non-tearing towels. Clean wipes are always available, eliminating recontamination of parts with dirty rags.



Convenient pre-saturated towelettes (RP-1L, RP-1) control solvent exposure.

Physical Properties:

Type RP™ Cleaner is a high-purity solvent with low aromatic content.

<u>Property</u>	<u>Result</u>
Flashpoint (ASTM D93)	19°F (-7°C)
Initial Boiling Point	144°F (62°C)
Specific Gravity	0.72

Compatibility:

Type RP™ Cleaner is compatible with most plastics and rubbers. It meets standard electrical utility test requirements based on IEEE 1493.

Plastic Materials - LLDPE

LLDPE jacket material immersed in Type RP™ Cleaner retains tensile and elongation characteristics and shows minimal weight change¹.

Rubber Materials – EPDM and Silicone Rubber

Platen samples of EPDM and Silicone Rubber immersed in Type RP™ Cleaner retain tensile and elongation characteristics and show minimal weight change¹.

Volume Resistivity of Cable Insulation Shield

Cables with either XLPE or EPR insulation show acceptable volume resistivity values after immersion in Type RP™ Cleaner¹. After exposure to the cleaner, volume resistivity measurements return to control levels.

Corrosivity:

Type RP™ Cleaner will not corrode or stain metal parts. It does not tarnish or corrode copper².

Polycarbonate:

Injection-molded plaques of polycarbonate are cut into bars, and bent in a three-point fixture. "Strain limit" is the greatest percent strain where no stress cracking occurs. A strain limit greater than 0.5% indicates strain resistance.

Strain Limit > 0.5% (Stress Crack Resistant)³

¹ Tested using methods from IEEE 1493, "Guide for the Evaluation of Solvents Used for Cleaning Electrical Cables and Accessories."

² Testing based on ASTM D130, "Standard Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test."

³ Testing based on Mobay Corporation, Plastics and Rubber Division, "Chemical Compatibility Test for Unreinforced Thermoplastic Resins, 1989."

Soak Testing:

Materials are immersed in Type RP™ Cleaner for 7 days at 22°C (72°F). Some rubbers will swell, but should return to their original state once the cleaner evaporates. Wipe cleaning minimizes solvent exposure.

<u>Plastics</u>	<u>% Weight</u>	
	<u>Change</u>	<u>Appearance</u>
ABS	+4.09	NC
Acrylic	+0.59	SS
Delrin®	+0.07	NC
Epoxy	+1.77	NC
Nylon 66	+0.16	NC
Nylon 101	+0.14	NC
Polycarbonate	+0.09	NC
Phenolic	+6.64	NC
Noryl	+0.63	NC
PVC	+0.43	NC
Teflon®	+0.01	NC
Tygon®	-1.26	NC
Ultem® 1000	-0.04	NC
Valox® 420	+0.01	NC
HDPE	+2.39	NC
LDPE	+4.95	NC
SAN	+0.00	NC

<u>Elastomers</u>	<u>% Weight</u>	
	<u>Change</u>	<u>Appearance</u>
Neoprene®	-12.48	H
Nitrile	-4.93	NC
SBR	-9.15	NC
Viton®	+2.52	NC
Natural Rubber	+0.25	NC
EPDM	-26.56	H

KEY:

NC = No Change C = Crazing
S = Swelling SS = Slight Swelling
ES = Extreme Softening H = Hardens

Testing based on ASTM D543, "Standard Test Method for Resistance of Plastics to Chemical Reagents."

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Model Specification:

The statement below may be inserted into a customer specification to help maintain engineering standards and ensure work integrity.

The cleaner shall not leave a residue. The cleaner shall not significantly affect the volume resistivity of Union Carbide 0691 XLPE cable insulation shield. The cleaner shall show a voltage withstand of at least 40 kV before breakdown.

The cleaner shall not significantly affect the tensile and elongation properties of XLPE, silicone rubber, and EPDM rubber when tested to guidelines proposed in IEEE P1493. When wiped over an XLPE (Union Carbide Type 0691) insulation shield, a clean towel wetted with the cleaner shall become visibly "black" with two wipes over 2-inches of cable length with light hand pressure.

The cleaner shall not be a carcinogen or listed by CERCLA as a hazardous waste. It shall not be on the EPA Phase I or Phase II list of banned or phased-out chlorofluorocarbons.

Order Information:

Cat #	Package Description
RP-1	Single, saturated towelette (5"X8") 96/case
RP-1L	Single, slightly saturated towelette (8"X12") 144/case
RP-P63	Cable Preparation Kit includes: 6 RP-1 wipes 3 Strips 120-grit, non-conductive aluminum oxide sanding cloth 1 Instruction card 12/case
RP-16	16 fl. oz (475ml) aerosol can 12/case

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Important Notice: The statements here are made in good faith based on tests and observations we believe to be reliable. However, the completeness and accuracy of the information is not guaranteed. Before using, the end-user should conduct whatever evaluations are necessary to determine that the product is suitable for the intended use.

American Polywater expressly disclaims any implied warranties and conditions of merchantability and fitness for a particular purpose. American Polywater's only obligation shall be to replace such quantity of the product proven to be defective. Except for the replacement remedy, American Polywater shall not be liable for any loss, injury, or direct, indirect, or consequential damages resulting from product's use, regardless of the legal theory asserted

LIT-RPTECHSPEC/REV001

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and Pull-Planner™ Software

**American
Polywater®
Corporation**

11222 60th St. N
Stillwater, MN 55082
U.S.A
1-800-328-9384
1-651-430-2270

<http://www.polywater.com>

support@polywater.com(e-mail)