

# AquaKleen™

## Water-based Fiber Cleaner



### TECHNICAL DATA SHEET

#### Description:

AquaKleen™ Fiber Cleaner is formulated for cleaning fiber-optic cables and endfaces. Its excellent wetting reaches precision parts to lift dust, buffer gel, lint, finger prints, and oils. AquaKleen™ dissipates static to remove surface charges so that the surface is less likely to be re-contaminated.

AquaKleen™ Fiber Cleaner contains innovative, water-based technology. A special blend of 94% ultra-pure deionized water with proprietary solvents; it does not leave a residue. AquaKleen™ is an environmentally desirable cleaner. It does not contribute to global warming or ozone depletion and has very low VOC content. AquaKleen™ is non-flammable and has low toxicity for safe use.

AquaKleen™ Fiber Cleaner is packaged in easy-to-use containers that allow precise cleaner application, reduce waste, and limit contamination. Polywater's non-woven FiberKleen™ towelettes trap dirt and absorb contaminants from high-speed fiber and optical equipment. A smooth wiping surface and durable material promote easy, effective cleaning.

#### Performance Properties:

AquaKleen™ Fiber Cleaner is a high-performance optical cleaner. AquaKleen™ removes a broad variety of endface contaminants.

<u>Soil Type</u>	<u>Cleaning Effectiveness</u>
Dry/Ionic Soil (dust, salt)	Excellent
Wet/Non-Ionic Soil (oil, buffer gel)	Excellent
Combination Soil	Excellent

AquaKleen™ Fiber Cleaner has been tested to the rigorous standards of Telcordia GR 2923-CORE, "Generic Requirements for Fiber Optic Connector Cleaning Products."



#### Product Benefits:

- Eco Friendly, Non-Toxic
- Water-based
- Dissipates Static
- No Residue
- Excellent Solvency
- Non-Flammable
- Easy to Transport

#### End Use:

AquaKleen™ Fiber Cleaner is an excellent choice for cleaning precision fiber-optic components such as:

- Endfaces
- Ferrules
- Single-mode Fiber
- Bulkheads
- Multi-mode Fiber
- Lenses, Mirrors

#### Approvals:

- Meets Telcordia GR 2923-CORE, "Generic Requirements for Fiber Optic Connector Cleaning Products."
- RoHS and WEEE compliant.

## Physical Properties:

AquaKleen™ Fiber Cleaner is a high purity, optical grade cleaner.

<u>Property</u>	<u>Result</u>
Residue	< 100 ppm
Flashpoint (ASTM D93)	>140°F (60°C)
Initial Boiling Point	212°F (100°C)
Specific Gravity	1.0
Evaporation Rate	Medium

## Environmental Impact:

AquaKleen™ Fiber Cleaner is an excellent alternative to solvent-based cleaners.

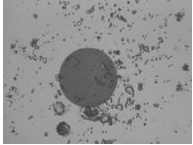

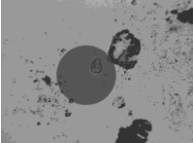

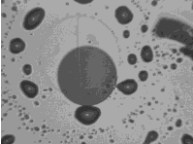

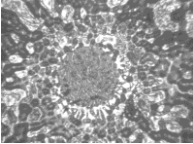
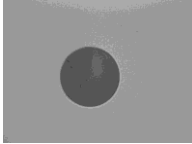
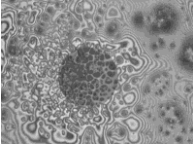
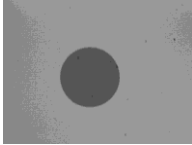
<u>Property</u>	<u>Result</u>
VOC Content	60 grams/liter
Global Warming Potential	Does not contain global warming compounds
Ozone Depletion Potential	None
CFC, HCFC, HFC Content:	None
RCRA	Not regulated as hazardous waste
CERCLA/SARA Status	Not regulated as a hazardous substance
RoHS and WEEE	Compliant
REACH	Compliant

## Safety:

AquaKleen™ Fiber Cleaner has a low level of toxicity and does not contain any listed carcinogens. Good industrial hygiene practice and appropriate precautions should be employed during use. See MSDS for specific details.

## Cleaning Properties:

AquaKleen™ Fiber Cleaner removes a broad range of contaminants from fiber connectors. To prove this, reference reflectance and transmitted power is measured on an unsoiled test connector at 1310 nm, 1550 nm and 1625 nm. Then the near-end connector plug is removed and soiled according to standard<sup>1</sup>. Connector end adapter is cleaned using recommended procedure. Insertion loss and reflectance are measured and compared to control. An electronic image of each cleaning is recorded.

<u>Soil</u>	<u>Image – Soiled</u>	<u>Image – 1<sup>st</sup> Cleaning</u>
Gypsum		
Carbon Black		
Olive Oil		
Gypsum/ Buffer Gel		
Gypsum/ 10W30 Oil		

<u>Soil</u>	<u>Insertion Loss</u>	<u>Reflectance</u>
Gypsum	Pass (<0.05 dB loss)	Pass (<2 dB change)
Carbon Black	Pass (<0.05 dB loss)	Pass (<2 dB change)
Olive Oil	Pass (<0.05 dB loss)	Pass (<2 dB change)
Gypsum/Buffer Gel	Pass (<0.05 dB loss)	Pass (<2 dB change)
Gypsum/10W30 Oil	Pass (<0.05 dB loss)	Pass (<2 dB change)

<sup>1</sup> Tested using methods from Telcordia GR-2923-CORE, "Generic Requirements for Fiber Optic Connector Cleaning Products."

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## Compatibility:

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AquaKleen™ Fiber Cleaner is compatible with most common plastics and rubbers.

### Polycarbonate:

Injection-molded plaques of polycarbonate are cut into bars, 2½ inch by ½ inch. Samples are bent in a three-point fixture. Percent strain is calculated based on the bar thickness and the radius of curvature.

“Strain limit” is the greatest percent strain where no stress cracking occurs. A strain limit greater than 0.5% indicates strain resistance.

Strain Limit > 0.7%

AquaKleen™ Fiber Cleaner shows good compatibility with polycarbonate.

### Cladding:

Fiber cladding (Corning Cable) is firmly wiped 5 times with a cleaner-saturated towel. Towel and cable are visually inspected for cladding transfer or damage.

Cladding shows no visible damage.

AquaKleen™ Fiber Cleaner shows good compatibility with fiber cladding.

### Soak Testing:

Materials are immersed in AquaKleen™ Fiber Cleaner for 72 hours at 50°C (122°F). Rubbers may swell slightly, but will return to their original state once the cleaner evaporates.

<u>Plastic</u>	<u>Compatibility</u>
Acrylic	Excellent
ABS	Excellent
Nylon 66	Excellent
Polycarbonate	Excellent
Polyethylene (HDPE)	Excellent
Polyethylene (LDPE)	Excellent
PVC	Excellent

<u>Rubber</u>	<u>Compatibility</u>
Silicone Rubber	Excellent
EPDM	Excellent

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## Usage Directions:

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AquaKleen™ Fiber Cleaner is best used with the combination wet - dry cleaning procedure recommended in Telcordia GR-2923-CORE. Microfiber towels (DT-D175) and holder (FC-HOLDER), available from American Polywater Corporation work well with this method.

Several drops or a light spray of cleaner is placed on the towel. Preferred cleaning motion is a straight line motion, drawing the endface through the wetted portion of the towel, and then through a clean portion of a second dry towel. Use of the FC-HOLDER optimizes the cleaning process. Swabs may be dampened on the wetted portion of the towel in order to clean the bulkhead or equipment.

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## Application Properties:

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### Temperature Use Range:

20°F to 120°F (-5°C to 50°C)

### Storage and Shelf Life:

Keep containers tightly closed when not in use. Shelf life is 2 years.

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## Packaging:

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AquaKleen™ Fiber Cleaner is packaged in safety sealed containers that resist spills, leaks and contamination. The 2-fluid-ounce spray and dropper bottles have over 500 uses.

### Microfiber Towels:

FiberKleen™ Dry Towels offer high absorbency and are made from non-linting, non-fraying, ultra-clean material. This specialty, microfiber fabric is engineered for optimum particle entrapment. The durable towel has a smooth surface for easy cleaning. It meets Telcordia Specification.



Convenient Kit Packaging and Cleaning Accessories

## Model Specification:

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

The fiber cleaner shall be effective on both ionic and non-ionic soils. It shall meet the cleaning criteria of Telcordia GR 2923-CORE, "Generic Requirements for Fiber Optic Connector Cleaning Products." It shall contain an oxygenated solvent component for static dissipation.

The cleaner shall leave minimal residue of less than 100 ppm. It shall be compatible with fiber optic components. It shall not stress crack polycarbonate and shall have a strain limit greater than 0.5%.

The cleaner shall be water-based with low toxicity and low environmental impact. It shall have a volatile organic content (VOC) less than 100 grams/liter. It shall not contain any global warming compounds and have no ozone depletion potential.

## Order Information:

<b>Cat #</b>	<b>Package Description</b>
AQ-2LP	2-oz AquaKleen™ Fiber Cleaner Finger Sprayer
AQ-2DR	2-oz AquaKleen™ Fiber Cleaner Squeeze Bottle Dropper
AQ-KIT2	AquaKleen™ Fiber Cleaner Kit: 2 AQ-2LP 1 DT-D175 1 SWB-250F100
AQ-KIT3	AquaKleen™ Fiber Cleaner Kit: 2 AQ-2DR 1 DT-D175 1 SWB-250F100
DT-D175	175 microfiber towels in a sealed plastic dispenser pack with cleaning pad
SWB-250F100	2.5 mm FiberKleen™ foam swab (100 pack)
SWB-125F10	1.25 mm FiberKleen™ foam swab (10 pack)
SWB-C100	FiberKleen™ cotton swab (100 pack)
SWB-V100	V Groove FiberKleen™ foam swab (100 pack)
SWB-M100	Mirror FiberKleen™ foam swab (100 pack)

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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.

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and Pull-Planner™ Software

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Corporation**

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