



Cleaning at the Speed of Light

Superior Products for the
Telecommunications
Industries



///TW Chemtronics®

Telecommunications Complete Line Catalog

At ITW Chemtronics®, our mission is simple - to continue as the industry’s technology leader, by providing our customers with the right tools to achieve the highest degree of productivity and reliability. This has made us what we are today: An innovative company known for developing products and processes with the greatest performance and convenience possible.

Since 1958, Chemtronics has been at the forefront of electronics maintenance and repair. To hundreds of thousands of technicians the world over, Chemtronics products quickly became synonymous with top reliability, quality and performance. Our product offering has grown since then — from a handful of cleaners to a complete line of ultra-pure solvents, clean room-grade swabs and wipes, and precision rework and repair tools for the electrical, electronics and telecommunications industries. ITW Chemtronics products are manufactured to an ISO9001:2000 Quality Standard, ensuring we will continue to manufacture every product to the same high quality standards, every time. Since 1999, ITW Chemtronics has been a wholly owned subsidiary of Illinois Tool Works Inc. (www.itw.com).

At that time we also began focusing our precision cleaning expertise on the growing telecommunications industry. Through persistence, innovation and real world experience with technicians in the field, we were able to develop a comprehensive approach to cleaning connectors that is a complete process — not just products. The Chemtronics marriage between highly engineered solvent formulations and cleanroom swabs and wipes in the Combination Cleaning process (CCp™) has become the standard for cleaning fiber optic connectors.

Chemtronics cleaning products and processes are developed with one thing in mind — customer satisfaction. We take a comprehensive approach to all we do. Our solvents are designed to account for the soils being removed, the substrate being cleaned, the environment in which they are used and the people using them. They are efficient, powerful and many are patented. Our swabs and wipes are cleanroom quality and represent the most comprehensive offering of these types of products to the fiber optic industry. We start with engineered clean components and assemble them in a cleanroom environment. Together in the Combination Cleaning process (CCp™) Chemtronics products make the clean connection.



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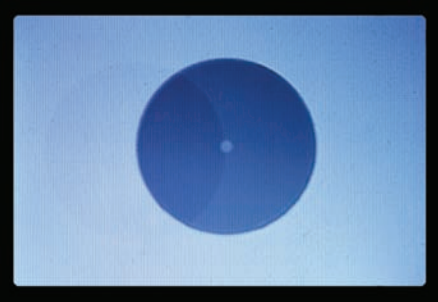
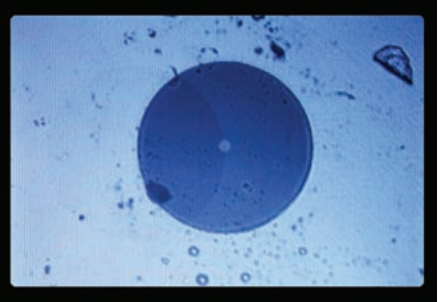
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Why is cleaning important?

To assure high speed internet and network transmissions without signal loss, the best practice has evolved to clean a connection each and every time it is disconnected or tested.

Soiled connections:

- Create signal distortion or loss
- Can cause reflectance of the signal
- Give false readings to test equipment
- Have been reported to be as high as 70% of network transmission “problems”



The Combination Cleaning process (CCp™)

The Combination Cleaning process (CCp™) is a cleaning process developed by ITW Chemtronics® for fiber optic connector cleaning. Chemtronics called on its 48 years of precision cleaning experience and proven record of cleaning chemistry innovation to devise the best cleaning process currently available for fiber optic connector cleaning. The process combines both core competencies at Chemtronics — precision solvent blends and cleanroom wipes — and employs them in a ‘wet-to-dry’ cleaning technique. In one motion, the solvent breaks the soils’ bond to the surface and the wipe pulls the soil away from the fiber optic connector. The procedure is reliable and repeatable for both highly skilled or inexperienced crafts persons. The cost per cleaning is reduced, encouraging cleaning of each connection to assure high quality transmissions for FTTH, Central Office, WAN/LAN Network, and OEM applications. *CCp™* is a significant advancement in the method of cleaning all types of fiber optic connectors because it efficiently removes virtually all types of soils.

Many types and combinations of soils are present in each fiber optic network, such as dust, grit, fibers, fingerprints, buffer gel and lubricants. Individual methods exist for removing some of the soils, but no method existed for removing all of them reliably and repeatedly. Dry cleaning may be a moderately effective process if the soil is a light particle. However, dry cleaning a dusty connection in an environment where grit is present can scratch a connector end face. Wet cleaning provides a measure of cleaning safety to a dusty connection, but over-saturation causes solvent entrapment and contamination in the connector. As the excess solvent evaporates it can become trapped in the connection, and promote moisture condensation. Using twist & turn or figure-8 cleaning motions can damage the connector by grinding any dust or grit that may be present into the end face, resulting in the need for field replacement or repolishing. *The Combination Cleaning process (CCp™)* considers the best of both wet and dry cleaning, and creates a third process that is better than both.



CCp™ was developed in response to technicians’ concerns regarding the previous dry and wet cleaning methods. These methods rarely worked well after one application, and would require multiple cleanings to get adequate results. *CCp™* takes the best of established procedures and creates an entirely new cleaning process.

The Combination Cleaning process - Effective, Reliable, and, Cost-Efficient:

- 1.) Using the QbE®, place one wiper on the FiberSafe™ Cleaning Platen.
- 2.) Spray a small amount of Electro-Wash® PX Fiber Optic Cleaner (about 1” in diameter) onto one corner of the wipe.
- 3.) Hold the end face at 90 Degrees. Adjust for an APC connection by slightly tilting the container or and face. The angle is correct when no drag is felt on the end face.
- 4.) Draw the end face from the wet part to the dry part of the wipe three times. Use gentle pressure, just enough to ensure complete contact between the end face and the wipe.
- 5.) Test your work when possible. Make sure to use a new wipe for each application.

The reliability and repeatability of *CCp™* provides assured cleaning in those instances when inspection isn’t practical. *CCp™* should be implemented each and every time a jumper is disconnected from a console or an OTDR, when power testing is conducted, or when there is a report of trouble in the line. Cleaning each connection is the base line for each subsequent test and measurement procedure, and will assure customer satisfaction for any connection from long haul to FTTx.

QbE® Cleaning Systems



Portable and efficient, QbE® Cleaning Systems offer more complete removal of microscopic contaminants, without the chance of damage to the optical fiber end face, compared to typical cleaning methods in use today. QbE® is a self-contained cleaning tool that can be used “dry” or “wet.” QbE® is convenient and economical for use in field or OEM applications.

- Complete Fiber Optic Cleaning System — no refills to buy or investment in expensive mechanisms to maintain
- Up to 600 cleaning applications using the Combination Cleaning process (CCp™)
- Effective wet or dry connector cleaning — the only cleaning system that offers both options
- Provides the optimum cleaning surface — FiberSafe™ cleaning platen is perfect for outside plant or OEM application
- FiberSafe™ cleaning platen is renewed with every new QbE® — will not dry out
- Convenient size — portable cleaning system easily fits in tool cases or stores on work benches
- Heavy duty lint-free wiping material — tough to remove buffer-gel and heavy soils, yet soft and compliant for safe end face cleaning

QbE® Fiber Optic Cleaning System

The precision wipe platform for cleaning fiber optic end faces

- Large, flat continuous FiberSafe™ cleaning platen
- Patented — U. S Patent Number 6,865,770 and foreign patents

Applications:

- End face cleaning of SC, ST, FC connectors
- Fusion Splice preparation
- Buffer gel removal

QBE 200 perforated wipes per box
2.75" x 3" (7.0 cm x 7.6 cm)

QbE®-R Fiber Optic Cleaning System

The precision wipe platform for cleaning recessed fiber optic end faces

- Developed specifically for use with 2.5 mm SC and APC recessed connectors
- Raised, ridged FiberSafe™ cleaning platen conforms to recessed connectors end face
- Patented — U. S Patent Number 6,865,770, and patents pending; foreign patents also apply

Applications:

- End face cleaning of SC, APC and MTP recessed connectors
- Fusion splice preparation
- Buffer gel removal

QBE-R 200 perforated wipes per box
2.75" x 3" (7.0 cm x 7.6 cm)

Electro-Wash® Precision Cleaners

Electro-Wash® PX Fiber Optic Cleaner

The ideal cleaner for fiber optic connectors and cables

Electro-Wash® PX is the standard in precision fiber optic cleaning. Formulated to safely remove all soil types, from handling soils to airborne particles and oil, Electro-Wash® PX will clean the surface without damaging cladding or plastics. This engineered solvent formulation removes soils and then evaporates quickly, minimizing component downtime.

- Safe on plastics
- Flammable
- Extra cleaning strength
- Ozone safe
- Dries fast
- Leaves no residue

Applications:

- Quickly cleans fiber optic end faces and connectors
- One-step buffer gel removal
- Cleans a wide range of oil and handling soils
- Use with QbE® Fiber Optic Cleaning Systems

ES810 5 oz / 141 g aerosol
ES1210 12.5 oz / 354 g aerosol
ES110 1 gal / 3.7 L liquid



Chemtronics® complete line of high purity solvents are the finest, most effective products made for the critical cleaning of fiber optic connectors, cable assemblies, electrical assemblies and sensitive components. Each cleaning agent possesses unique properties suited to specific applications — from precision cleaning of solvent sensitive components to heavy-duty removal of buffer gel and matrix.

All aerosols can be sprayed in any direction, even upside down. Look for the “All-Way Spray” icon on the can.



Electro-Wash® Precision Cleaners are engineered to clean a wide variety of soil, oil, grease, oxides and handling contamination from equipment and assemblies that include:

- Fiber optic end faces
- Optoelectronic components and connections
- Circuit assemblies and connections
- Control systems and contacts
- Electronics and electrical equipment
- Precision devices
- Meters/measurement devices
- Tools and work benches

Application Tip

Even a tiny amount of contaminating dirt or particulate obstructing the fiber end face can result in attenuation, reflectance or interruption of the optical signal. Using a small amount of Electro-Wash® PX or Electro-Wash® CZ with the Combination Cleaning process (CCp™), one can remove this end face contamination and assure a reliable fiber optic connection. The cleaning procedure is quick, taking only fifteen seconds or less per connection, and works consistently time after time.

Electro-Wash® Precision Cleaners



Electro-Wash® CZ Precision Fiber Optic Cleaner

The first non-ozone depleting, nonflammable fiber optic cleaner safe for use on plastics and fiber

Formulated by ITW Chemtronics® in 1992 after 18 months of research, Cirozane™ CFC / HCFC Replacement Chemistry, provides the ultimate cleaner without any undesirable trade-offs. Cirozane™-based products offer you a high performance, ultra-safe “drop-in” replacement to all CFC and HCFC chemistries. These products offer all the performance of CFCs and HCFCs without any ozone depleting compounds. Cirozane™ is for those who demand the very best without compromise.

- Dries fast
- Leaves no residue
- Safe on plastics
- Nonflammable
- Good cleaning strength
- Ozone safe
- Good toxicity profile

Applications:

- Safely cleans connector end-faces, alignment sleeves and ferrules
- Cleans handling soils and other residues with ease

- ES7100 12 oz / 340 g aerosol
ES7101 1 gal / 3.7 L liquid

Electro-Wash® MX Universal Degreaser

The extra-strength, plastic safe universal cleaner

Offering all of the cleaning power of Electro-Wash® PX with a more gradual dry time, this innovative formula is used on tough to remove soils such as flooding compounds. The 100 wipe tubs are perfect for splice trailers, and the presaturated single packs and pens are portable enough to easily travel anywhere. The aerosol delivers pure cleaning solvent directly to soiled surfaces or wipes.

- Safe on plastics
- Flammable
- Extra cleaning strength
- Ozone safe
- Moderate evaporation rate increases cleaning power and effective cleaning time
- Leaves no residue
- Available in aerosol, presaturated tub or presaturated single pack wipe

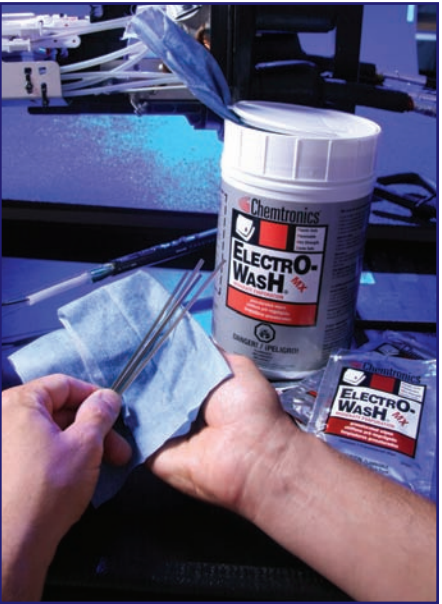
Applications:

- Removes flooding compounds
- Quickly removes oils and grease from all surfaces
- Also cleans contamination from semi-conductive cores of high voltage cables
- Presaturated wipe great for toolbox or travel

Cleaning:

- Tools and workbench surfaces
- Fiber optics and connectors
- Meters/measurement devices
- High voltage cables
- Hard-line coax cable
- Metal and fiber optic cable splices
- Motors casings, transformer surfaces
- Control systems

- ES1621 10 oz / 283 g aerosol
CP421 25 premoistened wipes (9 ml each), 8" x 10" (20.3 cm x 25.4 cm)
T021 100 wipes/tub, 6" x 8.5" (15.2 cm x 21.5 cm)
FW2150 9 gm pen
FW2150BLK Box of 24 pens, 9 gm each



Application Tips

If the Electro-Wash® Presaturated Wipe is too moist for a particular application, simply allow the wipe to air dry for a few seconds prior to use. If the presaturated wipes are too dry for a particular application, simply add solvent by spraying ES1621 into the container for a few seconds.

Electro-Wash® MX is available in an aerosol or a convenient presaturated tub of 100 wipes. There is also a single-use pack with a large wipe for tough cleaning, and convenient pens for easy transportation in kits or tool boxes.

Spray Electro-Wash® MX into a 6713 Econowipes™ Lint Free Wipe to quickly wipe away buffer gel.



PRODUCT SELECTION GUIDE

Product	Plastic Safe	Flammable	Cleaning Strength	Recommended Application
Electro-Wash® PX Fiber Optics Cleaner	Yes	Yes	•••	Primary choice for end faces and precision fiber optics of all kinds. Cladding, contact housing and end face safe. Good for buffer gel removal.
Electro-Wash® CZ Precision Fiber Optic Cleaner	Yes	No	••	Cleaning of older assemblies and contacts that may be solvent sensitive. Removing fingerprints and light oils. Cladding, contact housing and end face safe.
Electro-Wash® NXO Matrix Remover	Test	No	•••••	Ribbon matrix removal. Oxidized oil and grease removal. Insulating tar residue removal.
Electro-Wash® MX Universal Degreaser	Yes	Yes	•••	Universal cleaner for tools and work surfaces. Cladding, contact housing and end face safe. Excellent for buffer gel removal.
The Mighty Pen®	Test	Yes	•••••	Unique pen size fits in a tool pouch. Use for label and ink removal. Great for consoles and hand set cleaning. Removal of tar, adhesives, insulation residue.
Plast-N-Glas®	Yes	No	••	Cleans and polishes in one application. Prevents attraction of dust and dirt. Cleans and protects scopes, test & measurement equipment, CRT monitors, control panels, transparent surfaces.
• Mild Cleaner •• Good Cleaning Strength ••• Extra Cleaning Strength •••• Heavy-Duty Cleaning Strength ••••• Maximum Cleaning Strength				

Electro-Wash® Precision Cleaners



The Mighty Pen®

The powerful universal cleaning solvent in a convenient pen

The Mighty Pen® provides the superior cleaning strength of terpenes in a convenient and easy to use pen dispenser for pinpoint cleaning power. Use it for a tough soil in a small place.

- Outstanding cleaning ability
- Marker dispenser provides controlled and exact application
- Patented — U. S Patent Number 6,677,291 and foreign patents

Applications:

- General purpose cleaning and refurbishing of equipment
- Removes adhesives, tape and label residues
- Cleans away ink marks
- Adhesive residue removal from equipment
- Cleans computer and rack systems
- All repair and maintenance spot cleaning

CW3700 11 g / 0.39 oz pen



Application Tip

The Mighty Pen® and Electro-Wash® MX Pen are the perfect solutions for portability problems. Compact and completely portable, this product easily fits in toolboxes, on benches and even in pockets for easy transport.

Electro-Wash® NXO Matrix Remover

The fiber safe matrix remover for fast, safe mid-span access

Individual fibers of a multi-fiber ribbon are held together in a polymer sheath, known as matrix. Matrix removal is performed during mid-span access, when repairing and splicing a multi-fiber ribbon in the middle of a cable. Electro-Wash® NXO eliminates the need to cut and splice all the fibers in a ribbon. It will remove the matrix from the ribbon, while leaving the cladding and fiber untouched.

- Leaves no residue
- Dries fast and completely
- Nonflammable
- Most cleaning strength available
- Ozone safe
- Test on plastics

Applications:

- Ideal for midspan fiber access on most ribbon cable
- Removes matrix from multi-fiber ribbon without attacking the fiber cladding
- Effectively cleans matrix from Lucent®, Corning®, Pirelli®, Alcatel® and many others
- Does not attack fiber cladding
- Do not use for end face cleaning or on any plastic surface

ES1607 12 oz / 340 g aerosol

ES107 1 gal / 3.7 L liquid



Plast-N-Glas® Foaming Cleaner

The foaming, non-streaking static dissipative cleaner for transparent surfaces

Whether cleaning test equipment, instrument panels, or work surfaces, Plast-N-Glas®'s foaming action cleans surfaces, while leaving a transparent antistatic treatment that prevents the attraction of soils. This maximizes the time between normal cleaning cycles.

- Controls static, cleans and polishes in one application
- Effectively removes handling oils, finger soils and nicotine stains
- Prevents attraction of dust and dirt
- Compatible with plastics, glass and stainless steel
- Foaming spray won't run or drip; ideal for optical or visual surfaces

Applications:

- Cleaning equipment scopes, monitors and housings
- Removing handling soils from precision glassware
- Maintaining cleanliness of observation windows

ES1668 14 oz / 397 g aerosol

Application Tip

Spray a small amount of Plast-N-Glas® cleaner into the 6713 Econowipes™ Lint Free Wipe to clean lenses and keypads. Don't spray directly on the surface, spray into the wipe for best results!

Facts About Isopropyl Alcohol (IPA) and End Face Cleaning

IPA, especially in highest purities, is hygroscopic (absorbs moisture from the air) and degrades quickly when exposed to the atmosphere. Ambient moisture attracted to IPA can also adhere to the connector end face. The drying procedures for residual alcohol, and ultimately residual moisture, for glass surfaces are exceptionally difficult and cumbersome. Since isopropyl alcohol is relatively slow to dry, it can attract more airborne contamination leaving the surface more contaminated than before cleaning. In addition, IPA does not adequately clean most non-ionic (oily or greasy) contamination, and can leave a thin layer of surface residue. Excessive amounts of isopropyl alcohol contribute to signal loss and "haloing", which is caused by residual alcohol and moisture contamination from incompletely dried connectors.

Proper dispensing of the cleaning solvent is critical for effective cleaning. Using high-purity IPA in a pump container introduces airborne contaminants into the solvent each time the solvent is dispensed. With each pump ambient air and moisture are drawn into the dispenser, reducing the purity of the cleaning solvent very rapidly: 99.9% IPA will be reduced to 97% purity in as little as fifteen minutes. IPA will continue to absorb moisture until it reaches equilibrium with ambient moisture. Pump containers are not appropriate to deliver the level of purity required for effective cleaning of fiber optic connections. By comparison, pressurized aerosols never introduce ambient air, keeping the purity level of the contents consistent every time the solvent is used. The cleanest delivery system for precision solvents of any kind is an aerosol container. The first and last spray have the same high quality.

Application Tip

Need to remove isopropyl alcohol that was mistakenly used on an end face? Simply use Electro-Wash® PX and the Combination Cleaning process (CCp™) to remove any isopropyl alcohol residue.

SWABS FOR CLEANING IN FIBER ENVIRONMENTS

Swabs For Cleaning In Fiber Environments

ITW Chemtronics® has developed these precision tools specifically to clean microcontamination encountered in fiber optic telecommunications. From removing end face contamination to cleaning soils from your fusion splicer, these ultra-clean swabs will make clear, clean and safe connections, fast and easy.

At ITW Chemtronics®, our mission is simple: to continue as the industry's innovative technology leader providing our customers with the tools to achieve the highest degree of reliability and productivity. Our swabs and wipes deliver on this promise, and focus on providing:

Reliability and performance.

Our products keep contamination out of your cleaning processes, reduce downtime, and perform consistently, shipment to shipment.

Quality and consistency.

To manufacture our swabs and wipes, we start with engineered clean materials, and maintain cleanliness standards throughout the manufacturing process. These are the same standards applied to products we make for critical-cleaning applications in wafer-fabrication, hard-drive manufacturing, and medical device production.

Products that bring value, not contamination, to your cleaning process.

Strict quality controls, from product development to production, ensure consistent reliability. Clean and static-free packaging seals in contamination-free quality.

Dedicated customer support.

Live support is available via our Technical Hotline at 1-800-TECH-401. We even custom engineer products for special needs, and will help create training programs for your specific application from our extensive library of Applications Notes, White Papers, and Training Programs. Each of these available benefits are a part of our commitment to the success of your network, FTTx Application, manufacturing and installation procedure.

2.5mm Precision Fiber Optic Swabs

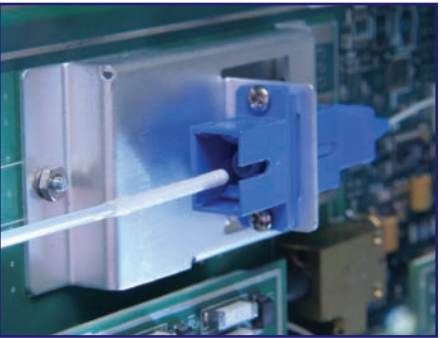
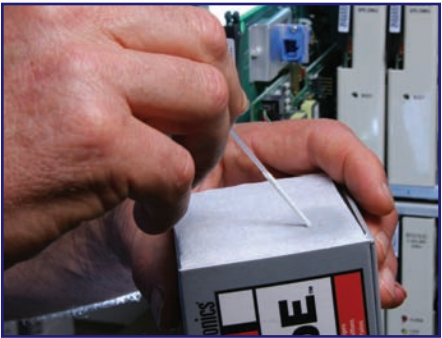
The ideal precision cleaning swab for cleaning 2.5 mm fiber optic connectors

Engineered to quickly and easily clean all 2.5 mm connector end-faces and alignment sleeves, this swab is made from proprietary microporous foam that immediately absorbs oil and solvents from fiber surfaces. Adhesive and binder free, the 2.5 mm Precision Fiber Optic Swab is manufactured under cleanroom standards.

- Scientifically designed recessed head conforms to a connector face, with the right pressure for cleaning
- Wrapped foam swabs provide outstanding particle entrapment; innovative design captures contaminants from alignment sleeves and keeps them from being transferred to the back plane end face
- No fibers, adhesives, or binders
- Soft foam tip provides superior abrasion resistance and won't damage end face or test equipment
- Wicking action of foam quickly pulls solvent from surfaces
- Can be used with Electro-Wash® cleaners for hard-to-remove soils
- Patented — U.S. Patent numbers 6523908 and 6393651, and foreign patents

Application Tip

Never use any solvent excessively when cleaning fiber optic connections. Solvent can become trapped in between the alignment sleeve and the ferrule, creating a contamination source either through condensation residue, or particle attraction.



Applications:

- Efficient and safe swab for cleaning fiber optic backplane bulkhead connections
- Ideal for 2.5 mm connectors

25184 5 swabs per bag
25183 100 swabs per bag

Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
6.0"(15.24 cm)	0.08"(2.0 mm)	1.0"(2.54 cm)	0.10"(2.5 mm)	0.10"(2.5 mm)	Polypropylene	Proprietary Foam Material

SWABS FOR CLEANING IN FIBER ENVIRONMENTS

Swabs For Cleaning In Fiber Environments

1.25mm Fiber Optic Sleeve Cleaning Swab

The ideal tool for cleaning 1.25 mm fiber optic sleeves, back plane connections, and polishing pucks.

The 1.25 mm Fiber Optic Sleeve Cleaning Swab is ideally suited for cleaning contamination from 1.25 mm fiber optic sleeves and polishing pucks. The 1.25 mm diameter polyester tip fits tightly and conforms to the inside of all 1.25 mm mating sleeves, adapters and slurry polishing fixtures. Critical surfaces are cleaned of all contamination. No adhesives are used in our proprietary manufacturing process, thereby minimizing leachable contaminants. The swab head contains no seams or hard surface that could scratch critical surfaces.

- Specifically designed to clean all 1.25 mm alignment sleeves, adapters and 1.25 mm back plane connections
- Free of fibers, adhesives, and binders that can generate residue
- Contains no seams or sharp surfaces that can generate particles or cause scratches
- Patented — US Patent 6,795,998 and foreign patents
- Available in bag packaging or durable, field-ready, transparent tubes

Applications:

- Clean 1.25mm fiber optic end faces and alignment sleeves
- Removal of slurry from 1.25 mm ferrule polishing fixtures
- Clean 1.25mm test ports

25123X 100 swabs per bag
25125F 15 swabs per tube

Application Tip

When using the 1.25 mm Fiber Optic Sleeve Cleaning Swab, best performance will be obtained by lightly moistening the tip with Electro-Wash® PX Fiber Optic Cleaner or Electro-Wash® CZ.



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
6.0"(15.24 cm)	0.08"(2.0 mm)	0.67"(1.70 cm)	0.05"(1.25 mm)	0.05"(1.25 mm)	Polypropylene	Proprietary Polyester

2.5 mm Fiber Optic Foam Swabs

Versatile, effective, and, cost-efficient swab for cleaning end faces and equipment test ports.

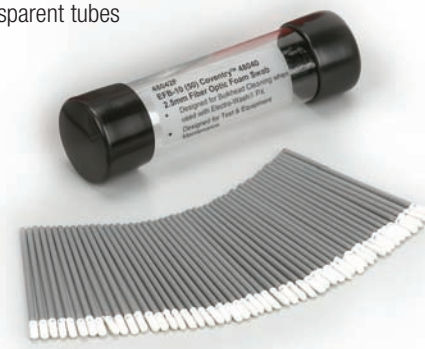
The 2.5mm Fiber Optic Foam Swab is an excellent choice for FTTH, CO, or Data Com applications. While some foam can generate particles, this swab is manufactured with a tough, medical-grade urethane foam that provides excellent particle entrapment, and has resulted in millions of successful cleaning operations. The open-cell structure gives the best solvent holding capacity, and enables less solvent to do more work.

- Flexible swab head conforms to connector face
- 2.5mm Fiber Optic Foam Swab provides outstanding particle entrapment
- No adhesives, binders, or fibers to leave residues
- Can be used with Electro-Wash® PX Fiber Optic Cleaner or Electro-Wash® CZ for all types of soils and contaminants
- Available in bulk packaging or durable, field-ready, transparent tubes

Applications:

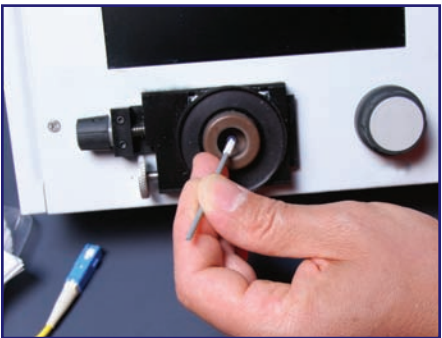
- Cleans 2.5 mm connectors and ferrules
- Cleans Test Equipment Ports

48040 500 swabs per bag
48042F 50 swabs per tube



Application Tip

When wetting a precision swab, only use a small amount of cleaning solvent. Add solvent by tapping the head of the swab in a wetted area on a QbE® Cleaning System. Never over-saturate a swab. Excess solvent can accumulate on ferrule sides and alignment sleeves. Excess solvent can generate an evaporation residue that can create signal deterioration or loss.



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.7"(6.8 cm)	0.09"(2.2 mm)	0.41"(10.5 mm)	0.10"(2.5 mm)	0.12"(3.0 mm)	Polypropylene	Polyurethane Foam

SWABS FOR CLEANING IN FIBER ENVIRONMENTS

Swabs For Cleaning In Fiber Environments

Fusion Splice Mirror Cleaning Swabs

Cleanroom laundered fabric formed into a unique tool for fusion splice mirror cleaning

The cleanliness of Class 10 (ISO Class 4) processed polyester is engineered into a precision tool for contamination-free cleaning of fusion splice mirrors. The high-strength seamless design is particle-free and adhesive-free, while providing the softness and absorption of a cotton bud. Cleanroom grade, fiberglass reinforced nylon handles are rigid like wooden handles, but are much cleaner and more fracture resistant.

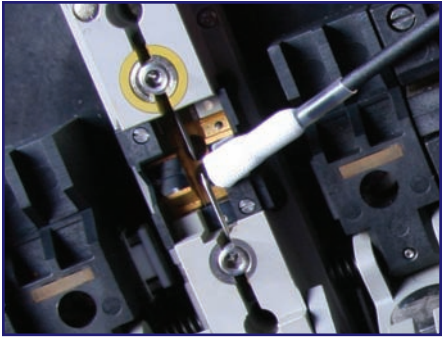
The Fusion Splice Mirror Cleaning Swab is especially suited for use with precision cleaning solvents such as Electro-Wash® PX Fiber Optic Cleaner (always follow manufacturers recommendations when using any solvent on a precision mirror surface).

- Ideal size and dimension for fusion splice mirror cleaning
- High absorbency swab removes dust and other contaminants
- Free of adhesives or binders; will not leave residue
- Works well as solvent applicator
- Can be used with Electro-Wash® PX Fiber Optic Cleaner for hard-to-remove soils
- Available in bag packaging or durable, field-ready, transparent tubes

Applications:

- For fusion splice mirror cleaning
- Dust removal from precision surfaces

51121 25 per bag
51125F 15 swabs per tube



Application Tip

Need specific instructions or documentation on a procedure? Application Notes are the detailed procedures that are available from the ITW Chemtronics website (www.chemtronics.com), your local sales representative, or the Technical Hotline (1-800-TECH-401).



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.8"(7.1 cm)	0.10"(2.5 mm)	0.40"(10.2 mm)	0.25"(6.5 mm)	0.23"(5.7 mm)	Glass Filled Nylon	Knit Polyester

MTP Connector Chamois Swab

The ideal chamois swab for MTP cleaning

This cleaning tool features an exclusive chamois material engineered to quickly and safely clean MTP connectors. The material has super absorption which pulls soils and solvents from end faces even in deeply recessed MTP connections where wiping is difficult.

- Ideal size and dimension for MTP connector cleaning
- Seamless blunt design makes precise contact with MTP end face
- High absorbency swab quickly and safely removes contaminants
- Free of adhesives or binders; will not leave residue
- Can be used with Electro-Wash® PX Fiber Optic Cleaner for hard-to-remove soils
- Available in durable, field-ready, transparent tubes

Applications:

- MTP Connector Cleaning

CC505F 25 per tube



Swab Length	Handle Width	Head Length	Head Width	Handle Material	Head Material
3.25"(8.25 cm)	0.38"(9.6 mm)	0.88"(22.3 mm)	0.38"(9.6mm)	ABS	Synthetic Chamois



Application Tip

To ensure effective MTP end face cleaning, dampen the end of the CC505F swab by tapping it on a wetted area on a QbE® Cleaning Platform in the same manner that the 2.5mm Fiber Optic Foam Swab is used.

MTP Connector Poly Swab

The versatile polyester swab for MTP cleaning

This cleaning tool features a cleanroom laundered knit polyester fabric head that quickly, safely and economically cleans MTP connectors.

- Ideal size and dimension for MTP connector cleaning
- Swab removes dust and other contaminants
- Free of adhesives or binders; will not leave residue
- Can be used with Electro-Wash® PX Fiber Optic Cleaner for hard-to-remove soils
- Available in durable, field-ready, transparent tubes

Applications:

- MTP Connector Cleaning
- Ferrule cleaning

38142F 50 swabs per tube



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.7"(6.9 cm)	0.09"(2.3 mm)	0.48"(12.1 mm)	0.06"(1.6 mm)	0.12"(3.0 mm)	Polypropylene Flexible Tip	Knit Polyester



Application Tip

38142F swab has excess material at its end that will fold over to wipe the MTP end faces. Sweep the moistened end over the end faces using one side of the swab head for each direction using a brushing motion.

SWABS FOR CLEANING IN FIBER ENVIRONMENTS

Swabs For Cleaning In Fiber Environments

Small Form Factor (SFF) Connector Swabs

The exceptionally clean and durable swabs for cleaning Small Form Factor connections

Small Form Factor connections require a new cleaning approach, having numerous connections, multiple alignment pins and numerous geometries. To meet this challenge, SFF Connector Swabs are produced by our proprietary, exceptionally clean process of forming and welding the swab head without the use of adhesives. Sealed edges build in high strength with no loose fibers or particulates. SFF Connector Swabs have the strongest seams available and will not split with even rigorous scrubbing. These tools are ideal for cleaning SFF-APC end faces and alignment pins, and provide an ideal alternative to typical costly cleaning devices. Cleanroom processing assures consistent and reliable quality.

SFF High Density Connector Swab – This swab is ideal for cleaning high-density connections. The rugged, lint-free tip cleans end faces and the alignment pins without generating particles.

- Soft swab head conforms to connector face and alignment pins
- Provides outstanding particle entrapment, does not generate particles
- No adhesives, binders, or fibers to leave residues
- Can be used with Electro-Wash® PX Fiber Optic Cleaner or Electro-Wash® CZ for all types of soils and contaminants

Applications:

- Cleans SFF connectors, alignment pins and sleeves
- Cleans Test Equipment Ports

38040 500 swabs per bag



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.7"(6.9 cm)	0.09"(2.3 mm)	0.44"(11.2 mm)	0.09"(2.4 mm)	0.12"(3.0 mm)	Polypropylene Flexible Tip	Knit Polyester

SFF Connector Flat Swab – This swab offers a unique design that is well suited for the Combination Cleaning process (CCp™). The flat, two-sided design enables the technician to moisten one side of the swab for wet cleaning, and dry with the other.

- Flat swab head enables both wet and dry cleaning simultaneously
- Swab provides outstanding particle entrapment
- No adhesives, binders, or fibers to leave residues
- Can be used with Electro-Wash® PX Fiber Optic Cleaner or Electro-Wash® CZ for all types of soils and contaminants

Applications:

- Cleans SFF connectors, alignment pins and sleeves
- Cleans Test Equipment Ports

38140 500 swabs per bag



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.7"(6.9 cm)	0.09"(2.3 mm)	0.48"(12.1 mm)	0.06"(1.6 mm)	0.12"(3.0 mm)	Polypropylene Flexible Tip	Knit Polyester

V-Groove & Ferrule Cleaning Swabs

The swab for v-groove and ferrule cleaning

When cleaning the alignment grooves (v-grooves) on a fusion splicer many technicians will use an alcohol presaturated wipe to remove the contamination. If the residual contamination is not removed, or if the wipe introduces more particles, the alignment will be modified by the dimension of the residue, resulting in fiber misalignment. Use of cotton swabs to clean the v-grooves will also generate particles, negatively impacting the alignment of the fiber.

While cleaning the sides of a ferrule is not a common procedure, cases exist where contaminants become trapped on the side of the ferrule, and decrease the transmission through the connector. These contaminants can also migrate between the connectors, and decrease transmission unless removed. Excess solvent also requires the ferrule be cleaned prior to reassembly.

The unique geometry as well as its exceptionally clean construction, provides a dual use for the 38540. The swab can be used dry for cleaning a fusion splice v-groove, lightly moistened on one side and then reversed to dry for ferrule cleaning applications.

- Flattest, thinnest swab available; ideal for small precision surfaces
- Will not leave residue; no adhesives or binders
- Wicking action quickly pulls solvent from surfaces
- Can be used with Electro-Wash® Precision Cleaners and the CCp™ on hard-to-remove soils
- Available in bulk packaging or durable, field-ready, transparent tubes

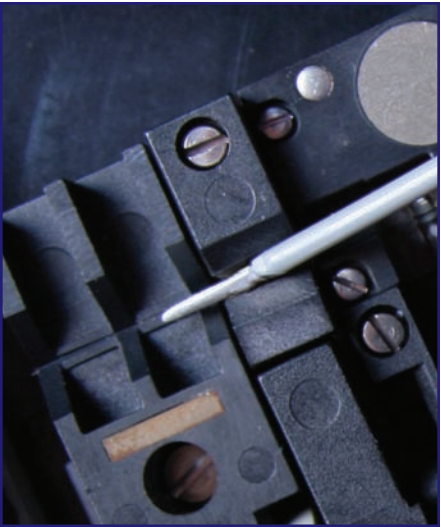
Applications:

- V-groove & ferrule cleaning

38540 500 swabs per bag
38542F 50 swabs per tube



Swab Length	Handle Width	Head Length	Head Thickness	Head Width	Handle Material	Head Material
2.7"(6.9 cm)	0.09"(2.3 mm)	0.46"(11.7 mm)	0.04"(1.0 mm)	0.12"(3.0 mm)	Polypropylene Flexible Tip	Nonwoven Polyester



Application Tip

For v-groove cleaning pass a dry 38540 through the alignment groove. No cotton residues will be left behind, and no metal edges will damage the precision surface.

Application Tip

Airborne soils can accumulate around the ferrules in the alignment sleeve. Lightly moisten one side of the 38540 by tapping it in a spot of Electro-Wash® PX Fiber Optic Cleaning Solvent. Rotate the swab around the ferrule side two or three times. Reverse the swab to dry the ferrule side.

FIBER OPTIC CLEANING KITS

Fiber Optic Cleaning Kits

ITW Chemtronics® offers fiber optic field cleaning kits to use for optical fiber end face cleaning, splice preparation and buffer gel removal. These kits feature the next generation Chemtronics® cleaning system — QbE® wipes and Electro-Wash® PX. Technicians simply follow the Combination Cleaning process (CCp™, see page 1), and the end face will be cleaner than using any other method.

FTTH Fiber Optic Cleaning Kit

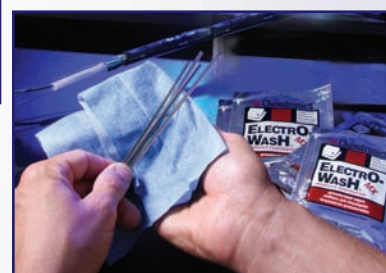
The fiber optic kit for Fiber-To-The-Home cleaning

ITW Chemtronics® has included all the cleaning supplies necessary for a successful fusion splice and 2.5mm fiber optic connection in this convenient kit. Electro-Wash® PX Precision Fiber Optic Cleaner and QbE® Cleaning System are included for performing the CCp™. Swabs and wipes are included for cleaning the fusion splicer and work area. Swabs are also included for cleaning ferrules, alignment sleeves and backplane connections. Electro-Wash® MX Premoistened Wipes are included for tool and cable wiping. All the swabs are packaged in rugged tubes for field operations. The kit bags are made from tough nylon for long life. They are equipped with a carabineer to clip on a tool belt for transport or to clip a cable for convenient access.

Kit contains:

- 1 – QbE® Cleaning System
(200 sheets, see page 2)
- 1 – Electro-Wash® PX
Precision Fiber Optic Cleaner
(ES810, see page 3)
- 1 – 2.5mm Foam Fiber Optic Swabs
(50 swabs, 48042F, see page 11)
- 1 – V-Groove and Ferrule Cleaning Swabs
(50 swabs, 38542F, see page 15)
- 1 – Fusion Splice Mirror Cleaning Swabs
(15 swabs, 51125F, see page 12)
- 1 – Lint-Free Precision Wipes
(100 4"x4" wipes, 6704F, see page 18)
- 5 – Electro-Wash® MX Premoistened Wipes
(1 wipe per pack, CP421 see page 24)
- 1 – Instructions
- 1 – Rugged Bag with carabineer attachment

CFK1000 1 FTTH fiber optic cleaning kit



I & M Fiber Optic Cleaning Kit

The fiber optic kit for installation and maintenance cleaning

In the I&M Kit, ITW Chemtronics® has included only the cleaning supplies necessary for making a successful 2.5mm fiber optic connection. Electro-Wash® PX Precision Fiber Optic Cleaner and QbE® Cleaning System are included for performing the CCp™. Swabs are also included for cleaning ferrules, alignment sleeves and backplane connections. Electro-Wash® MX Premoistened Wipes are included for tool and cable wiping. The swabs are packaged in rugged tubes for field operations. The kit bags are made from tough nylon for long life. They are equipped with a carabineer to clip on a tool belt for transport or to clip a cable for convenient access.

Kit contains:

- 1 – QbE® Cleaning System
(200 sheets, see page 2)
- 1 – Electro-Wash® PX
Precision Fiber Optic Cleaner
(ES810, see page 3)
- 1 – 2.5mm Foam Fiber Optic Swabs
(50 swabs, 48042F, see page 11)
- 1 – Lint-Free Precision Wipes
(100 4"x4" wipes, 6704F, see page 18)
- 5 – Electro-Wash® MX Premoistened Wipes
(1 wipe per pack, CP421 see page 24)
- 1 – Instructions
- 1 – Rugged Bag with carabineer attachment

CFK1010 1 I & M fiber optic cleaning kit

WIPES FOR FIBER ENVIRONMENTS

Wipes For Fiber Environments

ITW Chemtronics® Coventry™ Brand dry wipes are recognized and accepted throughout the world for the most critical cleaning applications. Engineered and manufactured clean, these precision wipes are ideal for a wide range of telecommunication related applications. Whether removing buffer gel from a multi-strand cable, cleaning a workbench in a splice trailer, preparing for a multiple fusion splice, or cleaning a precision lens, a Coventry™ wipe is made for your application.

Each wipe features:

- High absorbency
- High-purity
- Exceptional cleanliness and tensile strength

They are ideal for use with the full range of engineered precision cleaners from Chemtronics® including Electro-Wash® PX Fiber Optic Cleaner, Electro-Wash® NXO Matrix Remover, and Pow-R-Wash™ Cable Cleaner.



Econowipes™ Lint-Free Wipes

Optimum purity in a non-woven wipe

Coventry™ Econowipes™ Lint Free Wipes are a non-woven, hydro-entangled, proprietary blend of polyester/cellulose that provides optimum purity, exceptional strength, outstanding moisture absorption, and excellent capture & retention of a wide range of soils and contaminants. Econowipes™ are the wipes that perform dependably and consistently under the heaviest use in telecommunications.

- Proprietary polyester/cellulose hydro-entangled blend
- High absorbency, capacity and retention rate
- Exceptionally high wet strength
- Non-contaminating and excellent durability
- Excellent particle entrapment and retention
- Packaged in a Class 100 environment

Econowipes™ Lint Free Wipes are available in three convenient sizes:

6713 Econowipes™ Lint Free Wipes

- 12" x 13" (30.5 cm x 33.0 cm) wipes, 50 per bag
- Quarter fold on 6713 improves handling
- Creped pattern on 6713 improves softness and absorbency

Applications:

- Work-bench or cable cleaning
- Buffer gel removal
- Great size for large tasks

6709 Econowipes™ Lint Free Wipes

- 9" x 9" (22.9 cm x 22.9 cm) wipes, 300 per bag

Applications:

- Medium size for cleaning tools and test equipment
- CRT and LCD cleaning

6704 Econowipes™ Lint Free Wipes

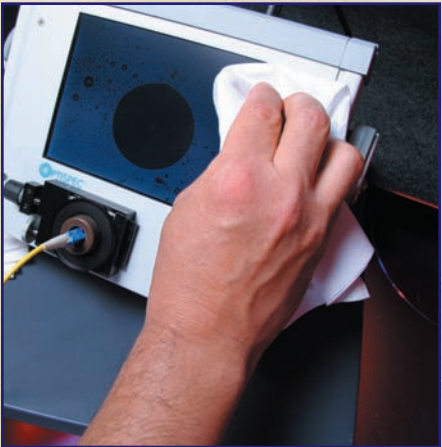
- 4" x 4" (10.2 cm x 10.2 cm) wipes
- 1200 wipes per bag, packed into 12 – 100 wipe resealable bags

6704F Econowipes™ Lint Free Precision Wipes

- 4" x 4" (10.2 cm x 10.2 cm) wipes
- 100 wipes per resealable bag

Applications:

- Perfect for non-linting preparation for fusion splice
- Connector cleaning
- Small wipes with high absorbency for tight areas
- Small size for portability or crowded work bench



Opticwipes™ Lint-Free Wipes

The soft laboratory-grade cellulose paper designed for use on optical surfaces, LCD screens on test equipment

Fiberscopes, microscopes and optical lenses are easily cleaned using this premium-grade lens cleaner. Opticwipes™ are 100% noncontaminating cellulose paper, with high absorbency and contamination entrapment, as well as high wet strength. Opticwipes™ are ideal for wiping sensitive surfaces and optical grade surfaces.

- 100% cellulose
- Highly absorbent; high wet strength
- Non-contaminating; won't lint
- Solvent resistant

Applications:

- Cleaning optical surfaces such as microscope lenses, test equipment, LCD screens and precision instrumentation
- Best for cleaning optical lenses

C920 500 wipes
9" x 9" (23 cm x 23 cm)

Cleanroom Chamois™

The superior wipe for surface cleaning and particle entrapment

The Cleanroom Chamois™ is the only wipe made from a 50/50 nylon/polyester microfiber blend, providing superior toughness and particle entrapment. The unique microfibers in the Cleanroom Chamois™ are not available in any other microfiber. They have a unique wedge shape, which lifts soils like a squeegee. The fibers entrap all types of contaminants from the surface more effectively than larger, conventional round fibers found in polyester and cotton wipes.

- 50/50 nylon/polyester microfiber
- The best wipe for entrapping particles
- Very highly absorbent; high wet strength
- Non-contaminating
- Solvent resistant
- Laser cut and sealed edges

Applications:

- Cleaning glass and other flat surfaces
- Cleaning end faces

7348LE Sealed Edge Cleanroom Chamois™

Microfiber (high absorbency)
50 wipes - 8" x 8" (20 cm x 20 cm)

Application Tip

Electro-Wash® MX can be sprayed into a 6713 Econowipes™ Lint Free Wipe to quickly remove buffer gel.

The 6713 Econowipes™ are rugged wipes, about the size of a red shop cloth but much cleaner and far more absorbent

CONTACT CLEANERS

Pow-R-Wash™ Contact Cleaners

These high purity formulations remove environmental contaminants and protect contacts from corrosion and frictional wear. Contact cleaners restore electrical continuity to all electronic and electrical contacts by penetrating and removing insulating oil and grease, conductive carbon soil, and insulative oxides from contact surfaces. By restoring full circuit continuity, Chemtronics® contact cleaners improve the performance of all equipment that relies on electrical contacts.

Aerosols can be sprayed in any direction, even upside down. Look for the "All-Way Spray" icon on the can.



Recommended for every phase of electronics and electrical contact maintenance including:

- Metal contacts
- Plastic embedded contacts
- Potentiometers
- Relays and switches
- Circuit breakers
- Fuse blocks
- Electronic controls
- Electrical panels
- Motors and armatures
- Plugs and sockets
- Solenoids



PRODUCT SELECTION GUIDE

Product	Plastic Safe	Flammable	Cleaning Strength	Recommended Application
Pow-R-Wash™ VZ	Test	No	••••	Cleaning of metal contacts, plugs and sockets, solenoids, potentiometers, and rheostats. Removal of oxidized oil and grease from contacts, relays and switches, circuit breakers, and fuse blocks. Dielectric breakdown of 15 kV.
Pow-R-Wash™ CZ	Yes	No	••	Outstanding plastic safety. Cleaning of sensitive plastic plugs and insulation, contacts, plugs and sockets, solenoids, potentiometers, rheostats, relays and switches, circuit breakers and fuse blocks. Excellent dielectric breakdown of 31 kV.
Pow-R-Wash™ PN New & Improved	Yes	No	•••	Cleaning live contacts near sensitive plastic insulation; ideal for contact and switch maintenance, cleaning ice-cube relays, electrical motors; removing carbon dust from contacts and motor windings; cleaning test equipment, probes and contacts. Good dielectric breakdown of 26 kV.
Pow-R-Wash™ Cable Cleaner	Yes	Yes	•••	Splice & termination cleaner with a high flashpoint of 152° F. Non-chlorinated, non-terpene based formula. High dielectric breakdown of 62 kV.
DPL® Contact Lubricant	Yes	Yes	•••	Cleans, protects, and lubricates all electrical and electronic switches, contacts, relays, plugs, and sockets. Can be used in applications exposed to extreme weather conditions. Displaces moisture from electrical and electronic components. Minimizes friction and metal wear. Excellent corrosion protection under high humidity and salt spray conditions. Dielectric breakdown of 30 kV.

• Mild Cleaner

•• Good Cleaning Strength

••• Extra Cleaning Strength

•••• Heavy-Duty Cleaning Strength

••••• Maximum Cleaning Strength

Pow-R-Wash™ VZ

The economical non-ozone depleting, nonflammable contact cleaner safe for use on live circuits

Verizane™ Cleaning Chemistry is a brand new non-ozone cleaning formulation. Engineered to replace HCFC-141b, this low odor, no flash, nonflammable aerosol offers the most cleaning value for your money.

- Cleans quickly, dries fast; quick one-step clean and dry process
- New HFC Technology; low odor and no flammability
- No ODP, low VOC; minimal environmental impact
- Leaves no residue; no wiping or rinsing necessary
- Competitively priced; controls costs

Verizane™ is engineered to provide the outstanding performance and benefits that you've come to expect from Chemtronics®, at an affordable price. Verizane™ is:

- Nonflammable
- Ozone safe
- Fast evaporating
- Dielectric Breakdown of 15 kV

Applications:

- Cleaning central office SONET switches
- Ozone safe replacement for cleaning central office switch banks
- Maintaining and repairing contacts and controls

ES6300 12 oz / 340 g aerosol

Pow-R-Wash™ CZ

The first non-ozone depleting, nonflammable contact cleaner safe for use on powered-up contacts and surrounding plastics

Formulated by ITW Chemtronics® in 1992, Cirozane™ CFC / HCFC Replacement Chemistry, provides the ultimate cleaner without any undesirable trade-offs. Cirozane™-based products offer you a high performance, ultra-safe "drop-in" replacement to all CFC and HCFC chemistries. Cirozane™ chemistry is the result of an 18-month research effort and is based on 3M™ Novec™ Engineered Fluids. These products offer all the performance of CFCs and HCFCs without any ozone depleting compounds. Cirozane™ is for those who demand the very best without compromise.

- Still the best CFC-113 and HCFC replacement
- Dielectric Breakdown of 31 kV
- Safe on plastics
- Nonflammable
- Regular cleaning strength
- Ozone safe
- Dries fast
- Leaves no residue

Applications:

- Removes oil, grease, and carbon dust
- Can be used on energized equipment
- Ideal for use on sensitive plastics

ES7300 12 oz / 340 g aerosol

New and Improved Pow-R-Wash™ PN

The nonflammable contact cleaner safe for use on powered-up contacts and surrounding plastics

New and Improved Pow-R-Wash™ PN 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.

- The most plastic safe contact cleaner available
- Dielectric Breakdown of 26 kV
- Nonflammable
- Regular cleaning strength
- Dries fast
- Leaves no residue
- Contains HCFC-225
- Patented — U.S. Patent number 6,746,998.

Applications:

- Removes carbon dust from circuit breakers and field contacts
- Cleans ice cube relays, plastic encased contacts
- Ideal for cleaning switch-motor assemblies

ES1677* 12 oz / 340 gm aerosol

*Not for sale in Canada



Pow-R-Wash™ Contact Cleaners



Application Tip

Pow-R-Wash™ Cable Cleaner exhibits a much higher dielectric breakdown than other products in its category; tested at 62 kV, this product has one of the highest dielectric breakdowns available. The higher the dielectric breakdown, the less likely current leakage (or tracking) will occur.

DPL® Contact Lubricant
The deep penetrating lubricant formulated to displace moisture, inhibit corrosion, reduce friction, and protect metal surfaces

DPL® Contact Lubricant contains an advanced formulation that displaces water, moisture and humidity to quickly restore electrical values. Ideal for a wide range of electrical and electronic applications, DPL® Contact Lubricant quickly penetrates into contacts and switches to seal out moisture and protect against corrosion. DPL® Contact Lubricant is also great for quickly loosening rusted, corroded and frozen parts for easy removal.

- Loosens, cleans, lubricates and protects frozen or rusted parts
- Foaming spray penetrates deeply to remove moisture
- Plastic safe and nonconductive
- Extra-strength solvent evaporates quickly without leaving residue
- Contains no chlorinated solvents
- Silicone-free
- Ozone safe

- Applications:**
- Electrical contacts, potentiometers, rheostats, solenoids
 - Electrical equipment
 - Motors, generators, and compressors
 - Bearings, chains, cables, pulleys and gear drives

ES1626 11 oz / 322 g aerosol

Pow-R-Wash™ Cable Cleaner
The extra-strength, plastic safe cable cleaner for tough soils and cable contaminants

Pow-R-Wash™ Cable Cleaner is a high flash point cleaner that quickly removes soils, adhesives, and residues from insulation jackets and conductors on telecom, fiber optic and coaxial cables. Excellent wetting action lifts and removes soils from the tightest tolerance areas. Pow-R-Wash™ Cable Cleaner is also ideal for removing carbonization, oxidized oils and greases from contacts.

- Extra cleaning strength for all types of soils
- Leaves no residue; slower controlled evaporation cleans even the heaviest soils
- Dielectric Breakdown of 62 kV
- Safe on plastics
- High flash point
- Ozone safe

- Applications:**
- Removes dirt and gel from buried cable
 - Effectively removes oxidants from old cables
 - Removes oils and grease from equipment and tools
 - Can also be used to clean field contacts and terminations

ES2425 13.5 oz / 385 g aerosol

Max-Kleen™ Heavy Duty Degreasers



Bringing heavy-duty cleaning to the most difficult jobs, these industrial strength cleaners offer fast and easy removal of grease, tar, asphalt, oil and grime. For the extra-strength that your tough degreasing job needs, use Max-Kleen™ Heavy-Duty Degreasers.

Aerosols can be sprayed in any direction, even upside down. Look for the "All-Way Spray" icon on the can.



Recommended for all degreasing including:

- Clutches, motors, generators, and compressors
- Electrical motors and equipment
- Bearings, chains, cables, pulleys and gear drives
- Brakes, springs and clutches

Max-Kleen™ Lectro-Solv™
The extra-strength, nonflammable heavy duty degreaser with a high dielectric

- Best for electrical applications
- Nonflammable, no flash point
- Dielectric strength of 30 kV
- Non-corrosive and nonconductive
- Extra-strength solvent evaporates quickly without leaving residue
- Ozone safe
- Contains trichloroethylene

ES2279 19 oz / 539 g aerosol
ES179 1 gal / 3.7 L liquid

Max-Kleen™ Xtreme™
The extra-strength, nonflammable heavy duty degreaser

- Most aggressive heavy-duty degreaser
- Nonflammable, no flash point
- Dielectric strength of 18 kV
- Non-corrosive and nonconductive
- Extra-strength solvent evaporates quickly without leaving residue
- Ozone safe
- Contains n-propyl bromide

ES2284 19 oz / 539 g aerosol
ES184 1 gal / 3.7 L liquid

Max-Kleen™ Citrus
The citrus-based extra-strength, heavy duty degreaser

- Citrus-based formula
- Engineered for fast removal of oxidized grease, sludge, wax, tar and oil
- Dielectric strength of 62 kV
- Does not contain chlorinated solvents
- Flashpoint greater than 100° F
- Non-corrosive and nonconductive
- Safe on most metals and plastics
- Ozone safe
- Contains terpenes

ES2289 15 oz / 425 g aerosol
ES189 1 gal / 3.7 L liquid

PRODUCT SELECTION GUIDE

Product	Evaporation Rate	Flammable	Cleaning Strength	Recommended Application
Max-Kleen™ Xtreme™	Fastest	No	•••••	Heavy-duty metal degreasing. Removal of oxidized oil and grease from tools, clutches, bearings and housings. Heavy degreasing operations. Dielectric strength of 18 kV. Contains n-propyl bromide.
Max- Kleen™ Lectro-Solv™	Fast	No	•••••	Electrical degreasing. Cleaning of oxidized oil and grease from electrical motors and generators. Removal of oxidized oil, grime and grease from contacts, relays and switches, circuit breakers, and fuse blocks. Dielectric strength of 30 kV. Contains trichloroethylene.
Max- Kleen™ Citrus	Slow	Yes	•••	Mechanical parts cleaning. Removal of tar and waxes from metal surfaces and parts. Automotive, aerospace, and general fabrication industries degreasing. Cleaning of hand tools and test probes. Removal of ink and marker. Ideal for use with a wipe. Flashpoint above 110°F. Dielectric strength of 62 kV. Contains orange terpenes.
• Mild Cleaner •• Good Cleaning Strength ••• Extra Cleaning Strength •••• Heavy-Duty Cleaning Strength ••••• Maximum Cleaning Strength				

PRESATURATED SWABS AND WIPES

Presaturated Swabs and Wipes

Presaturated swabs and wipes combine Chemtronics® highly effective cleaners with the convenience of a disposable applicator.

- Presats are convenient to use and ideal for field service kits
- Every swab and wipe is hermetically sealed to prevent evaporation and maintain solvent effectiveness

Our presaturated products can be used in a wide variety of applications:

- Cleaning optical surfaces
- Cleaning of tools and instruments
- Clean edge connections on printed circuit cards
- Cosmetic cleaning of test equipment surfaces
- Removes hand oil, dust, and many other surface contaminants

Electro-Wash® MX Presaturated Wipe

The extra-strength, plastic safe universal cleaner with a controlled evaporation for highest cleaning performance.

- Cleans all soil types, removes organic and ionic soils
- Moderate evaporation rate increases cleaning power
- Leaves no residue
- Presaturated single pack wipe great for toolbox, storage bin or splice trailer
- High performance rugged lint-free wipe can be re-saturated with Electro-Wash® MX Aerosol Cleaner

Applications:

- Perfect for cleaning fiber optics and fiber optic connectors, cables, hard-line coax cable, cable splices, motors, flooding compounds, control systems, tools and work surfaces.
- Use Electro-Wash® MX aerosol (ES1621) to re-saturate the wipe for extra cleaning and longer use. See page 4.

CP421 25 - 8" x 10" (20.3 cm x 25.4 cm)
presaturated wipes

T021 100 - 6" x 8.5" (15.2 cm x 21.6 cm)
presaturated wipes



Application Tip

As a tool and work surface cleaner, there is nothing more effective than the solvent in the Electro-Wash® MX Tub. This great cleaner removes oil and grease from pliers and cutters, cleans tar from surfaces, and will clean large surfaces like pay phones and computer consoles



Chempad™ Presaturated Wipe

General purpose, IPA presaturated high-strength lint-free cleaning wipe

- Contains ultra-pure blend of 91% IPA and 9% deionized water
- Formulation is designed for optimum cleaning
- Mild cleaning solution, nonabrasive wipe
- Quickly removes dust, oils and contaminants

Applications:

- Ideal for cleaning test equipment, meters, instruments and other electrical equipment
- Cleans dirt, oxides and oil from magnetic and optical heads

CP400 50 - 3" x 4" (7.6 cm x 10.2 cm)
presaturated pads

IPA Presaturated Wipes

The easy-to-use general-purpose wipe presaturated with isopropyl alcohol

- Features ultra pure mixture of 70% IPA and 30% deionized water
- Highly absorbent wipe picks up contaminants
- Exceptionally strong lint-free wipe will not tear, shred, or unravel
- Holds up to the most rigorous scrubbing

Applications:

- Provides economical cleaning of test equipment and other surfaces
- Great for cleaning bare glass prior to fusion splice operations

SIP100P 100 - 6" x 9" (15.2 cm x 22.8 cm)
presaturated wipes in tub

SIP48P 48 - 6" x 8.5" (15.2 cm x 21.6 cm)
presaturated wipes in tub

Optic Prep™ Presaturated Wipe

The highest quality premoistened lens-grade tissue for cleaning optical surfaces

- Compatible with most plastics, glass and metals
- Mild residue-free cleaning solution, nonabrasive wipe
- Quickly removes dust, oils, fingerprints and contaminants

Applications:

- Cleans and polishes optical surfaces such as lenses and photographic equipment
- Ideal for cleaning scopes, instruments and displays
- Safely cleans plastic lenses, mirrors and prisms
- Great for cleaning safety eye-wear and magnifying lenses

CP410 50 - 4" x 8.25" (10.2 cm x 21 cm)
premoistened wipes

Dusters

Chemtronics® dusters are microscopically clean, oil and moisture free sources of "canned air" developed for applications where safe, ultra-pure cleaning is required. Compact and portable, Chemtronics® dusters deliver powerful jet action to instantly remove particles from even the most inaccessible areas.

Ultrajet® “Big-Blast” Dusters economize solvent usage by removing layers of dry particulate before cleaning. This allows the solvent to work directly on the encrusted soils. Ultrajet® “Big Blast” Dusters also accelerate surface drying when using slow evaporating cleaners.

Use Chemtronics dusters to clean contaminants from:

- Contacts and connectors
- Relays, switches and solenoids
- Telecommunication equipment
- Laboratory instrumentation & keyboards
- Electronic instruments and test equipment

Not all Dusters are Created Equal!

Nonflammable

With safety in mind, Chemtronics® only manufactures dusters that are completely nonflammable. It is impossible to ignite the contents of a Chemtronics® duster. This is the case whether the contents are dispensed in gas or liquid form. Many dusters available from office supply stores or other distribution sources are labeled as nonflammable on the front of the can. However, there is a different warning on the back of the can from the low price office supply store:

WARNING: This product is defined as non-flammable by 16 CFR 1500(3)(6) of the Federal Hazardous Substance Act, C. P. S. C. Reg. HOWEVER, THIS PRODUCT CAN BE IGNITED UNDER CERTAIN CIRCUMSTANCES. DO NOT USE NEAR OPEN FLAME OR ANY INCANDESCENT MATERIAL.

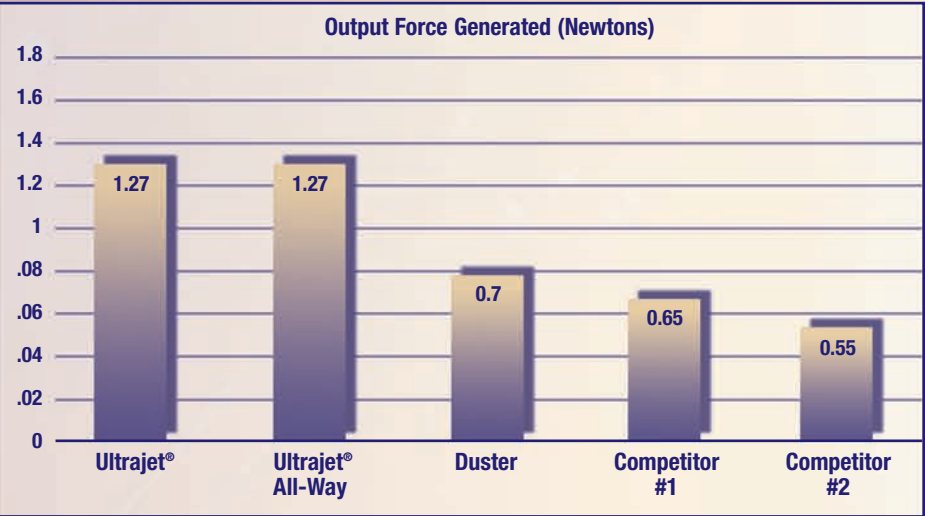
These products can pose a fire or explosion risk when the gas or liquid of the duster is exposed to a spark. Before using a duster, make sure the contents are completely nonflammable, especially before using on or near energized circuits.

Force

In order to increase cleaning, Chemtronics® developed an innovative valve system that can generate twice the force of competitive dusters. When other dusters are tested on force gauges, the force generated is typically between 0.55 Newtons (a unit of measuring force) to 0.65 Newtons. However, when Ultrajet® Dusters are tested side-by-side with competitive dusters, Ultrajet® Dusters generate between 1.25 to 1.30 Newtons. This increased force creates better cleaning, and minimizes the amount of duster sprayed.

All-Way Duster Valve

Ultrajet® All-Way Spray Duster was developed specifically for safe cleaning of sensitive surfaces. When using a conventional duster, accidentally inverting the can will dispense a freezing liquid that can damage sensitive surfaces you are trying to clean. The Ultrajet® All-Way Spray Duster can be sprayed in any direction without the risk of dispensing a liquid spray that can freeze or damage sensitive surfaces.



Ultrajet®

The duster with the BIGGEST blast to clean anything fast

- Heavy-duty cleaning strength
- Safe on plastics
- Nonflammable
- Ozone safe
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue

Applications:

- Removing dust build up from circuit boards and contacts prior to test or measurement
- Effectively cleans debris and obstructions from pin connectors
- Removal of entrapped solvent; effectively dries wet surfaces
- Ideal for field service and service restoration after flooding . . . a compressor in a can!

ES1020 10 oz / 283 g aerosol

Ultrajet® All-Way

The duster that sprays in any direction with the BIGGEST blast to clean anything fast

- All-Way Spray can be sprayed in any direction without the risk of dispensing a liquid spray that can freeze or damage sensitive surfaces
- Heavy-duty cleaning strength
- Safe on plastics
- Nonflammable
- Ozone safe
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue

Applications:

- Cleaning fiber optic connections and bulkheads
- Removing particles from mirror assemblies
- Removing contamination from sensitive surfaces

ES1620 8 oz / 226 g aerosol



Application Tip

The chemical that creates the force in dusters can also emit a damaging, freezing residue. In some areas this freeze spray is used for circuit diagnostics or histology. However in telecommunication applications this freeze spray can damage mirrors, cause optical misalignments, and promote moisture absorption on critical surfaces. In central office applications, dusty connectors need to be cleaned without the generation of a damaging freezing blast. The UltraJet® All-Way Biggest Blast has 1.27 Newtons of force to quickly remove the dust and debris. It works in any position, and will not spray an icy blast that may damage a sensitive switch or precision optical lens.

Dusters

Duster
The economical, regular strength duster

- Good cleaning strength
- Safe on plastics
- Nonflammable
- Ozone safe
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue

Applications:

- Removing debris from keyboards, office equipment and instrument panels.
- Removing surface contamination from A/V equipment

- ES1017** 10 oz / 283 g aerosol
ES1217 8 oz / 226 g aerosol
ES1617 12 oz / 340 g aerosol

Dusters for End Face Cleaning?

Almost everybody has tried to remove attenuation-causing contamination from an end face with a duster. But does it work reliably and in a repeatable manner?

When cleaning connections, contaminants are moved off of the fiber end face. However, the smaller the contaminant the stronger it is bound to the end face surface through electrostatic attraction. It is very unlikely that any duster will be able to eliminate all the contaminants from an end face surface. More likely, it will not move or worse, it will become more deeply embedded in inaccessible crevices and corners, ultimately affecting the alignment and cause greater attenuation. Also, dusters will not remove any oil or moisture that may be deposited on the end face. The best procedure for end face cleaning is the Combination Cleaning process (CCp™). See page 1 for details.

Dusters are beneficial for cleaning dust and soil from connectors before bulkhead removal to minimize cross contamination, removing debris from instrument panels, cleaning dirt from pin connectors, and even increasing the evaporation of slow-drying solvents. Dusters are excellent tools for cleaning large dry dust, fiber or grit particles. They are not effective in removing the small particles and other contaminants on end faces.

PRODUCT SELECTION GUIDE

Product	Force Generated	All-Way Spray	Cleaning Strength	Recommended Application
Ultrajet®	1.27 Newtons	No	••••	Removing dust build up from circuit boards and contacts prior to test or measurement. Effectively cleans debris and obstructions from pin connectors. Removal of entrapped solvent; effectively dries wet surfaces.
Ultrajet® All-Way	1.27 Newtons	Yes	••••	Cleaning fiber optic connections and bulkheads. Removing particles from mirror assemblies. Removing contamination from sensitive surfaces
Duster	0.70 Newtons	No	••	Removing debris from keyboards, office equipment and instrument panels. Removing surface contamination from A/V equipment
• Mild Cleaner •• Good Cleaning Strength ••• Extra Cleaning Strength •••• Heavy-Duty Cleaning Strength ••••• Maximum Cleaning Strength				

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Email us at AskChemtronics@chemtronics.com
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