# Chemtronics®

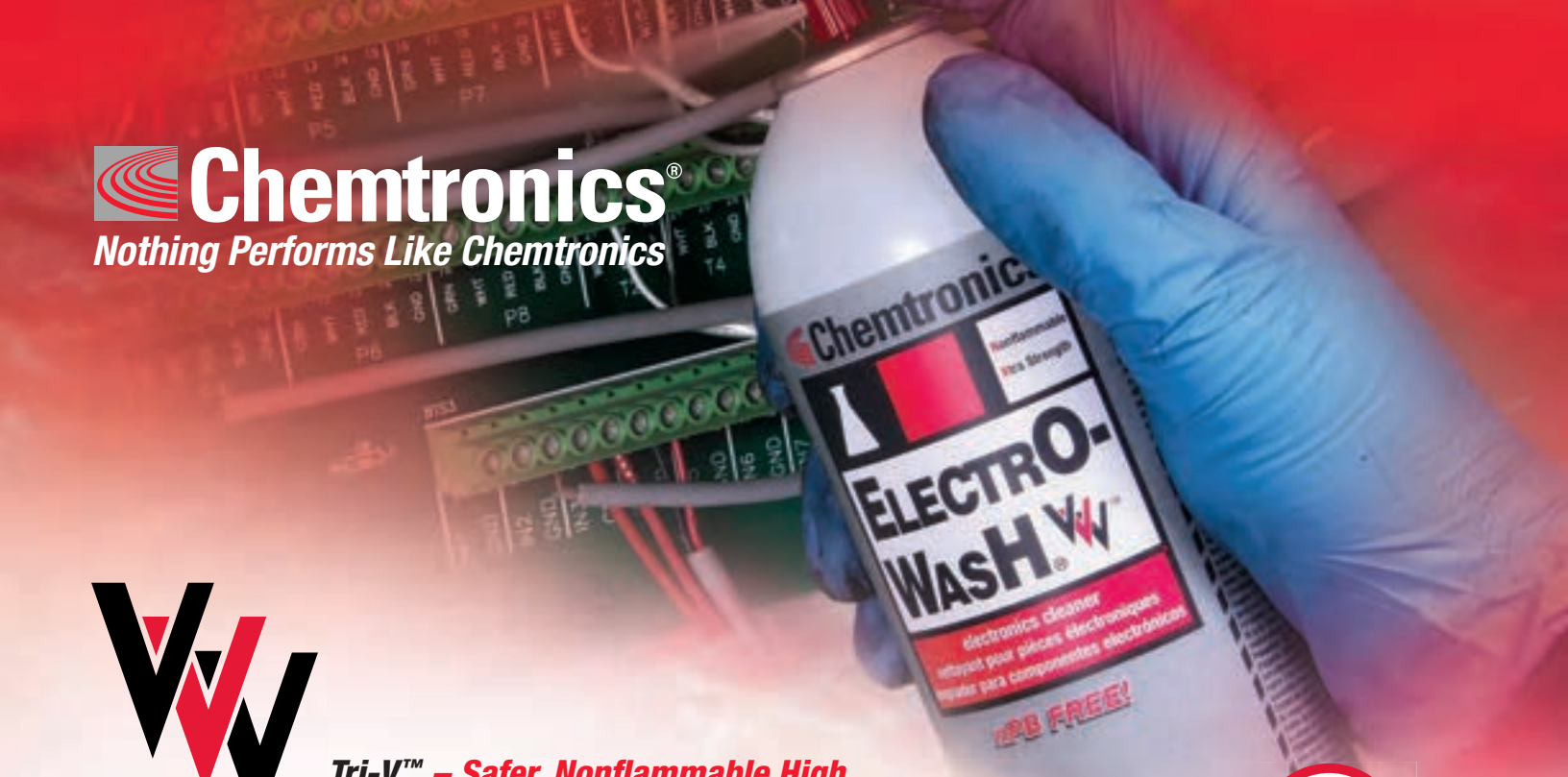
## PRODUCT CATALOG

V1.0

**Superior products for electronic prototyping, assembly & maintenance**

# Chemtronics®

*Nothing Performs Like Chemtronics*




## *Tri-V™ – Safer, Nonflammable High Performance nPB Replacement Chemistry*

Cleaning solvent choices are being constrained by regulations, safety concerns and cost. **Chemtronics Tri-V™ High Performance Solvents expand cleaning chemistry options.** These engineered cleaning solutions offer powerful cleaning performance for vapor degreasing, ultrasonic cleaning and immersion cleaning.

- Cost and cleaning performance of n-propyl bromide (nPB), but without the safety concerns.
- Aerosol and bulk packaging available for benchtop cleaning, immersion cleaning, or vapor degreasing.
- Available in Electro-Wash® Tri-V for electronic cleaning, Max-Kleen™ Tri-V™ for heavy-duty cleaning, and Flux-Off® Tri-V™ for removing flux from electronic assemblies.

## *Chemtronics offers a wide variety of other high performance solvent cleaners:*

**Delta** – Powerful, nonflammable AK225 replacement chemistry

**Verizane™** – Nonflammable and effective on most sensitive plastics

**Cirozane™** – Nonflammable and safest on sensitive plastics

**Contact Chemtronics today! Application specialists are ready to identify the best choice for you.**

*770-424-4888 | 800-645-5244 • askchemtronics@chemtronics.com*

## nPB Replacements for Greater Safety

n-propyl bromide (also known as nPB or 1-Bromopropane, CAS 106-94-5) is under close scrutiny by local and national government officials and health and safety managers because of safety concerns.

Studies have shown that exposure to nPB can cause negative neurological and reproductive effects. The National Toxicology Program (NTP) has stated that nPB is "reasonably anticipated to be a human carcinogen", based on increased lung, large intestine and skin cancers observed in animal studies.

OSHA has issued a Hazard Alert detailing worker safety concerns. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends a 10 ppm time-weighted average threshold limit, but has proposed a lower 0.1 ppm (ACGIH 2013). (Source: OSHA Hazard Alert - https://www.osha.gov/dts/hazardalerts/1bromopropane_hazard_alert.html)

Safety, regulatory and liability concerns are driving the change from nPB, and Chemtronics® has the ideal replacements with Tri-V™ High Performance Solvents. Electro-Wash® Tri-V, Max-Kleen™ Tri-V, and Flux-Off® Tri-V offer the cost and cleaning performance of nPB, but with much greater safety!

**Electro-Wash® High Purity Solvents** are the most effective products made for critical cleaning and degreasing. Each cleaner is engineered for specific applications — from precision cleaning of sensitive equipment to heavy duty degreasing. Electro-Wash® cleaner degreasers clean a wide variety of oil, grease, oxides and handling contamination from equipment and assemblies.

## Electro-Wash® QD

**Fast drying, nonflammable electronics cleaner degreaser**

- Nonflammable, no chlorocarbons
- Excellent material compatibility
- Displaces moisture
- Evaporates fast, minimizes down time
- NSF registered K1 and K2
- All-Way Spray aerosol

**DEL1608B** 12 oz / 340 g BrushClean™ aerosol

## Electro-Wash® VZ

**Economical, non-ozone depleting, nonflammable universal cleaner degreaser**

- Nonflammable
- One cleaner for all soil types
- Low odor
- Evaporates quickly without leaving residue
- Penetrates to clean hard to reach areas
- All-Way Spray and BrushClean attachment

**ES6100** 12 oz / 340 g aerosol
**ES6119** 19 oz / 538 g aerosol
**ES6101** 1 gal / 3.7 L liquid
**ES6155** 53 gal / 200 L liquid

DEL1608B ES6100 ES6119

## *All-Way Spray*

**Chemtronics aerosol products (where indicated) can spray even when rotated to clean hard-to-reach places.**

VVV1614 VVV114 VVV514

DEL1601 DEL101

## Electro-Wash® Tri-V

**Extra-strength, nonflammable electronics cleaner degreaser for replacing n-propyl bromide**

- Nonflammable
- Can be used on energized equipment
- Fast drying
- Does not contain n-propyl bromide, trichloroethylene, or perchloroethylene
- NSF registered K1 and K2

**VVV1614** 12 oz / 340 g aerosol
**VVV114** 1 gal / 3.7 L liquid
**VVV514** 5 gal / 19 L liquid
**VVV5514** 53 gallons / 200 L liquid

## Electro-Wash® Delta

**Extra-strength, nonflammable electronics cleaner degreaser**

- Nonflammable
- Best AK225 replacement chemistry
- Fast drying
- Contains no ozone depleting compounds, low VOC's
- NSF registered K1 and K2
- All-Way Spray aerosol

**DEL1601** 12 oz / 340 g aerosol
**DEL101** 1 gal / 3.7 L liquid

## Product Selection Guide

| Cleaner Degreasers | Features: Plastic Safe | Nonflammable | No Ozone Depleting Chemicals | Dries Fast | Dielectric Breakdown (Aerosol) | VOC-EPA (Aerosol / Liquid) | Cleaning Ability: Grease | Oil | Ionic Soils | Cleaning Methods: Aerosol Spray | Vapor Degreasing | Ultrasonics | Hot Immersion | Cold Immersion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Electro-Wash® Tri-V | NR | ✓ | ✓ | ✓ | 21kV | 70% / 95% | 1 | 1 | 2 | ✓ | ✓ | ✓ | | ✓ |
| Electro-Wash® Delta | 2 | ✓ | ✓ | ✓ | 31kV | 63% / 85% | 2 | 1 | 2 | ✓ | | ✓ | | ✓ |
| Electro-Wash® NXO | 3 | ✓ | ✓ | ✓ | 15kV | 38% / 50% | 1 | 1 | 2 | ✓ | | ✓ | | ✓ |
| Electro-Wash® QD | 2 | ✓ | ✓ | ✓ | 11kV | 0% / NA | 3 | 1 | 2 | ✓ | | | | |
| Electro-Wash® VZ | 2 | ✓ | ✓ | ✓ | 17kV | 19% / 45% | 3 | 1 | 2 | ✓ | | ✓ | | ✓ |
| Electro-Wash® PX | 1 | | ✓ | ✓ | | 75% / 100% | 1 | 1 | 1 | ✓ | | | | ✓ |
| Electro-Wash® MX | 1 | | ✓ | | | 75% / 100% | 1 | 1 | 1 | ✓ | | | | |
| Electro-Wash® PR | 1 | | ✓ | ✓ | | 75% / NA | 1 | 1 | - | ✓ | | | | |
| Electro-Wash® CZ | 1 | ✓ | ✓ | ✓ | 17kV | 75% / NA | 3 | 2 | 2 | ✓ | | | | |
| Electro-Wash® Two Step* | NR | ✓ | ✓ | | | NA / 100% | 1 | 1 | 1 | | | ✓ | ✓ | ✓ |
| ***Industrial Degreasers*** | | | | | | | | | | | | | | |
| Max-Kleen™ Tri-V | NR | ✓ | ✓ | ✓ | 8kV | 70% / 90% | 1 | 1 | 2 | ✓ | ✓ | ✓ | | ✓ |
| Max-Kleen™ Citrus | 1 | ✓ | ✓ | | 62kV | 49% / 49% | 2 | 2 | 2 | ✓ | | ✓ | ✓ | ✓ |
| Max-Kleen™ Citrus HF | 1 | | ✓ | | 33kV | 50% / 4% | 1 | 1 | 3 | ✓ | | | | |

Strongest Cleaner … Most Plastic-Safe

* Plastic safety rated at room temperature  1 – Excellent  2 – Good  3 – Fair  NR – Not Recommended

## Electro-Wash® MX

**Extra-strength, plastic safe universal cleaner with moderate evaporation time**

- Safe on plastics
- Flammable
- Extra cleaning strength
- Moderate evaporation rate increases cleaning power
- Leaves no residue
- Removes organic and ionic soils
- All-Way Spray aerosol

**ES1621** 10 oz / 283 g aerosol
**CP421** 25 - 8" x 10" / 20.3 cm x 25.4 cm premoistened wipes (9 ml each
**FW2150** 9 g / 0.32 oz pen

## Electro-Wash® CZ

**Non-ozone depleting, nonflammable cleaner degreaser safe for use on plastics**

- Safe on plastics
- Nonflammable
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES7100** 12 oz / 340 g aerosol

## Electro-Wash® NXO

**Extra-strength, nonflammable cleaner degreaser**

- Nonflammable
- Extra cleaning strength
- Dries fast
- Leaves no residue
- Test on plastics
- All-Way Spray aerosol

**ES1607** 12 oz / 340 g aerosol
**ES107** 1 gal / 3.7 L liquid

## Electro-Wash® PX

**Extra-strength universal cleaner and degreaser safe for use on plastics**

- Safe on plastics
- Flammable
- Extra cleaning strength
- Dries fast
- Leaves no residue
- Removes organic and ionic soils
- All-Way Spray aerosol

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

## Electro-Wash® Two Step

**Extra-strength, nonflammable ultrasonic and immersion cleaner**

- Nonflammable
- Extra cleaning strength
- Leaves no residue when rinsed with Electro-Wash PX or Electro-Wash CZ
- Increasing temperature increases solvency

**ES125A** 1 gal / 3.7 L liquid

## Electro-Wash® PR

**Regular-strength cleaner safe for use on plastics**

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES1603** 10 oz / 283 g aerosol

ES1621 ES7100

ES1607 ES810

ES125A ES1603

# Heavy-Duty Degreasers

RoHS WEEE Compliant

**Max-Kleen™ Heavy-Duty Degreasers** rise to the challenge of your most difficult jobs. These industrial strength cleaners offer fast, easy removal of grease, tar, asphalt, oil and grime. The extra-strength your toughest degreasing jobs require.

NEW!

*VV179*




*VV2279*

*ES2289*

## Max-Kleen™ Citrus

**Citrus-based extra-strength 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
- Safe on most metals and plastics
- Non-corrosive and nonconductive
- NSF Registered — Nonfood Compounds/Code C1
- All-Way Spray aerosol

| | |
|---|---|
| **ES2289** | 15 oz / 425 g aerosol |
| **ES189** | 1 gal / 3.7 L liquid |
| **ES589** | 5 gal / 19 L liquid |
| **ES5589** | 53 gallons / 200 L liquid |

## Max-Kleen™ Tri-V™

**Extra-strength, nonflammable heavy duty degreaser for replacing n-propyl bromide**

- Nonflammable
- Can be used on energized equipment
- Full azeotrope — ideal when reclamation process is required
- Fast drying
- Does not contain n-propyl bromide, trichloroethylene, or perchloroethylene
- NSF registered K1 and K2

| | |
|---|---|
| **VVV2279** | 20 oz / 567 g aerosol |
| **VVV179** | 1 gal / 3.7 L liquid |
| **VVV579** | 5 gal / 19 L liquid |
| **VVV5579** | 53 gallons / 200 L liquid |

*ES2291*

## Max-Kleen™ Citrus HF

**High flashpoint citrus-based degreaser for heavy greases**

- Citrus-based formula with with a high flash point
- Quickly removes all types of tough soils including oxidized oil and grease
- Safe for use on most metals and plastics
- Flashpoint greater than 140º F
- Non-corrosive and nonconductive
- Low Toxicity
- Leaves no residue
- All-Way Spray aerosol

| | |
|---|---|
| **ES2291** | 13.5 oz / 383 g aerosol |
| **ES5591** | 53 gallons / 200 L liquid |

**Pow-R-Wash™ 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 rely on electrical contacts.

DEL1681

## Pow-R-Wash™ Delta

**Nonflammable cleaner safe for use on powered-up contacts and surrounding plastics**

- Nonflammable
- Best AK225 replacement chemistry
- Fast drying
- Dielectric breakdown 30 kV
- Contains no ozone depleting compounds, low VOC's
- All-Way Spray aerosol

**DEL1681** 12 oz / 340 gm aerosol

ES1605

## Pow-R-Wash™ PR

**Regular-strength contact cleaner safe for use on plastics**

- Safe on plastics
- Flammable
- Dielectric breakdown of 44 kV
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES1605** 10 oz / 283 g aerosol

## Product Selection Guide

| *Cleaner Degreasers* | Plastic Safe | Nonflammable | Cleaning Strength | No Ozone Depleting Chemicals | Dries Fast | VOC-EPA (Aerosol / Liquid) | For Use On Live Circuits | Dielectric Breakdown | Lubricates | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Features** | | | | | | **Benefits and Applications** | | | |
| Pow-R-Wash® Delta | 2 | ✓ | X | ✓ | ✓ | 56% / NA | | 30kV | | Strongest Cleaner |
| Pow-R-Wash® Cable Cleaner | 1 | | X | ✓ | | 50% / NA | | 62kV | | |
| Pow-R-Wash® VZ | 2 | ✓ | R | ✓ | ✓ | 16% / 75% | ✓ | 15kV | | |
| Pow-R-Wash® PR | 1 | | R | ✓ | ✓ | 75% / NA | | 44kV | | |
| Tune-O-Wash | 1 | | R | ✓ | ✓ | 75% / NA | | 23kV | | |
| DPL® Deep Penetrating Lubricant | 1 | | R | ✓ | NA | 0% / NA | ✓* | 30kV | ✓ | |
| Pow-R-Wash® CZ | 1 | ✓ | R | ✓ | ✓ | 7% / NA | ✓ | 31kV | | Most Plastic-Safe |

1 – Excellent 2 – Good R – Regular Strength X – Extra Strength * For lubrication only

ES7300 ES6301 ES6300

## Pow-R-Wash™ CZ

**Non-ozone depleting, nonflammable contact cleaner safe for use on powered-up contacts and surrounding plastics**

- Safe on plastics
- Nonflammable
- Dielectric strength of 31 kV
- Evaporates quickly without leaving residue
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES7300** 12 oz / 340 g aerosol

## Pow-R-Wash™ VZ

**Economical non-ozone depleting, nonflammable contact cleaner safe for use on live circuits**

- Nonflammable
- Dielectric breakdown of 15 kV
- Noncorrosive
- Evaporates quickly without leaving residue
- Test on plastics
- Ideal AK225 replacement
- All-Way Spray aerosol

**ES6300** 12 oz / 340 g aerosol
**ES6301** 1 gal / 3.7 L liquid

## Pow-R-Wash™ Cable Cleaner

**Extra-strength, plastic safe cable and contact cleaner with a moderate evaporation time**

- Safe on plastics
- Flammable
- Dielectric breakdown of 63 kV
- Leaves no residue
- All-Way Spray aerosol

**ES2425** 13.5 oz / 385 g aerosol

ES2425 ES2400

## Tun-O-Wash® Cleaner

**Universal fast drying cleaner for electro-mechanical and electronic tuners**

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue
- Cleans hard-to-reach areas
- All-Way Spray aerosol

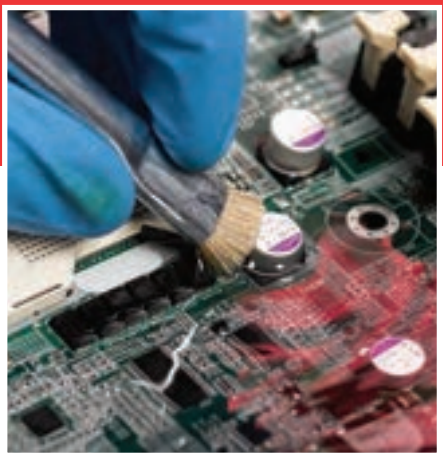
**ES2400** 12.5 oz / 354 g aerosol

## DPL® Deep Penetrating Lubricant

**Deep penetrating lubricant to displace moisture and inhibit corrosion**

- Restores, rejuvenates, protects and preserves contacts
- Foaming spray penetrates deeply to remove moisture
- Loosens, cleans, lubricates and protects frozen or corroded parts
- Dielectric strength of 30 kV
- Contains no chlorinated solvents or silicone
- Non-corrosive and nonconductive
- Safe on metals and plastics
- NSF Registered — Nonfood Compounds/Code H2
- All-Way Spray aerosol

**ES1626** 11 oz / 322 g aerosol



Flux removal is critical to insure reliable circuitry. Not only unsightly, flux residue can promote short circuits and corrosion, degrading or destroying the printed circuit board.
**Flux-Off® Flux Removers** are specially formulated to remove all types of lead-free, rosin (types R, RA and RMA), no-clean, water soluble and synthetic flux.

DELTA™

## Flux-Off® Delta

**Extra strength, nonflammable solvent that removes heavy and encrusted flux deposits**

- Nonflammable
- Best AK225 replacement chemistry
- Fast drying
- Contains no ozone depleting compounds, low VOC's
- All-Way Spray aerosol

**DEL1692** 12 oz / 340 g aerosol
**DEL892B** 6 oz / 141 g BrushClean™ System
**DEL192** 1 gal / 3.7 L liquid
**DEL5592** 53 gal / 200 L liquid

*DEL892B*

NEW!

*VVV595*

VVV™

## Flux-Off® Tri-V™

**Extra strength, nonflammable flux remover for replacing n-propyl bromide**

- Nonflammable
- Can be used on energized equipment
- Fast drying
- Does not contain n-propyl bromide, trichloroethylene or perchloroethylene

**VVV595** 5 gal / 18.9 L liquid
**VVV5595** 53 gal / 200 L liquid

## Product Selection Guide

| | Primary Flux Residue Cleaned | | | | | | | | Features | | | | Cleaning Methods | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Rosin Based* | No-Clean SA-Synthetic | Water Soluble | Removes White Residue | Plastic Safe | Nonflammable | Dries Fast | VOC-EPA (Aerosol / Liquid) | Aerosol Spray | BrushClean™ System | Hand Cleaning | Vapor Degreasing | Ultrasonics | Immersion | Benchtop Spray System | |
| Flux-Off® Tri-V | 1 | 1 | NR | ✓ | NR | ✓ | ✓ | 95% / NA | | | ✓ | ✓ | ✓ | ✓ | ✓ | Strongest Cleaner |
| Flux-Off® Delta | 1 | 1 | NR | ✓ | 2 | ✓ | ✓ | 39% / 52% | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| Flux-Off® Heavy Duty | 1 | 1 | 2 | ✓ | 3 | ✓ | ✓ | 38% / 50% | ✓ | | ✓ | | ✓ | ✓ | ✓ | |
| Flux-Off® VZ | 1 | 2 | NR | | 2 | ✓ | ✓ | 25% / 75% | ✓ | | ✓ | | ✓ | ✓ | ✓ | |
| Flux-Off® Complete | 1 | 1 | NR | | 2 | | ✓ | 42% / 42% | ✓ | | ✓ | | ✓ | ✓ | | |
| Flux-Off® Lead-Free | 1 | 2 | 2 | | 2 | | ✓ | 48% / 51% | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| Flux-Off® No Clean Plus | 1 | 1 | 2 | ✓ | 2 | | ✓ | 48% / 51% | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| Flux-Off® Rosin | 1 | 2 | 2 | | 1 | | ✓ | 75% / 100% | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| Flux-Off® Water Soluble | 1 | NR | 1 | | 1 | | ✓ | 75% / 75% | ✓ | | ✓ | | | ✓ | ✓ | |
| Flux-Off® Aqueous | 1 | 2 | 1 | ✓ | 1 | ✓ | | NA / 16% | | | | | ✓ | ✓ | ✓ | |
| Flux-Off® CZ | 1 | 2 | NR | | 1 | ✓ | ✓ | 22% / NA | ✓ | ✓ | ✓ | | | | | Most Plastic-Safe |

1 – Excellent 2 – Good NR – Not Recommended *R, RMA, RA, Rosin-based No-Clean

## Flux-Off® VZ

**Economical, non-ozone depleting, nonflammable flux remover**

- Nonflammable
- Cleans R, RMA, RA, and no-clean flux
- Low odor
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES6200** 12 oz / 340 g aerosol
**ES6201** 1 gal / 3.7 L liquid
**ES6255** 53 gal / 200 L liquid

## Flux-Off® CZ

**Non-ozone depleting, nonflammable flux remover safe for use on plastics**

- Safe on plastics
- Nonflammable
- Cleans R, RMA, RA, and no-clean flux
- Dries fast
- Leaves no residue
- All-Way Spray aerosol

**ES7200** 12 oz / 340 g aerosol
**ES7208B** 5 oz / 141 g BrushClean™ System

ES6200 ES7200 ES7208B

ES135 ES1035

## Flux-Off® Rosin

**Plastic safe flux remover for cleaning all rosin and rosin-based no-clean flux**

- Safe on plastics
- Flammable
- Evaporates quickly
- Leaves no residue
- All-Way Spray aerosol

**ES1035** 10 oz / 283 g aerosol
**ES1035B** 10 oz / 283 g BrushClean™ System
**ES835B** 5 oz / 141 g BrushClean™ System
**ES135** 1 gal / 3.7 L liquid
**ES535** 5 gal / 18.5 L liquid
**ES5535** 55 gal / 208 L liquid

ES1697 ES897B ES1631

## Flux-Off® Lead-Free

**Powerful flux remover for high temperature, lead-free flux removal**

- Engineered for removing high temperature, lead-free flux
- Can also be used to remove tin/lead fluxes
- Flammable
- Evaporates quickly without leaving residue
- All-Way Spray aerosol

**ES1697** 12 oz / 340 g aerosol
**ES897B** 6 oz / 170 g BrushClean™ System
**ES197** 1 gal / 3.7 L liquid
**ES5597** 55 gal / 208 L liquid

## Flux-Off® Heavy-Duty

**Heavy-duty flux remover for removing encrusted no-clean and rosin flux**

- Nonflammable
- Dries fast
- Leaves no residue
- Test on plastics
- All-Way Spray aerosol

**ES1631** 12 oz / 340 g aerosol
**ES131** 1 gal / 3.7 L liquid

## Flux-Off® Complete

**Powerful, economical flux remover for cleaning no-clean flux**

- Cleans R, RMA, RA, and no-clean flux
- Dries fast
- Leaves no residue
- Flammable
- All-Way Spray aerosol

**ES1698** 12 oz / 340 g aerosol
**ES198** 1 gal / 3.7 L liquid
**ES598** 5 gal / 18.9 L liquid
**ES5598** 53 gal / 200 L liquid

ES198 ES1698

## The BrushClean™ System

**Gentle scrubbing action of a brush combined with high performance flux removers**

*BrushClean™ System for difficult fluxes*

## The BrushClean™ System

This system increases cleaning efficiency in two ways – minimizing solvent usage by applying solvent only where you need it, and maximizing cleaning with the addition of mechanical scrubbing action.

- Powerful solvents with scrubbing action of a brush
- Brush precisely applies solvent
- For critical defluxing, use Controlwipe™ (C910) between brush and board to absorb dissolved flux residues
- Solvent flow flushes brush clean
- New brush supplied with every can

***Three powerful tools — one convenient package:***

*Spot clean with the brush*

*Flush under SMD's with the extension tube*

*Clean large areas with the spray nozzle*

ES896B ES1696

ES130 ES1530

## Flux-Off® Aqueous

**Aqueous flux remover for use in ultrasonics and in-line cleaning systems**

- Water-based saponifier for removing all flux types
- Safe on plastics
- Nonflammable
- Concentrated – dilute to adjust cleaning strength
- Requires a water rinse

**ES132** 1 gal / 3.7 L liquid

## Flux-Off® No Clean Plus

**Powerful economical flux remover for cleaning no-clean flux**

- Flammable
- Dries fast
- Leaves no residue
- Test on plastics
- All-Way Spray aerosol

**ES1696** 12 oz / 340 g aerosol
**ES896B** 6 oz / 170 g BrushClean™ System
**ES196** 1 gal / 3.7 L liquid
**ES596** 5 gal / 18.5 L liquid
**ES5596** 55 gal / 208 L liquid

## Flux-Off® Water Soluble

**Plastic safe flux remover for cleaning water-soluble flux**

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue

**ES1530** 13.5 oz / 383 g aerosol
**ES130** 1 gal / 3.7 L liquid

## IPA - Isopropyl Alcohol

**Conveniently packaged and easy to use 99.8% technical grade isopropyl alcohol**

- Safe on plastics
- Flammable
- Dries fast
- Leaves no residue
- Cleans hard-to-reach areas
- Meets Fed Spec TT-1-735A

**ES605L** 16 fl oz / 473 ml liquid
**ES105** 1 gal / 3.7 L liquid
**ES505** 5 gal / 18.9 L liquid
**ES5505** 53 gal / 200 L liquid

ES105

**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. Economize solvent usage by removing layers of dry particulate allowing the solvent to work immediately on encrusted soils. Also accelerate surface drying when using slow evaporating cleaners.

## Ultrajet® All-Way

**Invertable duster with the BIGGEST blast to clean anything fast**

All-Way Spray can be sprayed into hard to reach places without the risk of dispensing a liquid spray that can freeze or damage sensitive surfaces.

- Nonflammable
- Highest powered cleaning strength
- Zero VOC
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue
- Safe on plastics

**ES1620** 8 oz / 226 g aerosol

## Ultrajet®

**Duster with the BIGGEST blast to clean anything fast**

- Nonflammable
- Highest powered cleaning strength
- Zero VOC
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue
- Safe on plastics

**ES1020** 10 oz / 283 g aerosol

## Ultrajet® 70

**Powerful, economical duster with a BIGGER blast than competitive dusters**

- Nonflammable
- High powered cleaning strength
- Bigger Blast than competitive dusters
- Zero VOC
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue
- Safe on plastics

**ES1015** 10 oz / 283 g aerosol

*ES1620* *ES1020* *ES1015*

## Product Selection Guide

| | Blasting Power | Nonflammable | All-Way Spray | Contents | Force Generated** | Internal Pressure | GWP*** | Use On Live Circuits |
|---|---|---|---|---|---|---|---|---|
| **Ultrajet®** | XX Strength | ✓ | No | HFC-134a | 1.51 N | 71 PSIG | 1300 | Yes |
| **Ultrajet® All-Way** | XX Strength | ✓ | Yes | HFC-134a | 1.78 N | 71 PSIG | 1300 | Yes |
| **Ultrajet® 70** | X Strength | ✓ | No | HFC-134a | 1.35 N | 71 PSIG | 1300 | Yes |
| **Duster** | Regular Strength | ✓ | No | HFC-134a | 0.94 N | 71 PSIG | 1300 | Yes |
| **152A Blast™** | X Strength | | No | HFC-152a | 1.38 N | 63 PSIG | 140 | No |
| **Typhoon Blast™ 70** | X Strength | ✓* | No | HFO-1234ze | 0.93 N | 47 PSIG | 6 | Yes |

* under ambient conditions

** Force generated measured without extension tubes on Shimpo force gauge.

*** Global warming potential (GWP) is calculated based on a 100 year time horizon. Carbon dioxide has a GWP of 1.

## Duster

**Economical, regular strength duster**

- Nonflammable
- Regular cleaning strength
- Zero VOC
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a
- Leaves no residue
- Safe on plastics

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

*ES1617*

## 152A Blast™

**Economical, extra-strength general purpose duster**

- Safe on plastics
- High powered cleaning strength
- Flammable
- Zero VOC
- 100% pure HFC-152a
- 1/10th Global Warming Potential of HFC-134a

**Applications:**

- Cleaning dust and particles from de-energized electronics
- Maintenance and repair of de-energized computers, postage meters, and servers

**ES1029** 10 oz / 283 g aerosol

## Typhoon Blast™ 70 Duster

**Powerful and economical, ultra-low GWP duster with the BIGGER blast**

- Ultra-Low GWP
- High powered cleaning strength
- Nonflammable*
- Zero VOC
- Filtered to 0.2 microns
- 100% HFO-1234ze
- Leaves no residue
- Safe on plastics

**ES1025** 10 oz. / 383 g aerosol

** under ambient conditions*

## Ultrajet® Duster System

**Reusable duster system with a precision surgical-grade chrome trigger valve**

- Nonflammable
- Conductive trigger valve prevents static build-up
- Zero VOC
- Filtered to 0.2 microns
- 100% ultra-pure HFC-134a — leaves no residue
- Safe on plastics

**Applications:**

- Ground valve for cleaning sensitive electronics
- Cleaning inside electrical cabinets

**ES1020K** 10 oz / 283 g aerosol kit
Contents: ES1020R and ES710V
**ES1020R** 10 oz / 283 g aerosol refill
**ES710V** Chrome Trigger Valve

*ES1020K*

*Chrome trigger can be grounded for static sensitive applications, and fits refill can (ES1020R).*

**Chemtronics® Freeze Sprays** are exceptionally pure, nonflammable and provide instantaneous freezing action while leaving no residue. Conveniently packaged and designed for either pin-point or full board application, these non-reactive circuit refrigerants vaporize instantly while cooling targeted areas.

## Freez-It®

**High-performance, pin-point accurate freeze spray for isolating individual components on PC boards**

- Pin-point spray isolates individual components without freezing surrounding areas
- Safe on plastics
- Nonflammable
- Filtered to 0.2 microns

**ES1050** 10 oz / 283 g aerosol
**ES1550** 15 oz / 425 g aerosol

## Freez-It® Antistat

**High-performance, pin-point accurate freeze spray that safely cools individual static-sensitive components**

- Pin-point spray isolates individual components without freezing surrounding areas
- Ideal for use on static sensitive components
- Non-frosting
- Safe on plastics
- Nonflammable
- Filtered to 0.2 microns

**ES1051** 10 oz / 283 g aerosol
**ES1551** 15 oz / 425 g aerosol

*ES1050* *ES1052* *ES1055*

## Freeze Spray

**Economical, general purpose freeze spray with wide spray for cooling entire PC boards**

- Wide spray for cooling entire boards
- Safe on plastics
- Nonflammable
- Filtered to 0.2 microns

**ES1052** 10 oz / 283 g aerosol

## Arctic Blast™

**Ultra-low GWP freeze spray with pin-point accuracy for isolating individual components**

- Ultra-low Global Warming Potential
- Pin-point spray isolates individual components without freezing surrounding areas
- Safe on plastics
- Nonflammable*
- Filtered to 0.2 microns

**ES1054** 10 oz / 283 g aerosol

## Arctic Blast™ Antistat

**Ultra-low GWP antistatic freeze spray with pin-point accuracy for isolating individual components**

- Ultra-low Global Warming Potential
- Pin-point spray isolates individual components without freezing surrounding areas
- Ideal for use on static sensitive components
- Non-frosting
- Safe on plastics
- Nonflammable*
- Filtered to 0.2 microns

**ES1055** 10 oz / 283 g aerosol

** under ambient conditions*

## Product Selection Guide

| Product | Application | Global Warming Potential* | VOC (EPA) | Frost Formation | Cooling Speed | Cooling Temperature |
|---|---|---|---|---|---|---|
| **Arctic Blast™** | Pin-point | <1 | 0% | Yes | Fast | -49ºF/-45ºC |
| **Arctic Blast™ Antistat** | Pin-point | <1 | <1% | No | Fast | -49ºF/-45ºC |
| **Freeze-It®** | Pin-point | 1300 | 0% | Yes | Fast | -60ºF/-51ºC |
| **Freeze-It® Antistat** | Pin-point | 1300 | <1% | No | Fast | -60ºF/-51ºC |
| **Freeze Spray** | Wide Area | 1300 | 0% | Yes | Very Fast | -60ºF/-51ºC |

* Global warming potential (GWP) is calculated based on a 100 year time horizon. Carbon dioxide has a GWP of 1.

**Chemtronics Static Free™** products are engineered to protect electronic equipment and work spaces from static buildup while cleaning and reconditioning. These products provide everything required for a comprehensive surface treatment program as recommended by ANSI/ESD S20.20.

## Static Free™ Hand Guard™

**Hand lotion formulated to protect against electrostatic discharge**

- Special formulation minimizes potential for static damage
- Penetrates deeply to moisten and refresh dry, chapped or chemically irritated skin
- Nongreasy formula contains Aloe Vera and Vitamin E
- Contains no lanolin, silicone or mineral oil that could inhibit solderability of printed circuits or components

**C805** 8 fl oz / 236 ml liquid

*CSP20*

## Static Free™ Plast-N-Glas®

**Foaming, non-streaking static dissipative cleaner for transparent surfaces**

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

**Applications:**

- Cleaning computer monitors and housings
- Removing handling soils from precision glassware
- Maintaining cleanliness of observation windows on production equipment

**ES1668** 14 oz / 397 g aerosol

## Screen Prep™ Presaturated Wipe

**Convenient cleaning and static control for monitors**

- Prevents airborne recontamination for up to 7 days
- Safely removes dust, dirt, oil and nicotine
- Controls static-generated contamination
- Wet pad cleans and applies static protection
- Dry wiper polishes screen optically clear

**CSP20** 25 twin packs
#1 presaturated pad
#2 polishing wiper

## Static Free™ Mat and Benchtop Reconditioner

**Cleans and rejuvenates ESD-safe surfaces**

- Cleans and rejuvenates burned or dead spots on ESD mats
- Will not dry mat surfaces with repeated use
- Long-lasting dissipative protection – up to 30 days
- Effective in relative humidity below 15%
- Chloride and amine free formulation
- Noncorrosive
- Meets static decay criteria of MIL-B-891705C

**ES1664T** 16 fl oz / 472 mL Trigger Spray

**SIP125P1664** *NEW!* 125 presaturated wipes in pull-up tub

**6209HC1664** *NEW!* 150 presaturated cleanroom wipes in ESD pouch

*ES1668*

*6209HC1664*

*SIP125P1664*

**All Soder-Wick meet these specs:**
- MIL-F-14256 F type R flux
- NASA-STD-8739.3 Soldered Electrical Connections
- DOD-STD-883E, Method 2022
- ANSI/IPC J STD-004, Type ROL0

**Soder-Wick® Desoldering Braid**, the world's leading brand of desoldering braid, is the fastest, cleanest and safest braid in the industry. It significantly reduces rework/repair time and minimizes the risk of heat damage to the board.

**Solder-Wick No-Clean and Lead Free wick meet these specs:**
- Meets MIL-STD-883B, Bellcore TR-NWT-000078, ANSI/IPC J SF-818
- Meets parameters tested by the Singapore Institute of Standards and Industrial Research (SISIR) for Solderability
- ANSI/IPC J STD-004, Type ROL0

## Product Selection Guide

| Product | Size | | Color | 5' 1.5m * | 10' 3.0m * | 25' 7.5m | 100' 30.5m | 500' 152.5m | 5' / 1.5m VacuPak™ * |
|---|---|---|---|---|---|---|---|---|---|
| **Soder-Wick® Rosin** Fastest wicking action with rosin flux coated desoldering braid | 1 | .030"/0.8mm | White | 80-1-5 | 80-1-10 | 50-1-25 | | | SW18015 |
| | 2 | .060"/1.5mm | Yellow | 80-2-5 | 80-2-10 | 50-2-25 | 50-2-100 | 50-2-500 | SW18025 |
| | 3 | .080"/2.0mm | Green | 80-3-5 | 80-3-10 | 50-3-25 | 50-3-100 | | SW18035 |
| | 4 | .110"/2.8mm | Blue | 80-4-5 | 80-4-10 | 50-4-25 | 50-4-100 | | SW18045 |
| | 5 | .145"/3.7mm | Brown | 80-5-5 | 80-5-10 | 50-5-25 | | | SW18055 |
| | 6 | .210"/5.3mm | Red | 80-6-5 | | 50-6-25 | | | |
| **Soder-Wick® No Clean** Cleanest, leaving behind no ionic residue, with no clean flux coated desoldering braid | 1 | .030"/0.8mm | White | 60-1-5 | 60-1-10 | | | | |
| | 2 | .060"/1.5mm | Yellow | 60-2-5 | 60-2-10 | | | | SW16025 |
| | 3 | .080"/2.0mm | Green | 60-3-5 | 60-3-10 | | | | SW16035 |
| | 4 | .110"/2.8mm | Blue | 60-4-5 | 60-4-10 | | | | SW16045 |
| | 5 | .145"/3.7mm | Brown | 60-5-5 | 60-5-10 | | | | |
| | 6 | .210"/5.3mm | Red | 60-6-5 | | | | | |
| **Soder-Wick® Lead-Free** Safest on thermally sensitive components, with this specially engineered no clean flux coated desoldering braid | 1 | .030"/0.8mm | White | 40-1-5 | | | | | |
| | 2 | .060"/1.5mm | Yellow | 40-2-5 | 40-2-10 | | | | SW14025 |
| | 3 | .080"/2.0mm | Green | 40-3-5 | 40-3-10 | | | | SW14035 |
| | 4 | .110"/2.8mm | Blue | 40-4-5 | 40-4-10 | | | | SW14045 |

**Offered in static dissipative (ESD-safe) bobbins:*
- DOD Standard 1686C and MIL-HDBK-263B
- Mil-Std-2000A
- Mil-B-81705C Static Decay Rate Provision

### VacuPak™ Resealable Packaging

Guarantees Soder-Wick is as fast as the day it was made. Cans are vacuum sealed with nitrogen-purge to eliminate moisture, which causes oxidation and hurts performance. 10 bobbins/can.

Other 5' and 10' packaged 25 bobbins per nitrogen purged sleeve, all others 1 spool/sleeve.

SODER-WICK®
Desoldering Braid

## Product Selection Guide

| Product | Size | | Color | 10' 3.0m | 25' 7.5m |
|---|---|---|---|---|---|
| **Soder-Wick® Unfluxed**<br>Unfluxed desoldering braid which can be coated with any flux type | 2 | .060"/1.5mm | Yellow | 75-2-10 | 70-2-25 |
| | 3 | .080"/2.0mm | Green | 75-3-10 | 70-3-25 |
| | 4 | .110"/2.8mm | Blue | 75-4-10 | |

## Desoldering Braid Product Application Guide

*Wick shown actual size*

| Size | | Color | Application |
|---|---|---|---|
| 1 | .030"/0.8mm | White / Gray | SMD, Micro-Circuits |
| 2 | .060"/1.5mm | Yellow | Small Pads, SMDs |
| 3 | .080"/2.0mm | Green | Medium Pads |
| 4 | .110"/2.8mm | Blue | Large Pads |
| 5 | .145"/3.7mm | Brown | Terminals |
| 6 | .210"/5.3mm | Red | Large Lugs |

## Chem-Wik® Desoldering Braid

**Chem-Wik® Desoldering Braid** ensures fast and safe desoldering with ultra-pure, oxygen free copper braid that quickly and completely removes solder from circuit boards and components. Its fast wicking action protects components from harmful heat damage. PermaPak™ Barrier Packaging is nitrogen-purged, which ensures braid freshness and speed by sealing out harmful effects of the environment and protecting against oxidation.

Chem-Wik® Desoldering Braid meets or exceeds industry performance standards:

- MIL-F-14256F Type R
- NASA STD-8739.3 Soldered Electrical Connections
- ANSI/IPC J STD-004, Type ROL0
- DOD-STD-883E, Method 2022

## Product Selection Guide

| Product | Size | | Color | 5' 1.5m | 25' 7.5m | 50' 15.0m | 100' 30.5m | 500' 152.5m |
|---|---|---|---|---|---|---|---|---|
| **Chem-Wik® Rosin**<br>Fast wicking action with rosin flux coated desoldering braid | 1 | .030"/0.8mm | Gray | 2-5L | 2-25L | 2-50L | 2-100L | |
| | 2 | .050"/1.3mm | Yellow | 5-5L | 5-25L | 5-50L | 5-100L | 5-500L |
| | 3 | .075"/1.9mm | Green | 7-5L | 7-25L | 7-50L | 7-100L | 7-500L |
| | 4 | .100"/2.5mm | Blue | 10-5L | 10-25L | 10-50L | 10-100L | 10-500L |

PermaPak™ Barrier Packaging
5' packaged 25 bobbins/sleeve, all others 1 spool/sleeve.

***Offered in static dissipative (ESD-safe) bobbins:***

- Reduces the risk of damage associated with static electricity
- DOD Standard 1686C and MIL-HDBK-263B
- Mil-Std-2000A
- Mil-B-81705C Static Decay Rate Provision

**CircuitWorks®** comprehensive line of conveniently packaged and precision dispensing rework and repair products makes circuit board repair and prototyping faster, easier and more accurate. Advanced-formula materials packaged in unique delivery systems ensure superior performance and pinpoint accuracy. The full range of products meets all of the technicians needs for electronics rework and prototyping — repairing, cleaning, protecting, bonding, and restoring electrical conductivity to circuit boards and components.

All CircuitWorks® products are compliant with IPC-7711 Rework of Electronic Assemblies, and ANSI/J-STD-001.

## Thermal Compounds

*For fast, efficient heat transfer between circuit components and heat sinks.*

### CircuitWorks® Boron Nitride Heat Sink Grease

**Ultra-high efficiency, thermally conductive grease**

- Provides maximum thermal conductivity with superior dielectric properties
- Silicone free compound will not harden or dry out
- Electrically insulative; noncorrosive and nonflammable
- Thermal conductivity 1.85 W/m°K
- Thermally stable from -99.4ºF/-73ºC to 392ºF/200ºC
- Exceeds MIL-C-47113 for Thermal Conductivity

**CW7250** 3.4 g / 0.12 oz
**CW7250KG** 1 kg / 2.2 lb

### CircuitWorks® Silicone Free Heat Sink Grease

**Non-contaminating silicone free heat-sink grease**

- Silicone free compound will not harden or dry out
- Excellent thermal conductivity and dielectric properties
- Non-corrosive
- Thermal conductivity 0.71 W/m°K
- Thermally stable from -99ºF/-73ºC to 603ºF/317ºC
- Exceeds MIL-C-47113 for thermal conductivity

**CW7270** 8 g / 0.28 oz

### CircuitWorks® Heat Sink Grease

**Silicone compound for heat transfer away from electronics and electrical components**

- Excellent thermal and dielectric properties
- Will not dry out, harden, or melt
- Noncorrosive and nonflammable
- Thermal conductivity 0.63 W/m°K
- Thermally stable from -99ºF/-73ºC to 603ºF/317ºC

**CT40-5** 142 g / 5 oz

*CW7270*

*CW7250*

*CT40-5*

# Conductive Ink

*Conductive Ink Applications:*

- Repairs traces
- Links components
- Makes smooth jumpers
- Shields electronics

## CircuitWorks® Conductive Paint

**Paint kit for fine conductive traces or painting over large areas**

- Quickly creates highly conductive silver traces
- Superior electrical conductivity
- Dries in minutes at room temperature
- Includes 1 pick, 2 lint-free swabs and 2 brushes

**CW2205** 5 g / 0.18 oz

## CircuitWorks® Rubber Keypad Repair Kit

**Conveniently-sized kit for permanent repair of rubber keypads**

- Restores electrical conductivity to worn carbon contacts
- Forms a tough, flexible, wear-resistant surface
- Repairs over 50 rubber button contacts

**Applications:**

- Restores rubber and telephone keypads
- Restores flexible carbon contacts

| | | |
|---|---|---|
| **CW2605** | Adhesive | 3 g / 0.1 oz |
| | Curing Agent | 0.3 g / 0.01 oz |

## CircuitWorks® Conductive Pen

**Pen dispenser for drawing highly conductive silver traces, jumpers and shielding with precision and control**

- Quickly creates highly conductive silver traces
- Valved pen tip for easy applications
- Solderable at low temperatures
- Dries in minutes at room temperature
- Choice of Micro Tip for fine lines or Standard Tip for wider lines

| | | |
|---|---|---|
| **CW2200STP** | Standard Tip | 8.5 g / 0.3 oz |
| **CW2200MTP** | Micro Tip | 8.5 g / 0.3 oz |

*Standard Tip*

*Micro Tip*

*CW2200MYP*

## CircuitWorks® Nickel Conductive Pen

**Pen dispenser for economically drawing conductive traces, jumpers and shielding**

- Quickly creates conductive nickel traces on most surfaces
- Easy and economical to use
- Valved pen tip for easy applications
- Dries in minutes at room temperature

**CW2000** Standard Tip 8.5 g / 0.3 oz

## CircuitWorks® Flex Conductive Pen

**Micro-tip pen for drawing conductive traces on flexible and ITO surfaces**

- Quickly creates flexible conductive silver traces on flex circuitry
- Micro tip for precise applications
- Dries in minutes at room temperature
- Highly adherent silver-based polymer system

**CW2900** Micro Tip 8.5 g / 0.3 oz

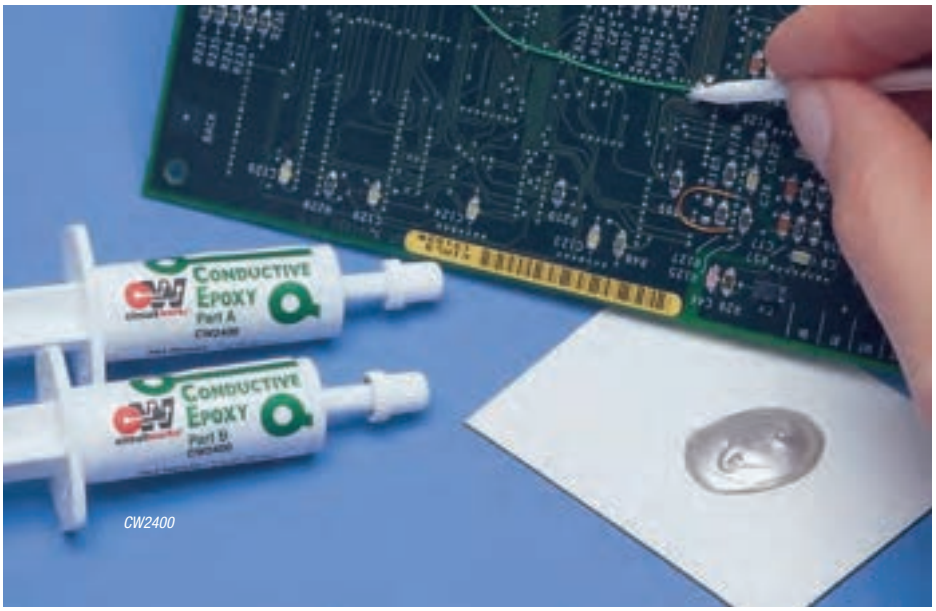
# Conductive Grease

## CircuitWorks® Silver Conductive Grease

**Grease for superior electrical and thermal conductivity, lubrication and protection**

- Fills connector gaps to maximize electrical and thermal conductivity
- Protects against moisture and corrosion
- Thermally stable from -70°F/-57°C to 485°F/252°C
- Conductive lubricant containing pure silver
- Controls static discharge
- Grounds circuits

| | |
|---|---|
| **CW7100** | 6.5 g / 0.23 oz |
| **CW7100KG** | 1 KG / 35.27 oz |



CW2400

## Conductive Epoxies

### *Conductive Epoxy Applications:*

- Repair traces and temperature sensitive circuits
- Make high-strength solderless conductive connections
- Die attachment
- Thermal dissipation
- Static discharge and grounding

CW2460

circuitworks

### CircuitWorks® Conductive Epoxy

**Epoxy for precision repairs and high-strength conductive bonding**

- Conductive silver epoxy provides excellent electrical conductivity
- High strength conductive bond with a five minute work time
- Repairs defective traces and creates jumpers on boards
- Quick solderless electronic connections

| | | |
|---|---|---|
| **CW2400** | Adhesive | 7 g / 0.25 oz |
| | Hardener | 7 g / 0.25 oz |

### CircuitWorks® 60 Minute Conductive Epoxy

**Epoxy system with extended pot life for high strength conductive bonds**

- Conductive silver epoxy provides excellent electrical conductivity
- Sixty minute work time provides a high strength conductive bond
- Extended pot life provides increased work time
- Repairs defective traces and creates jumpers on boards
- Quick solderless electronic connections

| | | |
|---|---|---|
| **CW2460** | Adhesive | 10 g / 0.35 oz |
| | Hardener | 10 g / 0.35 oz in jars |

## Protective Overcoats

CW3300G

### CircuitWorks® Overcoat Pen

**Pen dispenser for precise application of a tough protective acrylic conformal coating**

- Simple to use, single component system
- Hard, durable coating
- High dielectric strength helps prevent electrical discharge
- Dries quickly at room temperature
- Protects against moisture and abrasion damage
- Meets MIL-I-46058C and IPC-CC-830A

**Applications:**

- Insulates and protects conductive pen traces
- Repairs permanent solder mask
- Prevents shorting and arcing

| | | |
|---|---|---|
| **CW3300C** | Clear | 4.9 g / 0.17 oz |
| **CW3300G** | Green | 4.9 g / 0.17 oz |
| **CW3300B** | Blue | 4.9 g / 0.17 oz |
| **CW3300BLACK** | Black | 4.9 g / 0.17 oz |
| **CW3300WHITE** | White | 4.9 g / 0.17 oz |

### CircuitWorks® Epoxy Overcoat

**Tough, thermally stable, epoxy protective conformal coating**

- Provides a hard, durable, protective green coating
- Excellent dielectric properties; help prevent electrical discharge
- Protects against moisture and abrasion
- Ideal for pre-reflow solder resist repair
- Service temperature from -55ºF/-48ºC to 600ºF/315ºC
- Meets the requirements of IPC-7721, 2.4.1

**Applications:**

- Ideal for repairing permanent solder mask before reflow applications
- Protects circuits and prevents shorting and arcing

| | | |
|---|---|---|
| **CW2500** | Adhesive Syringe | 4 g / 0.14 oz |
| | Hardener Syringe | 3.4 g / 0.12 oz |

# Flux / Solder

## CircuitWorks® Flux Dispensing Pens

**Pen for applying flux with precision and control**

- Chisel tip marker provides exact delivery of flux to surface
- Easily removed with appropriate CircuitWorks® Flux Remover Pen

### No Clean Flux Dispensing Pen

- Applies a patented noncorrosive, halide free, no clean flux
- Flux meets Bellcore TR-N-NWT-000078 and IPC SF-818 for Surface Insulation Resistance
- Flux meets ANSI/IPC J-STD-004, Type ROL0

**CW8100** 9 g / 0.32 oz
**CW8100BLK50** Box of 50 pens, 9 g each

### Lead-Free Flux Dispensing Pen

- Applies a noncorrosive, halide free, no clean flux for high temperature, lead-free application
- Can also be used for tin/lead solders
- Flux meets Bellcore TR-N-NWT-000078 and IPC SF-818 for Surface Insulation Resistance
- Flux meets ANSI / IPC J-STD-004, Type ROL0
- Easily removed with Lead-Free Flux Remover Pen, or Flux-Off® Lead-Free Flux Remover

**CW8400** 9 g / 0.32 oz
**CW8400BLK50** Box of 50 pens, 9 g each

### Rosin Flux Dispensing Pen

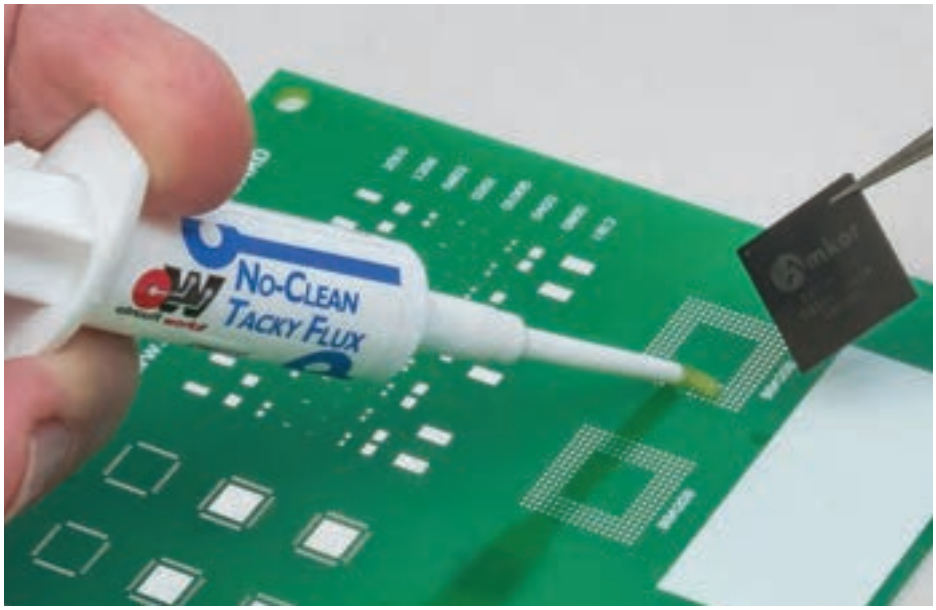
- Applies a noncorrosive, nonconductive Type R flux
- Flux meets MIL-F-14256 F Type R and ANSI/IPC J-STD-004, Type ROL0

**CW8200** 9 g / 0.32 oz
**CW8200BLK** Box of 50 pens, 9 g each

### Water Soluble Flux Dispensing Pen

- Applies a neutral pH organic water soluble flux for rapid soldering
- Flux meets ANSI/IPC J-STD-004, ORH1 Classification
- Easily removed with water or Flux-Off® Water Soluble (pg. 13)

**CW8300** 9 g / 0.32 oz
**CW8300BLK50** Box of 50 pens, 9 g each




## CircuitWorks® Tacky Flux

**Conveniently packaged flux gel formulated for easy SMT rework**

- Formulated for No-Clean applications
- Syringe applicator provides exact delivery of flux
- Long tack time, extended shelf life
- No refrigeration required
- Noncorrosive, halide and halogen free
- Meets IPC requirements for ROL0, No Clean
- Conforms to ISO 9454
- Meets Bellcore TR-NWT-000078 requirements
- Meets DIN EN 29454-1 1.1.3.C classification

### Lead-Free

**CW8700** 3.5 g / 0.12 oz

### No-Clean

**CW8500** 3.5 g / 0.12 oz

CW8700

CW8500

## CircuitWorks® Lead-Free Pocket Solder

**Lead free, high purity pocket sized solder dispenser for convenient rework and repair**

- SAC 305 for soldering lead-free applications
- 96.5% Tin (Sn), 3.0% Silver (Ag), 0.5% Copper (Cu)
- Type ROL0 flux per IPC J-STD-004
- Ensures even, reliable solder connections
- Cleans and wets heavily tarnished copper surfaces

**S200** 1.0 mm / 0.04" Diameter, 3.18 m / 125" Length

# Cleaning and Lubricating Pens

## CircuitWorks® Conformal Coating Remover Pen

**Pen for precise removal of silicone, acrylic and urethane coatings from PCBs**

- Spot cleans tight tolerance areas on circuit boards
- Marker dispenser provides controlled and exact application
- Evaporates quickly
- Provides low surface tension for superior wetting
- Low VOC content

**CW3500** 9 g / 0.32 oz

## CircuitWorks® Flux Remover Pen

**Pen for precise removal of flux from printed circuit boards**

- Completely removes flux in seconds
- Spot cleans tight tolerance areas on circuit boards
- Marker dispenser provides controlled spot cleaning
- Dries fast

**No Clean Flux Remover Pen**

**CW9100** 9 g / 0.32 oz

**Rosin Flux Remover Pen**

**CW9200** 8 g / 0.28 oz

**Lead-Free Flux Remover Pen**

**CW9400** 9 g / 0.32 oz

## CircuitWorks® Gold Guard™ Pen

**Pen for cleaning and lubricating gold and other noble metal contacts and connectors**

- Cleans and leaves protective polyphenyl ether lubricant in one step
- Extends life of noble metal contacts
- Chisel tip marker for exact delivery to the contact
- Safe on plastics

**CW7400** 8.5 g / 0.3 oz

## CircuitWorks® The Mighty Pen®

**Powerful universal cleaning pen**

- Outstanding cleaning ability
- Marker dispenser provides controlled and exact application
- Mild citrus aroma
- U.S. Patent 6,677,291 and 6,677,292, and foreign patents

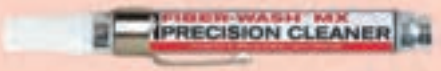
**Applications:**

- General purpose cleaning and refurbishing of equipment
- Removes ink stains, label adhesives, and difficult to remove soils

**CW3700** 11 g / 0.39 oz

## Fiber-Wash™ Fiber Optic Cleaning Pens

- Specifically formulated for cleaning all fiber optic connectors
- Removes handling soils, dust, oils and airborne contamination
- Cleans alone or in combination with the SqR™, p-QbE®, QbE®, CCT Cleaning Platforms
- Cleans and eliminates static
- Completely portable; controlled dispensing of cleaning solution




**Fiber-Wash™ MX Precision Cleaner Pen**

**Convenient pen with the extra-strength, plastic safe precision cleaner**

**FW2150** 9 g / 0.32 oz pen

**FW2150BLK** Box of 24 pens, 9g each

**Fiber-Wash™ AQ Precision Cleaner Pen**

**Nonflammable, aqueous fiber optic cleaner**

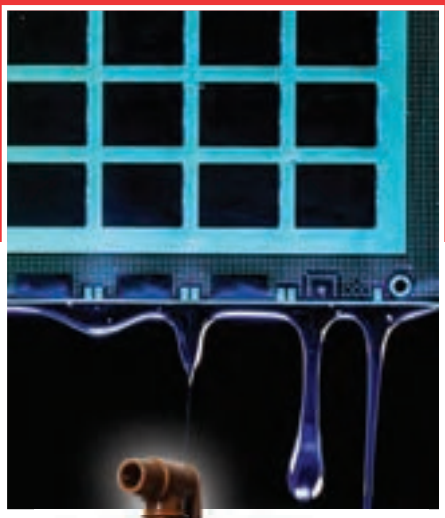
**FW2190** 5 g / 0.2 oz pen

**FW2190BLK** Box of 25 pens, 5 g each

**Fiber-Wash™ NF Precision Cleaner Pen**

**Nonflammable, fast drying fiber optic cleaner**

**FW2170** 10 g / 0.4 oz pen



**Konform® Conformal Coatings** are used to protect printed circuit boards, components and flex circuitry. These coatings provide excellent electrical insulation and withstand hot and cold operating environments, as well as heat generated by electronic circuitry. Formulated to protect components and circuits in the most demanding of environments, all Konform® conformal coatings contain a UV indicator for easy quality assurance (except Konform® LED). These tough, transparent coatings will not chip or crack, thereby providing excellent protection. All are convenient and ready to use.

CTSR-1

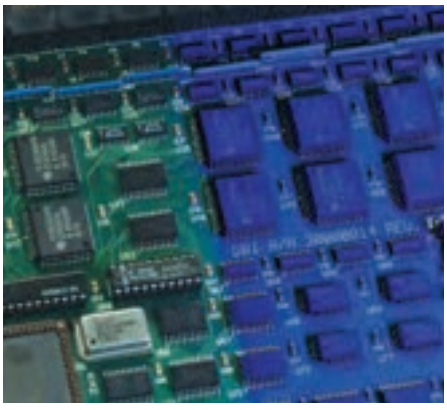
CTSR-12

## Konform® SR

**Silicone coating for maximum flexibility and protection from extreme temperatures and vibration damage**

- Silicone coating working temperature from -85ºF/-64ºC to 390ºF/200ºC
- High dielectric breakdown of 1100 volts/mil
- Easily removed with Electro-Wash® Two Step, Electro-Wash® NXO, or CircuitWorks® Conformal Coating Remover Pen
- Meets MIL-I-46058C, Type SR
- Compliant to IPC-CC-830A
- Engineered for applications where flexibility and high temperature resistance are required
- Contains UV Tracer for easy quality control
- UL recognized (standard viscosity only)
- Coverage (@1mil dry):
  Aerosol (1 can) 21 $ft^2$ / 2 $m^2$
  Liquid (1 gal.) 251 $ft^2$ / 23.3 $m^2$

| | |
|---|---|
| **CTSR-12** | 10 oz / 283 g aerosol |
| **CTSR-P** | 16 fl oz / 473 ml liquid |
| **CTSR-1** | 1 gal / 3.7 L liquid |
| **CTSR-5** | 5 gal / 19 L liquid |



*Konform® SR and Konform® AR conformal coatings contain a UV indicator for improved quality assurance.*

**Medium Viscosity**

- Coverage (@1mil dry): 479 $ft^2$ / 44.5 $m^2$

**CTSR-MV5** 5 gal / 19 L liquid

**High Viscosity**

- Coverage (@2mil dry): 719 $ft^2$

**CTSR-HV1** 1 gal / 3.7 L liquid

# The Ideal Replacement Silicone Conformal Coating Is Available Now!

# Konform SR-X

- Engineered for maximum flexibility and high temperature resistance
- Exceptional dirt, dust, and soil repellency — stays clean longer
- High gloss, superior transparency
- Superior corrosion protection

**Konform® SR-X** is a low-VOC silicone conformal coating that provides superior PCB protection from moisture, vibration, and abrasion. Because it is readily available and has very stable and reliable characteristics, it helps keep your assembly process running on schedule.

**AVOID LINE-DOWN** — Request a sample for qualification TODAY!

## Konform® SR-X Silicone Conformal Coating

**Low VOC coating for maximum flexibility and protection from extreme temperatures and vibration damage**

Konform® SR-X is a one-part, clear conformal coating with firm, moisture and abrasion resistant surface after cure.

Silicone conformal coatings are the most universal coating, offering protection for a wide variety of environments. This coating offers a resilient, mechanical stress reducing protection, while containing reduced VOC content. Utilizing a moisture/humidity-based curing mechanism, this coating cures quickly at ambient conditions.

This high-gloss transparent conformal coating provides ideal protection for both rigid and flexible printed circuit boards. Cured coatings are hydrolytically stable and retain their physical electrical properties after high temperature and humidity exposure. Konform SR-X will not stress delicate circuit components.

Konform SR-X is available in a standard viscosity, which is ideal for manual and selective spray systems, and high viscosity for dipping processes.

***Features & Benefits:***

- Engineered for applications where flexibility and high temperature resistance are required
- Exceptional dirt, dust, and soil repellency — surfaces remain clean longer
- Low VOC
- Low toxicity — HAPs free
- Silicone coating stable from -76°F/-60°C to 392°F/200°C
- High dielectric strength of 720 volts/mil
- Meets MIL-I-46058C and IPC-CC-830B
- UL 94 V-0 flammability rating
- Meets MIL-STD 810G & MS941-04 salt spray tests
- RoHS Compliant
- Contains a UV indicator for quality control inspection

**Konform SRX – Standard Viscosity**

| | |
|---|---|
| **CTSRX-P** | 1 pint / 0.47L liquid |
| **CTSRX-1** | 1 gallon / 3.8L liquid |
| **CTSRX-5** | 5 gallon / 18.9L liquid |
| **CTSRX-55** | 54 gallon / 204L liquid |

**Konform SRX950 – High Viscosity**

| | |
|---|---|
| **CTSRX950-P** | 1 pint / 0.47L liquid |
| **CTSRX950-1** | 1 gallon / 3.8L liquid |
| **CTSRX950-5** | 5 gallon / 18.9L liquid |
| **CTSRX950-55** | 54 gallon / 204L liquid |

## Product Selection Guide

| | Resistance | | | | | Underwriters Laboratories | | | Coating Characteristics | | | | | | | Cure Profile | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Temperature Resistance | Abrasion Resistance | Acid Resistance | Solvent Resistance | Humidity Resistance | Water Submersible Per UL | UL Recognized | UV Traceable | System | Viscosity (Liquid) | Flexibility | Solderability | Repairability | Dielectric Breakdown | Working Temperature | Tack Free Time | Full Cure Time |
| **Konform® SR** | 1 | 4 | 2 | 2 | 1 | ✓ | ✓ | ✓ | Solvent | 40 cps | 1 | 4 | 3 | 1100 | -85F to 390º (-65ºC to 200º) | 15 min. | 24 hrs. @RT |
| **Konform® SR Med. Viscosity** | 1 | 4 | 2 | 2 | 1 | ✓ | | ✓ | Solvent | 60 cps | 1 | 4 | 3 | 1100 | -85F to 390º (-65ºC to 200º) | 15 min. | 24 hrs. @R |
| **Konform® SR High Viscosity** | 1 | 4 | 2 | 2 | 1 | ✓ | | ✓ | Solvent | 120 cps | 1 | 4 | 3 | 1100 | -85F to 390º (-65ºC to 200º) | 15 min. | 24 hrs. @RT |
| **Konform® AR** | 2 | 1 | 1 | 3 | 1 | | ✓ | ✓ | Solvent | 70 cps | 4 | 3 | 4 | 8300 | -75F to 270º (-59ºC to 132º) | 30 min. | 24 hrs. @RT |
| **Konform® SRX** | 1 | 4 | 2 | 2 | 1 | | | ✓ | Solvent | 82cps | 1 | 4 | 3 | 720 | -76F to 392º (-60ºC to 200º) | 30 min. | 24 hrs. @RT |
| **Konform® SRX950** | 1 | 4 | 2 | 2 | 1 | | | ✓ | Solvent | 950 cps | 1 | 4 | 3 | 720 | -76F to 392º (-60ºC to 200º) | 30 min. | 24 hrs. @RT |
| **Konform® LED** | 1 | 4 | 2 | 2 | 1 | | | | Solvent | 65 cps | 1 | 4 | 3 | 1100 | -85F to 390º (-65ºC to 200º) | 15 min. | 24 hrs. @RT |

1 – Outstanding  2 – Excellent  3 – Good  4 – Fair  NA – Not Available

## Konform® AR

**Acrylic coating for effective insulation against high voltage arcing and shorts**

- Acrylic coating working temperature from -75ºF/-59ºC to 270ºF/132ºC
- High dielectric breakdown of 8300 volts/mil
- Meets MIL-I-46058C, Type AR
- Compliant to IPC-CC-830A
- Designed to provide effective insulation against electrical shorts and harsh environments
- Provides excellent acid resistance
- Easily repairable
- Contains UV Tracer for easy quality control
- UL recognized
- Coverage (@1mil dry):
  Aerosol (1 can) 20 $ft^2$ / 1.9 $m^2$
  Liquid (1 gal.) 254 $ft^2$ / 23.6 $m^2$

**CTAR-12** 11.5 oz / 326 g aerosol
**CTAR-P** 16 fl oz / 473 ml liquid
**CTAR-1** 1 gal / 3.7 L liquid

*CTAR-1* *CTAR-12*

## Konform® LED

**Silicone conformal coating designed for light emitting diode (LED) applications**

- Silicone coating transparent to visible wavelengths, will not block or change light intensity or wavelength
- Extends component life by protecting against adverse environments
- Good insulation properties help with circuit insulation characteristics, excellent flexibility minimizes thermal stress
- Resists moisture, salt, fungus, corrosive vapors, and severe environments
- Engineered to withstand heat generated by PCB as well as climatic temperature extremes
- Compliant with IPC-CC-830A, MIL-I-46058C (without UV) and RoHS
- Coverage (@1mil dry):
  Liquid (1 gal.) 251 $ft^2$ / 23.3 $m^2$

**CTLED-1** 1 gal / 3.7 L liquid
**CTLED-5** 5 gal / 18.5 L liquid

*Konform® LED is specially formulated to be optically clear.*

*CTLED-1* *CTLED-5*

**Chemask® Temporary Solder Masks** protect PC boards, plated thru-holes, contacts, pins, posts, terminals and gold fingers during reflow and wave soldering. They provide short-term high-temperature protection from molten solder to a minimum of 515ºF/268ºC. All products are nonflammable, non-contaminating and will not leave ionic or corrosive residue. Use as a protective mask during conformal coating process.

## Chemask® — Peelable

**Fast curing, peelable temporary solder masking agent**

- Dries tack-free in 15 minutes
- Easy to use — just peel off dried Chemask® masking agent
- Latex material is compatible with all flux systems and stable with cleaning solvents

**CM8** 8 fl oz / 236 ml liquid squeeze bottle
**CM1** 1 gal / 3.7 L liquid

## Chemask® NA — Non-Ammoniated

**High temperature, peelable, temporary mask safe for use on sensitive metals**

- Will not affect gold, copper, nickel, silver and OSP finishes
- For lead-free or tin/lead processes
- Stable to 550ºF / 288ºC
- Phthalate-free, low toxicity and environmentally safe
- Compatible with rosin, no-clean and water soluble flux types
- Dries tack free in 15 minutes
- Can be placed directly into pre-heat oven without waiting
- Removes easily and leaves no residue
- Non-contaminating, non-staining and noncorrosive

**CNA8** 8 fl oz / 236 ml liquid squeeze bottle

## Chemask® LF — Lead-Free

**High temperature, peelable temporary mask ideal for lead-free applications**

- Formulated for use with lead-free applications
- Can also be used with tin/lead solders
- Usable within five minutes of application with preheat cycles
- Provides short-term high temperature protection up to 550ºF / 288ºC

**CLF8** 8 fl oz / 236 ml liquid squeeze bottle

## Product Selection Guide

| | Product Characteristics | | | | | | Application Methods | | | Removal Methods | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Safe for Sensitive Metal Surfaces | Tack Free Time @ Room Temperature | Full Cure Time @ Room Temperature | Preheat Activated | Flux Resistance | Solvent Resistance | Automated Dispenser | Stencils | Screens | Peelable | Water Washable Open Loop/Closed Loop |
| **Chemask® Peelable** | NR | 15 min. | 30 min. | NA | All types | All types | Yes | No | No | Yes | No |
| **Chemask® NA Non-Ammoniated** | Yes | 15 min. | 30 min. | Yes; can be placed directly into preheat | All types | All types | Yes | Yes | Yes | Yes | No |
| **Chemask® LF Lead-Free** | NR | 15 min. | 30 min. | Yes; 4 min. full cure | All types | All types | No | No | No | Yes | No |
| **Chemask® HV High Viscosity** | Yes | 15 min. | 30 min. | Yes; 4 min. full cure | All types | All types | No | No | No | Yes | No |
| **Chemask® WF Water Filterable** | No | 30 min. | 60 min. | NA | Not compatible with water-based flux | Remove with water and water-based cleaners | Yes | Yes | Yes | No | Yes |

NA – Not Available  NR – Not Recommended  *Open Loop System Only

## Chemask® WF — Water Filterable

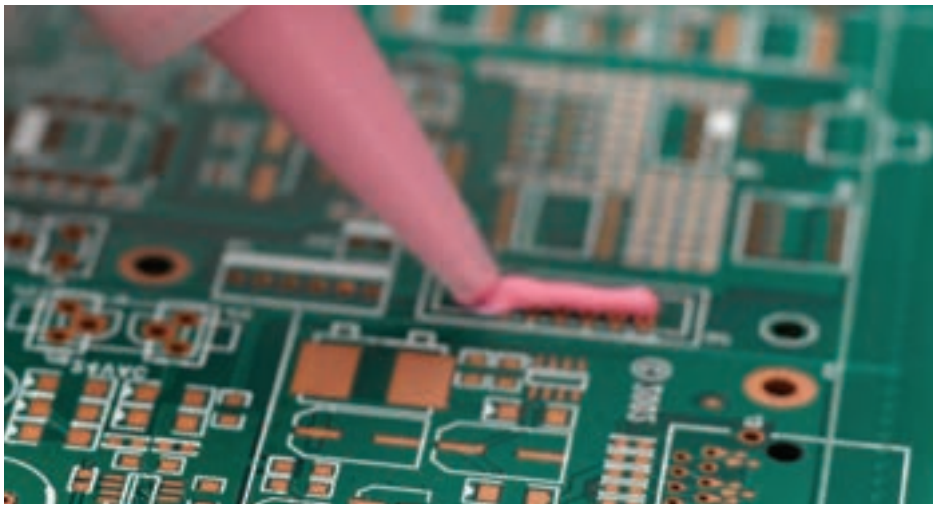
**Low-foaming, water filterable temporary solder masking agent**

- Easily removed in water cleaning cycles
- Does not coat filtration equipment
- Noncorrosive; safe for sensitive contacts
- Removed with inexpensive filters, increasing the life span of activated carbon/resin beds
- US Patent Number 6,207,265

**Applications:**

- Ideal for use with closed loop cleaning systems
- Increases productivity by reducing cleaning system maintenance
- Short-term high-temperature protection from molten solder to 515ºF / 268ºC

**CWF8** 8 fl oz / 236 ml liquid squeeze bottle



## Chemask® HV — High Viscosity

**High viscosity, peelable temporary solder masking agent**

- Usable within five minutes of application with preheat cycle
- More controlled application
- Thicker coating does not seep through thru-holes
- Latex material is compatible with all flux systems and stable with cleaning solvents

**CHV8** 8 fl oz / 236 ml liquid squeeze bottle

*CWF8* *CHV8*

## IPA Presaturated Wipes

**General purpose presaturated wipe in a convenient dispenser**

- Ultra pure mixture of IPA and deionized water
- Nonwoven, spunlaced polyester material
- Non-scratching and strong — will not tear or lint
- Ideal for cleaning of semi-automatic printer stencils and touch-up cleaning of automatic printer stencils
- IPA100B wipes are lint free and precut — excellent for cleaning fine pitch stencils

**SIP100P** 100 presaturated wipes in pull-up tub 70% IPA and 30% deionized water

**SIP100R** 100 ct refill roll

**SIP125P** 125 presaturated wipes in pull-up tub 70% IPA and 30% deionized water

**SIP125R** 125 ct refill roll

**SIP91P** 100 presaturated wipes in pull-up tub 91% IPA and 9% deionized water

**IPA100B** 100 c-fold presaturated wipes 70% IPA and 30% deionized water

## Chempad™ Presaturated Wipe

**General purpose, presaturated lint-free cleaning wipe**

- Contains ultra pure blend of 91% IPA/9% deionized water
- Highly saturated
- Thick, non-abrasive, wiping pad
- Quickly removes dust, oils and contaminants

**CP400** 50 single pack presaturated wipes

## Electro-Wash® MX Presaturated Wipe

**Extra-strength plastic safe universal cleaner with moderate evaporation time**

- Cleans all soil types — organic and ionic
- Moderate evaporation rate increases cleaning power
- Leaves no residue
- Presaturated wipe great for toolbox or travel

**Applications:**

- Ideal for cleaning fiber optics and fiber optic connectors, cables, hard-line coax cable, cable splices, PC boards, motors, tools and transformers, flooding compounds, control systems, screens and stencils

**CP421** 25 single pack presaturated wipes

*Also available in an aerosol — ES1621. See page 6.*

## Screen Prep™ Presaturated Wipe

**Convenient cleaning and static control for monitors**

- Cleans and provides a static dissipative treatment
- Prevents airborne recontamination for up to seven days
- Safely removes dust, dirt, oil and nicotine
- Controls static-generated contamination
- Wet pad cleans and applies static protection
- Dry wiper polishes screen optically clear

**CSP20** 25 twin packs
#1 presaturated pad
#2 polishing wiper

## Optic Prep™ Presaturated Wipe

**Highest quality premoistened lens-grade tissue for cleaning optical surfaces**

- Safely cleans and polishes optical surfaces, lenses, photographic equipment, fiber optic connectors and instruments
- Compatible with most plastics, glass and metals
- Mild cleaning solution, nonabrasive wipe
- Quickly removes dust, oils and contaminants connectors and instruments

**CP410** 50 single pack presaturated pads

## Chemswab™ Presaturated Swab

**Easy to use swab presaturated with alcohol**

- Urethane foam swab (Foamtips™ #120) presaturated with ultra-pure IPA
- Evaporates quickly with no residue or contamination
- Nonabrasive
- Ideal for field service kits

**CS25** 25 presaturated swabs

CS25

CP410

# Dry Wipes

- **High absorbency**
- **Contamination control**
- **High-purity**
- **Little or no linting**

**Chemtronics® Dry Wipes** are engineered and manufactured clean. They are designed for controlled environments, light industrial, benchtop, laboratory and high absorbency applications.

They are ideal for use with strong solvents and the full range of engineered Chemtronics® cleaners; Electro-Wash® cleaner degreasers, Static Free™ static control products and Flux-Off® flux removers.

## Controlwipes™

**Solvent resistant highly absorbent wipe**

- Nonwoven, spunlaced polyester cellulose fabric
- General purpose lint-free wipe
- Strong, will not tear, shred, unravel or lint
- High absorbency and liquid retention
- Will not abrade surfaces
- Resistant to most solvents and dilute acids
- For applications requiring contamination control

**Applications:**

- Removing contamination from screens and optical glass surfaces
- Cleaning and absorbing solvents from semi-critical work surfaces

**C910** 150 wipes 9" x 9" / 23 cm x 23 cm

## Twillwipes™

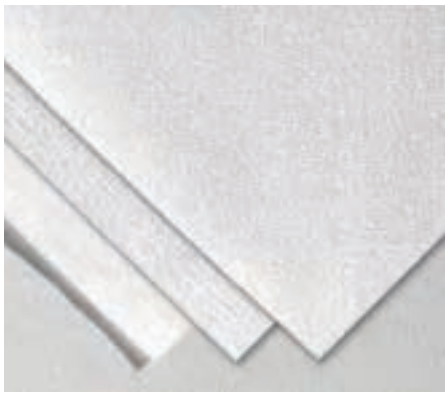
**Highly absorbent wipe for abrasion-free cleaning and drying of sensitive surfaces, components and equipment**

- Strong, textured 100% cotton
- Minimal linting
- Cleanroom Compatible Class 1000 / ISO Class 4
- Resistant to caustic solvents and temperatures up to 302ºF/150ºC

**Applications:**

- Cleaning applications involving high temperature
- Ideal for use with caustic solutions

**C900** 150 wipes 9" x 9" / 23 cm x 23 cm



## Opticwipes™

**Soft laboratory-grade cellulose tissue designed for use on optical and other sensitive surfaces**

- 100% cellulose
- Highly absorbent; high wet strength
- Noncontaminating
- Solvent resistant
- Low in soluble extractable contamination and particle generation

**Applications:**

- Cleaning optical surfaces, photo processing, lab equipment and other precision instrumentation
- Ideal for cleaning optical lenses

**C920** 500 wipes 9" x 9" / 23 cm x 23 cm

**Chemtronics® Swabs and Applicators** are engineered for use in a variety of environments and applications. They are ideal for use with our cleaner degreasers, head cleaners, flux removers and other solvents for fast, precision cleaning. From the innovative no-lint Chamois Tips™ Swab to the general purpose Cottontips™ Swab, Chemtronics® has the right swab or applicator for your job.

RoHS WEEE Compliant

## Foamtips™

**Highly absorbent precision cleaning swab with a wide variety of head sizes and shapes**

- Precision cleaning swabs with 100 ppi polyurethane open cell foam head
- Purest medical grade foam
- Foamtips™ Pro swab (CFP50) has a blue scrubber end and a soft absorbent end
- Available in a variety of head sizes and shapes with various handle lengths

| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| **Foamtips™ Pro CFP50** | 50 swabs | 6.75"<br>17.1 cm | 0.20" x 0.13"<br>4.8 mm x 3.3 mm | **white head:**<br>0.75"<br>19.1 mm<br>**blue head:**<br>0.69"<br>17.5 mm | **white head:**<br>0.44"<br>11.1 mm<br>**blue head:**<br>0.28"<br>17.1 mm | polypropylene | **white side:**<br>100 ppi open cell foam<br><br>**blue side:**<br>75 ppi closed cell |

*Scrubber Side* *Soft Side*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Foamtips™ #100 CF50** | 50 swabs | 6.10"<br>15.5 cm | 0.06" x 0.06"<br>1.5 mm x 1.5 mm | 0.88"<br>22.4 mm | 0.38"<br>9.7mm | wood | 100 ppi open cell foam over cotton bud |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Foamtips™ #110 CF1050** | 50 swabs | 5.00"<br>12.7 cm | 0.28" x 0.13"<br>7.1 mm x 3.3 mm | 1.00"<br>25.4mm | 0.82"<br>20.8 mm | polypropylene | 100 ppi open cell foam |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Foamtips™ #120 CF2050** | 50 swabs | 5.12"<br>13.0 cm | 0.19" x 0.13"<br>4.8 mm x 3.3 mm | 1.00"<br>25.4 mm | 0.46"<br>11.7 mm | polypropylene | 100 ppi open cell foam |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Foamtips™ #130 CF3050** | 50 swabs | 6.00"<br>15.2 cm | 0.13" x 0.13"<br>3.3 mm x 3.3 mm | 0.75"<br>19.1mm | 0.25"<br>6.4 mm | polypropylene | 100 ppi open cell foam |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Foamtips™ #140 CF4050** | 50 swabs | 2.87"<br>7.3 cm | 0.10" x 0.10"<br>2.5 mm x 2.5 mm | 0.50"<br>12.7 mm | 0.19"<br>4.8 mm | polypropylene | 100 ppi open cell foam |

## Flextips™ & Super Flextips™

**Ideal flexible heads for cleaning optics and small confined areas**

- Nonabrasive
- Made without adhesives or glue
- Open cell foam on Flextips for high absorbency, soil capture and gentle cleaning
- Closed cell foam on Super Flextips for increased toughness and abrasion resistance

| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| Flextips™ CX50 | 50 swabs | 4.45" 11.3 cm | 0.16" x 0.16" 4.1 mm x 4.1 mm | 0.81" 20.6 mm | 0.25" 6.4 mm | nylon/polypropylene | 100 ppi open cell foam |
| Super Flextips™ SX50 | 50 swabs | 4.45" 11.3 cm | 0.16" x 0.16" 4.1 mm x 4.1 mm | 0.81" 20.6 mm | 0.25" 6.4 mm | nylon/polypropylene | 100 ppi closed cell foam |
| Flextips™ Mini CXM50 | 50 swabs | 4.13" 10.5 cm | 0.16" x 0.16" 4.1 mm x 4.1 mm | 0.53" 13.5 mm | 0.19" 4.8 mm | nylon/polypropylene | 100 ppi open cell foam |
| Super Flextips™ Mini SXM50 | 50 swabs | 4.13" 10.5 cm | 0.16" x 0.16" 4.1 mm x 4.1 mm | 0.53" 13.5 mm | 0.19" 4.8 mm | nylon/polypropylene | 100 ppi closed cell foam |

## Chamois Tips™

**Ideal swab for cleaning magnetic and optical, audio and video heads**

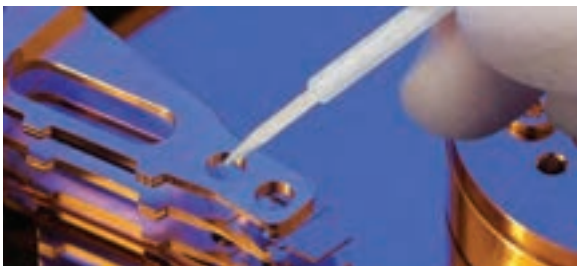
- Synthetic chamois cloth head
- Material is free of oils and residues
- Flexible handle bends to clean hard-to-reach areas
- Bonded without adhesives
- Seamless construction
- Effectively cleans excess ink from ink jet cartridges
- Abrasion resistant
- Non-snagging

| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| CC50 | 50 swabs | 3.25" 8.3 cm | 0.38" x 0.07" 9.7 mm x 1.8 mm | 0.88" 22.4 mm | 0.38" 9.7 mm | ABS (acrylonitrile-butadiene-styrene) | synthetic chamois cloth |

## Microtips™

**Precision applicator for pinpoint solvent, adhesive and lubricant application**

- Porous polyvinylidene fluoride-tipped precision applicator and cleaning tool
- Low extractables and particulate levels
- High chemical resistance – compatible with most solvents
- 1.9 mm tapered tip
- Excellent choice for depositing solvents, adhesives and coatings
- Effective as a stylus or pick



| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| CM502 | 50 swabs | 6.7" 17.0 cm | 0.13" x 0.13" 3.3 mm x 3.3 mm | 0.62" 15.7 mm | 0.08" 1.93 mm | polypropylene | polyvinylidene flouride |

## Cottontips™ & Cottontips™ Low Lint

**Economical swabs designed for general cleaning applications**

- 100% pure pharmaceutical grade bleached white cotton head
- Soft and highly absorbent
- Compatible with most solvents
- Available with single or double head
- Rigid wooden handle

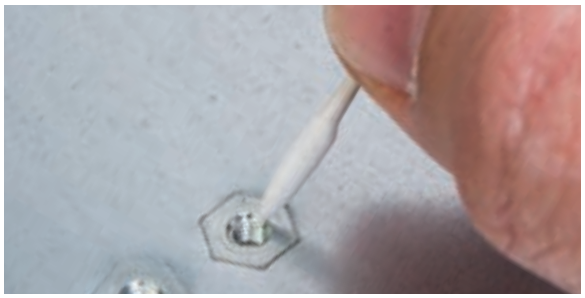
***Cottontips™ Low Lint:***

- Special low lint cotton fibers used for critical, low particle applications

| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| **Cottontips™ Single-Head** | | | | | | | |
| **CT100** | 100 swabs | 6.00"<br>15.2 cm | 0.08" x 0.08"<br>2.0 mm x 2.0 mm | 0.63"<br>16 mm | 0.19"<br>4.8 mm | wood | cotton |
| **Cottontips™ Double-Head** | | | | | | | |
| **CT200** | 100 swabs | 6.00"<br>15.2 cm | 0.08" x 0.08"<br>2.0 mm x 2.0 mm | 0.63"<br>16 mm | 0.19"<br>4.8 mm | wood | cotton |
| **CT2000** | 1000 swabs | 6.00"<br>15.2 cm | 0.08" x 0.08"<br>2.0 mm x 2.0 mm | 0.63"<br>16 mm | 0.19"<br>4.8 mm | wood | cotton |
| **Cottontips™ Low Lint** | | | | | | | |
| **CT5000** | 1000 swabs | 6.00"<br>15.2 cm | 0.08" x 0.08"<br>2.0 mm x 2.0 mm | 0.63"<br>16 mm | 0.19"<br>4.8 mm | wood | cotton |

## Cottontips™ MicroPoint

**Low particulate, pointed cotton swab, designed for precision applications**



- Tightly wrapped head construction
- Small size for delicate precision cleaning
- Extremely Low linting
- High absorbency capacity and rate
- Good solvent compatibility
- Sharp point
- Non-static generating

| Product | Pkg Count | Swab Length | Handle Width | Head Length | Head Width | Handle Material | Head Material |
|---|---|---|---|---|---|---|---|
| **Cottontips™ MicroPoint** | | | | | | | |
| **CCT2425** | 25 swabs | 3.0"<br>7.6 cm | 0.06" x 0.06"<br>1.5 mm x 1.5 mm | 0.47"<br>11.9 mm | 0.12"<br>3.0 mm | Paper composite | cotton |

# Product Specifications/Call Outs

| U.S. Government National Stock Numbers | Part # | Product Name | Page |
|---|---|---|---|
| 0793-00-103-94802 | ES1668 | Plast-N-Glas® | 16 |
| 3439-00-009-2334 | 7-5L | Chem-Wik® Rosin | 18 |
| 3439-01-009-6448 | 80-5-5 | Soder-Wick® | 17 |
| 3439-01-198-9716 | 80-4-10 | Soder-Wick® | 17 |
| 3439-01-324-8208 | 80-2-5 | Soder-Wick® | 17 |
| 3439-01-371-1588 | 10-5L | Chem-Wik® | 18 |
| 416850-01-514-1372 | CW3500 | CircuitWorks® Conformal Coating Remover Pen | 23 |
| 4820-01-314-3601 | ES710V | Chrome Trigger Valve | 14 |
| 5836-01-453-8942 | CC50 | Chamois Tips™ | 32 |
| 5836-01-454-0401 | ES605L | IPA | 12 |
| 5836-01-454-0402 | CP400 | Chempad™ | 29 |
| 5970-01-417-4152 | CTSR-12 | Konform® SR | 24 |
| 5970-01-417-4154 | CTSR1 | Konform® SR | 24 |
| 5970-01-417-4156 | CTAR1 | Konform® AR | 26 |
| 5970-01-417-4158 | CTAR-12 | Konform® AR | 26 |
| 6616-00-077-3218 | CF4050 | Foamtips™ #140 | 31 |
| 6830-01-381-2675 | ES1020K | Ultrajet® System | 14 |
| 6830-01-388-6924 | ES1020R | Ultrajet® Refill | 14 |
| 6850-00-142-40716 | ES1551 | Freeze-It® Antistat | 15 |
| 6850-00-146-38046 | ES1217 | Duster | 14 |
| 6850-00-602-2347 | ES1631 | Flux-Off® Heavy Duty | 11 |
| 6850-01-224-9211 | ES2400 | Tun-O-Wash® | 8 |
| 6850-01-3064 | C920 | Opticwipes™ | 30 |
| 6850-01-393-9054 | ES1210 | Electro-Wash® PX | 5 |
| 6850-01-412-0040 | ES1020 | Ultrajet® | 13 |
| 6850-01-418-0499 | ES1035 | Flux-Off® Rosin | 10 |
| 6850-01-436-4573 | ES7300 | Pow-R-Wash™ CZ | 8 |
| 6850-01-436-4578 | ES7200 | Flux-Off® CZ | 10 |
| 6850-01-436-4584 | ES7100 | Electro-Wash® CZ | 5 |
| 6850-01-456-4173 | ES835B | Flux-Off® Rosin | 10 |
| 6850-01-463-8043 | ES1017 | Duster | 14 |
| 6850-01-463-8046 | ES1217 | Duster | 14 |
| 6850-01-475-0987 | CW8100 | No Clean Flux Dispensing Pen | 22 |
| 6850-01-484-3064 | CP410 | Optic Prep™ | 29 |
| 6850-01-506-5662 | CW2200MTP | Conductive Pen | 20 |
| 6850-01-560-5804 | ES1051 | Freez-It® Antistat | 15 |
| 7045-01-535-0276 | CM502 | Microtips™ | 32 |
| 7045-01-548-4966 | CT5000 | Cottontips™ Low Lint | 33 |
| 7930-01-467-3289 | CFP50 | Foamtips™ Pro | 31 |
| 7930-01-559-5328 | CP421 | Electro-Wash® MX Presaturated Wipe | 5, 29 |
| 8030-01-511-6308 | CW3300C | CircuitWorks® Overcoat Pen | 21 |
| 8510-01-358-8836 | C805 | Static Free™ Hand Guard™ | 16 |
| 9150-01-508-9999 | CW7100 | Conductice Grease | 20 |
| 9390-01-552-1552 | 80-3-5 | Soder-Wick® | 17 |

| Part Number | Product Name | Page | Standard / Specification |
|---|---|---|---|
| ES1020, ES1020R ES1620, ES1015 | All Ultrajet®, and Ultrajet® 70 | 13 | Fed Spec A-A-58060, ARI Standard 700, App. C |
| CM8, CM1 | Chemask® | 27 | MIL-STD-2000A, Para.5.3.18 |
| CHV8 | Chemask® HV High Viscosity | 28 | MIL-STD-2000A, Para. 5.3.1835,36 |
| CLF8 | Chemask® LF | 27 | MIL-STD-2000A, Para. 5.3.18 |
| CNA8 | Chemask® NA | 27 | MIL-STD-2000A, Para. 5.3.18 |
| CWF8 | Chemask® WF | 28 | MIL-STD-2000A, Para.5.3.18 |
| All Chem-Wik® | Chem-Wik® | 18 | MIL-F-14256F, Type R, ANSI/IPC J STD-004, Type ROL0 NASA-STD-8739.3 |
| All Chem-Wik® | Chem-Wik® | 18 | MIL-STD-1686C, MIL-HDBK-263B |
| All CircuitWorks® | CircuitWorks® | 19-23 | ANSI/IPC J STD-001, IPC-7711 |
| CW2500 | CircuitWorks® Epoxy Overcoat | 21 | IPC-7721,2.4.1 |
| CT40-5 | CircuitWorks® Heat Sink Grease | 19 | MIL-DTL-47113D |
| CW8400 | CircuitWorks® Lead-Free Flux Dispensing Pen | 22 | ANSI / IPC J-STD-004, Type ROL0; Bellcore TR-N-NWT-000078 and IPC SF-818 for Surface Insulation Resistance |
| CW8100 | CircuitWorks® No Clean Flux Dispensing Pen | 22 | ANSI/IPC SF-818, ANSI/IPC J STD-004, Type ROL0 Bellcore TR-NWT-000078 |
| CW3300C, CW3300G | CircuitWorks® Overcoat Pen | 21 | IPC-CC-830A, MIL-I-46058C, Type AR |
| CW8200 | CircuitWorks® Rosin Flux Dispensing Pen | 22 | MIL-F-14256F, Type R, ANSI/IPC J STD-004, Type ROL0 |
| CW8500 | CircuitWorks® Tacky Flux | 22 | ISO 9454, Bellcore TR-NWT-000078, DIN EN 29454-1 1.1.3.C classification |
| CW8300 | CircuitWorks® Water Soluble Flux Dispensing Pen | 22 | ANSI/IPC J-STD-004, ORH1 |
| ES1017, ES1217, ES1617 | Duster | 14 | Fed Spec A-A-58060, ARI Standard 700, App. C |
| ES7100 | Electro-Wash® CZ | 5 | MIL-PRF-29608A (AS) Class C approved |
| CTAR-12, CTAR1 | Konform® AR | 26 | MIL-I-46058C Type AR, IPC-CC-830A, UL Recognized |
| CTSR-12, CTSR1 | Konform® SR | 24 | MIL-I-46058C Type SR, IPC-CC-830A, UL Recognized |
| CTSR-HV1 | Konform® SR High Viscosity | 24 | MIL-I-46058C Type SR, IPC-CC-830A |
| ES7300 | Pow-R-Wash™ CZ | 8 | MIL-PRF-29608A (AS) Class C approv |
| All Soder-Wick® | Soder-Wick® | 17-18 | MIL-F-14256F, Type R, ANSI/IPC J STD-004, Type ROL0 DOD-STD-883E, Method 2022, NASA-STD-8739.3 |
| 60 Series | Soder-Wick® No Clean | 17 | ANSI/IPC J STD-004, Type ROL0, DOD-STD-883E, Method 2022 NASA-STD-8739.3, Bellcore TR-NWT-000078, ANSI/IPC SF-818 Singapore Institute of Standards and Industrial Research (SISIR) for Solderability |
| All Soder-Wick® | Soder-Wick® | 17-18 | MIL-STD-1686C, MIL-HDBK-263B, MIL-B-81705C, MIL-STD-2000A |
| Static Dissipative (ESD-Safe) | | 17-18 | MIL-B-81705C, MIL-STD-2000A |
| C805 | Static Free™ Hand Guard™ | 16 | IPC-ESD-20-20, MIL-STD-1686C, MIL-HDBK-263B |
| ES1664T | Static Free™ Mat and Benchtop Reconditioner | 16 | IPC-ESD-20-20, MIL-STD-1686C, MIL-HDBK-263B |

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