



# PRODUCT CATALOG



# Why MG Chemicals?

At MG Chemicals, we realize that our number one asset is you, our customer.

## **ISO Quality Standards.**

Since 1955, M.G. Chemicals has provided the North American electronics industry with a full line of high performance chemicals and accessories. The M.G. Chemicals manufacturing facility operates under the ISO 9001 Quality System Standard. All products undergo M.G. Chemicals' design process including the testing and analysis of each product to maximize performance, user safety, environmental safeguards and market desirability.

## **MSDS Access.**

M.G. Chemicals lists complete handling, environmental, safety and shipping information for each product on Material Safety Data Sheets. MSDSs are available at [www.mgchemicals.com/msds](http://www.mgchemicals.com/msds) or by fax.

## **Technical Support.**

We will endeavor to provide our customers with the requested information they need with prompt and courteous attention. We offer help on our website [www.mgchemicals.com](http://www.mgchemicals.com) and with our 1-800 Tech Support hotline.

## **Product Shipping.**

M.G. Chemicals products are offered in IATA tested and United Nations approved high performance shipping cartons, to easily transport all of our products anywhere in the world.

## **Product Availability.**

M.G. Chemicals products are readily available through electronic distribution in North America and internationally. Please contact M.G. Chemicals for the closest stocking distributor in your area.

## **You.**

Customer care is what separates M.G. Chemicals from the pack. Our commitment to all of these principles focus on getting you the quality product and support you deserve.

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and Circuit  
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APPENDICES

# Dusters / Circuit Coolers

## Super Duster 134A

- ▶ 100% HFC 134A gas
- ▶ Ozone safe
- ▶ Non-flammable
- ▶ Non-conductive
- ▶ Zero residue
- ▶ Variable trigger valve



402A

- ▶ NON-FLAMMABLE
- ▶ NON-CONDUCTIVE
- ▶ MOISTURE FREE GAS
- ▶ ZERO RESIDUE
- ▶ NON-VOC

Removes microscopic dust, lint and foreign particles. Cleans computers and keyboards, photographic and audio-video equipment, coin counters, printers, timing devices, cash machines, optical equipment, fax machines and other electro mechanical instruments. High rate of flow delivery system for increased performance.

### Available Sizes

| 402A | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 402A-140G   | 140g (5 oz)  | Aerosol |
|      | 402A-285G   | 285g (10 oz) | Aerosol |
|      | 402A-450G   | 450g (16 oz) | Aerosol |

## Trigger Valve

Allows user precision control and greater comfort.



402-T

For use with Super Duster 134 Refill canisters (402AR). Allows user precision control and greater comfort. This high quality threaded chrome valve is for use with Cat# 402AR Super Duster Refill aerosol cans, and can be used over and over. It simply screws onto the top of the can, and can be easily removed at any time later without damage to the valve or the can, even if the can's contents have not been depleted.

### Available Sizes

| 402T | Catalog No. | Size         | Format               |
|------|-------------|--------------|----------------------|
|      | 402T*       | Fits 402AR   | Chrome Trigger Valve |
|      | 402AR       | 285g (10 oz) | Aerosol              |

\*Not available for USA distributors

This high quality threaded chrome valve is for use with Cat# 402AR Super Duster Refill aerosol cans, and can be used over and over.

## Super Cold 134A

Chills to -51°C (-60°F)

Used to locate thermal intermittent electronic components, PCB cracks, cold solder joints, and oxidized junctions. Freezes gum and adhesives for easy removal. Protects heat-sensitive components during soldering. Chills to -51°C (-60°F).



403A

- ▶ NON-FLAMMABLE
- ▶ NON-CONDUCTIVE
- ▶ MOISTURE FREE GAS
- ▶ ZERO RESIDUE
- ▶ NON-VOC

- ▶ 100% HFC 134A gas
- ▶ Ozone safe
- ▶ Non-flammable
- ▶ Non-conductive
- ▶ Zero residue
- ▶ Variable valve allows greater user control

### Available Sizes

| 403A | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 403A-400G   | 400g (14 oz) | aerosol |
|      | 403A-285G   | 285g(10 oz)  | aerosol |



**CLEANER DEGREASERS**

**4**



**CONTACT CLEANERS**

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**FLUX + FLUX REMOVERS**

**10**



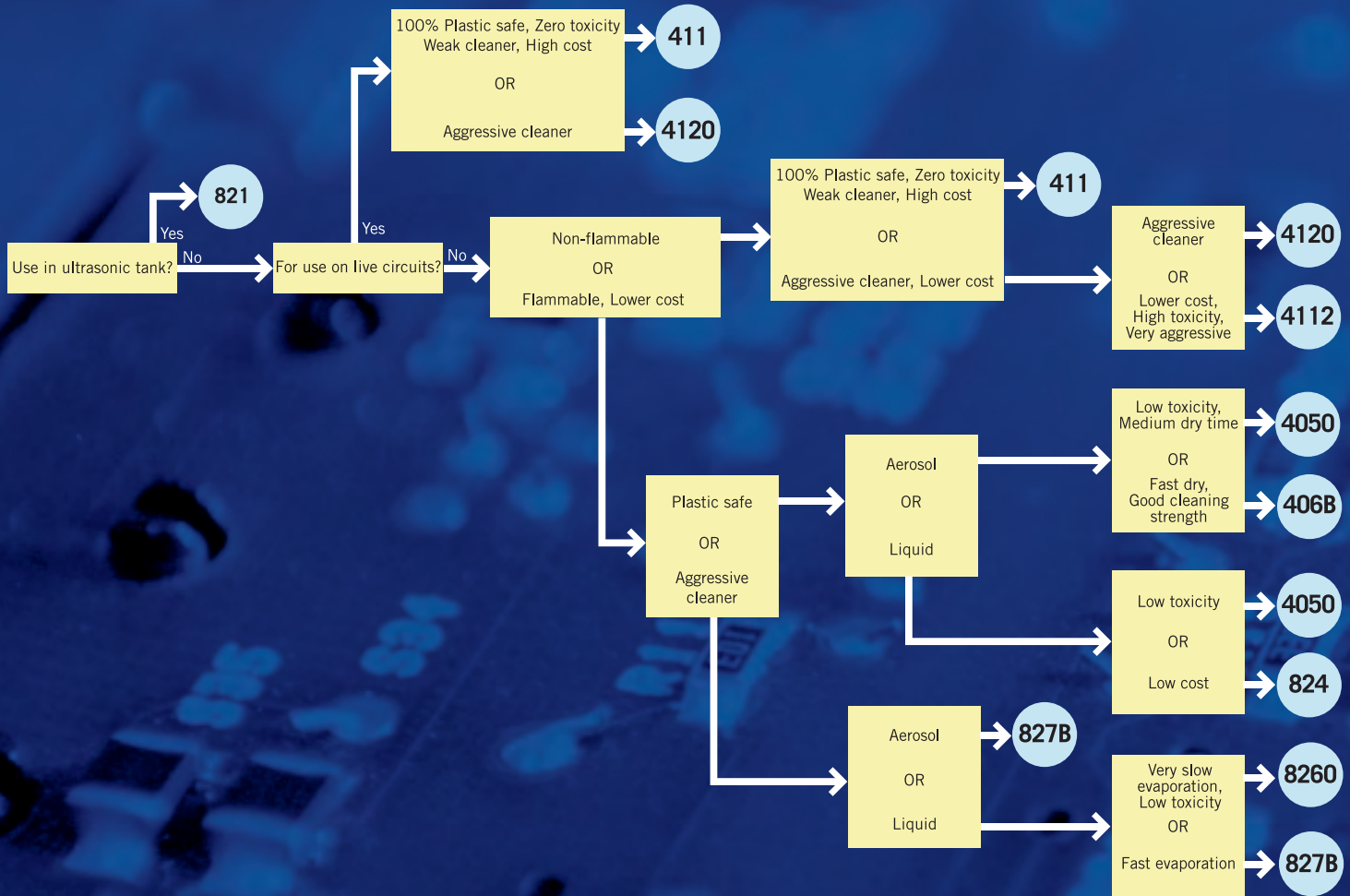
**SPECIALTY CLEANERS / CHEMICALS**

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# Cleaner Degreaser Selection Chart

► Use this flowchart to determine the cleaner degreaser best suited to your application.



## Isopropyl Alcohol

824

Use when a cost effective general purpose cleaner is required.

- ▶ SAFE ON PLASTICS
- ▶ LOW TOXICITY
- ▶ COST EFFECTIVE

99.953% Pure anhydrous alcohol (824, 824W). A great general-purpose cleaner degreaser. Also effective as a flux remover. Perfect for use on fiber optics. Flammable.

### Available Sizes

|      | Catalog No. | Size                        | Format                 |
|------|-------------|-----------------------------|------------------------|
| 824  | 824-100ML   | 125ml (4.2 oz)              | Liquid                 |
|      | 824-500ML   | 500ml (17 oz)               | Pump                   |
|      | 824-1L      | 1L (34 oz)                  | Liquid                 |
|      | 824-4L      | 4L (1 gal)                  | Liquid                 |
|      | 824-1G      | 4L (1 gal) x 4              | Liquid                 |
|      | 824-20L     | 18.9L (5 gal)               | Liquid                 |
| 824W | 824-205L    | 205L (55 gal)               | Liquid                 |
|      | 824-W       | 20.3 cm x 12.7 cm (8" x 5") | Single                 |
|      | 824-WX50    | 20.3 cm x 12.7 cm (8" x 5") | 50 pack                |
|      | 824-WX500   | 20.3 cm x 12.7 cm (8" x 5") | 500 pack               |
| 8241 | 8241-T      | -                           | 90 wipes in pop-up tub |



## Safety Wash

4050

Use when a low toxicity cleaner degreaser is required.

- ▶ SAFE ON PLASTICS
- ▶ LOW TOXICITY

Effective at removing oils, greases, inorganic and organic soils, smoke, flux, and ionic residues from PC boards, office and medical equipment, connectors, electronic or mechanical parts, workbenches, relays and semi-conductors. Flammable.

### Available Sizes

|      | Catalog No. | Size           | Format  |
|------|-------------|----------------|---------|
| 4050 | 4050-400G   | 400g (14 oz)   | Aerosol |
|      | 4050-525G   | 525g (18.5 oz) | Aerosol |
|      | 4050-1L     | 1L (34 oz)     | Liquid  |
|      | 4050-4L     | 4L (1 gal)     | Liquid  |
|      | 4050-20L    | 18.9L (5 gal)  | Liquid  |



## Super Wash

406B

Use when a rapidly drying cleaner degreaser is required.

- ▶ SAFE ON PLASTICS
- ▶ RAPID DRY TIME

Perfect for quickly cleaning PC boards. Rapid dry time makes this an excellent product for rinsing away slower drying solvents. Great for rinsing dissolved flux. Extremely flammable.

### Available Sizes

|     | Catalog No. | Size         | Format  |
|-----|-------------|--------------|---------|
| 406 | 406B-450G   | 450g (16 oz) | Aerosol |



# Cleaner Degreasers : Plastic Safe

## HFE Solvent

411



Use only when requiring a 100% non-flammable, non-toxic, and safe on plastic cleaner degreaser.

Suitable for use on live circuits. Suitable for use in cleaning oxygen lines. For a more cost effective and aggressive non-flammable / non-conductive cleaner use cat# 4120. Extra effective with MG Chemicals' hog-hair brushes.

- ▶ 100% NON-FLAMMABLE
- ▶ 100% NON-CONDUCTIVE
- ▶ 100% NON-TOXIC
- ▶ SAFE ON PLASTICS

### Available Sizes

411

| Catalog No.                   | Size           | Format  |
|-------------------------------|----------------|---------|
| 411-300G                      | 300g (10.5 oz) | Aerosol |
| Liquid formats also available |                |         |

# Cleaner Degreasers : Strong

## HFE Super Cleaner Degreaser

4120



Use when a cost effective non-flammable and non-conductive cleaner degreaser is required.

The most high tech cleaner degreaser available in the electronics market. Provides an economical and effective alternative to 141B solvent. Suitable for use on live circuits. Excellent cleaning strength. Also suitable for use as a contact cleaner or flux remover.

- ▶ NON-CONDUCTIVE
- ▶ NON-FLAMMABLE

**DIRECT 141B REPLACEMENT**

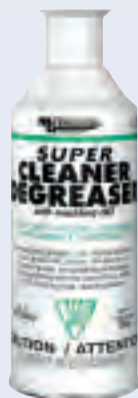
### Available Sizes

4120

| Catalog No. | Size         | Format  |
|-------------|--------------|---------|
| 4120-450G   | 450g (16 oz) | Aerosol |

## Super Cleaner Degreaser

412



- Suitable for use on live circuits
- Excellent cleaning strength

Use when requiring an azeotropic, non-flammable and non-conductive cleaner degreaser is required.

- ▶ NON-CONDUCTIVE
- ▶ NON-FLAMMABLE

**DIRECT 141B REPLACEMENT**

### Available Sizes

412

| Catalog No. | Size        | Format  |
|-------------|-------------|---------|
| 412-450G    | 450g (16oz) | Aerosol |
| 412-1L      | 1 L (34 oz) | Liquid  |

# Cleaner Degreasers : Strong / Aggressive

## Immersion Super Solvent

8260



**Use when immersion cleaning or wipe cleaning**

Slow evaporation rate makes this product perfect for open air immersion cleaning. Human safe, biodegradable makes and environmentally friendly. Strong enough to easily strip most conformal coatings, uncured epoxies and adhesives, oils and greases, yet is safe on most plastics. Great for cleaning parts or tools.

- ▶ LOW FLAMMABILITY
- ▶ EXTREMELY SLOW EVAPORATION
- ▶ EFFECTIVE CLEANING STRENGTH
- ▶ SAFE ON MOST PLASTICS
- ▶ LOW TOXICITY
- ▶ BIO-DEGRADABLE

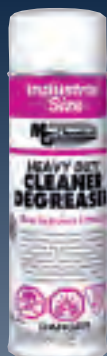
### Available Sizes

|      | Catalog No. | Size       | Format |
|------|-------------|------------|--------|
| 8260 | 8260-1L     | 1L (34 oz) | Liquid |

## Aggressive Cleaners

### Heavy Duty Cleaner Degreaser

827B



**Use when an aggressive cleaner degreaser is required and plastic compatibility or flammability is not a concern.**

Great for removing heavy oils and greases, burnt on flux, ionic residues, and difficult to remove soils. Very effective at cleaning and degreasing the solder side (non-component side) of PC boards. Ideal for use in cleaning steel, piping, and metal parts or tools.

- ▶ AGGRESSIVE CLEANER
- ▶ COST EFFECTIVE

### Available Sizes

|      | Catalog No. | Size          | Format  |
|------|-------------|---------------|---------|
| 827B | 827B-425G   | 425g (15 oz)  | Aerosol |
|      | 827B-1L     | 1L (34 oz)    | Liquid  |
|      | 827B-4L     | 4L (1 gal)    | Liquid  |
|      | 827B-20L    | 18.9L (5 gal) | Liquid  |

### NPB Heavy Duty

4112



**Use when a non-flammable extremely aggressive cleaner degreaser is required, and toxicity is not a concern.**

A cost effective 141B replacement. For use in exactly the same applications as 827B, but where non-flammability is a requirement. Avoid inhalation. Respirator recommended. Suitable for use in vapor degreasers. Suitable for use as a cleaner degreaser, contact cleaner, or flux remover.

- ▶ NON-FLAMMABLE
- ▶ EXTREMELY AGGRESSIVE

### Available Sizes

|      | Catalog No. | Size          | Format  |
|------|-------------|---------------|---------|
| 4112 | 4112-340G   | 340g (12 oz)  | Aerosol |
|      | 4112-1L     | 1L (34 oz)    | Liquid  |
|      | 4112-4L     | 4L (1 gal)    | Liquid  |
|      | 4112-20L    | 18.9L (5 gal) | Liquid  |
|      | 4112-200L   | 200L (55 gal) | Liquid  |

# Contact Cleaners

## Electrosolve™ 409B

Use when a zero residue contact cleaner is required.

- ▶ FAST DRY
- ▶ SAFE ON PLASTICS
- ▶ ZERO RESIDUE

### Available Sizes

| 409B | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 409B-140G   | 140g (5 oz)  | Aerosol |
|      | 409B-340G   | 340g (12 oz) | Aerosol |

Quickly penetrates and dissolves most soil types and non-ionic residues. A great general purpose contact cleaner. Extremely flammable.

Suitable for use in cleaning contacts, connectors, LED's, PCB's, components, circuit breakers, tuners, and microprocessors.



## Super Contact Cleaner with Poly Phenyl Ether 801B

- ▶ SAFE ON PLASTICS
- ▶ MINERAL OIL LUBRICATION
- ▶ PROTECTS AGAINST OXIDATION

### Available Sizes

| 801B | Catalog No. | Size            | Format   |
|------|-------------|-----------------|----------|
|      | 801B-125G   | 125g (4.4 oz)   | Aerosol  |
|      | 801B-100ML  | 125ml (3.5 oz)  | Liquid   |
|      | 801B-P      | 10 ml (0.34 oz) | Felt Pen |



Use when requiring a contact cleaner with lubrication that offers long term protection from oxidation.

Cleans, lubricates, and protects. Removes oxidation. Contains electronic grade mineral oil for lubrication. Contains poly phenyl ether to provide contacts with long term protection from corrosion. Protects gold contacts for life. Improves conductivity. Perfect for use on potentiometers. Also suitable for use on contacts, tuners, sliders, plugs, jacks, and switches.

- Eliminates oxidation for years
- Protects gold for life
- Reduces contact scrubbing
- Reduces connection, wear, and abrasion failures
- Meets Bellcore spec. TR-NWT-00078
- Variable valve allows user to control rate of flow
- Do not use on live circuits

802H

## Oxide Scrubber

Excellent for removing oxides and corrosion from all metals, including gold. After cleaning, apply MG Chemical's Super Contact Cleaner with poly phenyl ether (page 8) for lifetime protection of gold.



- ▶ NON-CHEMICAL
- ▶ EASY TO USE

### Available Sizes

| 802H | Catalog No. | Size     | Format          |
|------|-------------|----------|-----------------|
|      | 802H        | 5 1/4" L | Pen with refill |

## Contact Cleaner with Silicones 404B

Use when requiring a contact cleaner with a dry lubrication.

- ▶ FAST DRY
- ▶ SAFE ON PLASTICS
- ▶ SILICONE LUBRICATION

Leaves behind a thin coating of dry silicone lubricant. Great for cleaning and lubricating delicate moving parts in electronic circuits.

Suitable for use on contacts, tuners, sliders, plugs, jacks, switches, and telescoping antennas. Extremely flammable.



### Available Sizes

| 404B | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 404B-140G   | 140g (5 oz)  | Aerosol |
|      | 404B-340G   | 340g (12 oz) | Aerosol |

# Flux and Flux Removers



**Heavy Duty Flux Remover  
413B**

Use when an aggressive flux remover is required

## ► AGGRESSIVE CLEANING STRENGTH

Suitable for use with rosin, non-rosin, and no clean fluxes. Will harm delicate plastic components. Excellent for dissolving flux on the solder side of PC boards. Excellent for use in spot removing hard burnt on flux from the component side of PC boards.

### Available Sizes

|             | Catalog No. | Size          | Format  |
|-------------|-------------|---------------|---------|
| <b>413B</b> | 413B-425G   | 425g (15 oz)  | Aerosol |
|             | 413B-1L     | 1L (34 oz)    | Liquid  |
|             | 413B-4L     | 4L (1 gal)    | Liquid  |
|             | 413B-20L    | 18.9L (5 gal) | Liquid  |
| <b>4140</b> | 4140-400G   | 400g (14 oz)  | Aerosol |
|             | 4140-500ML  | 500ml (17 oz) | Liquid  |
|             | 4140-1L     | 1L (34 oz)    | Liquid  |
|             | 4140-4L     | 4L (1 gal)    | Liquid  |
|             | 4140-20L    | 18.9L (5 gal) | Liquid  |



**Flux Remover For PC Boards  
4140**

Use when a general-purpose flux remover is required

## ► SAFE ON PLASTICS

Suitable for use with rosin, non-rosin, and no clean fluxes. Safe on plastic components. Available in liquid form for immersion processes.



# Flux and Flux Removers

## How do you remove flux?

Removing flux is a two-step process. The first step is dissolving the flux. The second step is rinsing the dissolved flux off of the PC board.

The rinsing step is very important because after dissolving the flux it may appear that the solids in the flux have disappeared, but once the flux remover has evaporated away, the solids will re-deposit on the board as white residue.

### Step 1: Dissolving the flux

If you are using flux remover in aerosol form, spray a little flux remover onto the flux, then agitate with a hog hair cleaning brush. If you are using our 4140 Flux Remover, you may spray it liberally, as it is safe on your components. If you are using 413B Heavy Duty Flux remover, you may spray it liberally on the solder side of the board, but be careful to only apply it directly to the flux contaminated area if you are using it on the component side of the board, as it will harm some components.

The 4140 is plastic safe so it may be applied liberally. Have a can of 413B handy in case you run into a patch of burnt-on difficult to remove flux.

If you are using flux remover in liquid form, pour the flux remover into a tray. If you are using 4140 Flux Remover, you may then submerge the PC board into the tray, agitating the flux with a hog-hair brush. If you are using 413B Heavy Duty Flux Remover, you should not submerge the board into the tray, as the components will be damaged. Instead, wet the hog-hair brush you are using by dipping it into the tray, then use it to agitate the flux on the board. Periodically rinse and re-wet the brush by swishing it in the flux remover.

### Step 2: Rinsing the board

You must ensure that you push the dissolved flux solids off of the board before the flux remover evaporates and the solids re-deposit. If you are using flux remover in aerosol form, the easiest way to do this is to hold the board vertically and liberally apply more flux remover until you see the flux remover running off of the board.

If you have dissolved the flux by submerging the board in liquid flux remover, just dip the board into the tray and swish the flux remover and you should be ok. If you have been using the particular tray to dissolve flux on a number of boards, dissolved flux may accumulate in the tray and dipping the board may actually deposit flux solids onto the board. In this case you will want to either set up a separate tray for rinsing, or have an aerosol can handy for rinsing.

A particularly good option for rinsing dissolved flux off of a board is to use our 406B Super Wash. Super Wash comes in a large aerosol can, allowing for liberal use, and it dries very rapidly. Super Wash will rinse off un-evaporated flux remover as well as flux solids, and the board will be dry and ready for service almost immediately after rinsing.

## Rosin Flux

835



- Superior fluxing ability
- Instant wetting
- After soldering, the rosin residue is non-corrosive, non-conducting, moisture resistant, and fungus resistant
- Meets Mil. Spec. #RA 14256
- ANSI Spec. 004
- ROMI Class, J Standard



## Rosin Flux Pen

835-P

For precision application of rosin flux, in a convenient microtip pen format. RA type flux.

### Available Sizes

| 835 | Catalog No. | Size             | Format |
|-----|-------------|------------------|--------|
|     | 835-100ML   | 125ml (4.2 oz)   | Liquid |
|     | 835-1L      | 1L (34 oz)       | Liquid |
|     | 835-4L      | 4L (1 gal)       | Liquid |
|     | 835-P       | 10ml (0.34 oz)   | Pen    |
|     | 835-P-20    | 10ml x 20 (Bulk) | Pens   |

## HFE Super Flux Remover

4141

Use when a non-flammable flux remover is required by safety regulations.

- ▶ GOOD CLEANING STRENGTH
- ▶ NON-FLAMMABLE

**DIRECT 141B REPLACEMENT**

Suitable for use with rosin, non-rosin, and no clean fluxes. May harm delicate plastic components.



### Available Sizes

| 4141 | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 4141-340G   | 340g (12 oz) | Aerosol |

# Specialized Cleaners

Specialized Cleaners



## Antistatic Screen Cleaner

Eliminates static charges and provides long term static protection.  
Excellent for use on monitor screens.

### FOR USE ON:

- ▶ CRT'S
- ▶ OFFICE EQUIPMENT
- ▶ TERMINALS
- ▶ CERAMICS
- ▶ GLASS
- ▶ MONITORS
- ▶ BAR CODE READERS

Neutralizes and eliminates build up of static electricity. Eliminates static charge from sensitive areas and provides long-term static protection. Spray on and wipe off finger-prints, grease, oils, inks, smoke, nicotine, carbon, organic and inorganic soils.

### Available Sizes

| 4200 | Catalog No. | Size          | Format       |
|------|-------------|---------------|--------------|
|      | 4200-500ml  | 500ml (17 oz) | Trigger Pump |



4200

## Ultrasonic Cleaner

For use in all ultrasonic tanks and equipment for removing flux, oils, and most types of soils.

- ▶ SAFE ON PLASTICS
- ▶ NON FLAMMABLE
- ▶ SAFE FOR WORKERS

821



## Glass Cleaner

An all purpose glass, plastic, and chrome cleaner

High foaming action provides excellent cleaning capabilities on glass, plastic, chrome, stainless steel, countertops and tile. No harmful solvents or abrasives. For use on glass monitor screens, bar code readers and glass.

### Available Sizes

| 825 | Catalog No. | Size           | Format  |
|-----|-------------|----------------|---------|
|     | 825-500G    | 500G (18.5 oz) | Aerosol |



825

## Super-Concentrated Formula 100:1 Mix Ratio

Effectively cleans metals such as aluminum, copper, brass, silver and gold. Features: Super concentrated mix ratio: 1 to 100 with water. Very economical and environmentally safe.

### Available Sizes

| 821 | Catalog No. | Size           | Format |
|-----|-------------|----------------|--------|
|     | 821-250ML   | 250ml (8.4 oz) | Liquid |
|     | 821-1L      | 1L (34 oz)     | Liquid |

# Specialized Cleaners

## Audio Video Head Cleaner 407C



- ▶ ZERO RESIDUE
- ▶ SAFE ON PLASTICS

Cleans and restores sensitive magnetic and optical read/write heads. Removes nicotine, tape residues, metallic oxides, carbon deposits, oils, dirt.

### Available Sizes

| 407C | Catalog No. | Size           | Format  |
|------|-------------|----------------|---------|
|      | 407C-340G   | 340g (12 oz)   | Aerosol |
|      | 407C-250ML  | 250ml (8.4 oz) | Liquid  |
|      | 407C-1L     | 1L (34 oz)     | Liquid  |

## Perfect for use with MG Chemicals Chamois Swabs



|  |      |
|--|------|
|  | 810D |
|  | 810  |

See page 46 for Chamois Swabs

## Label & Adhesive Remover 836



- ▶ SAFE ON PLASTICS

Effectively removes adhesives and sticker residues. Distinctive citrus odor is non offensive to the user.

### Available Sizes

| 836 | Catalog No. | Size        | Format  |
|-----|-------------|-------------|---------|
|     | 836-140G    | 140g (5 oz) | Aerosol |

## Rubber Renue 408A

- ▶ ZERO RESIDUE
- ▶ FAST EVAPORATING

Rejuvenates and conditions rubber. Rubs off oxidation film. Apply with cloth, brush, or swab. Excellent for use on belts, platens, rollers, rubber parts. Use with adequate ventilation.



### Available Sizes

| 408A | Catalog No. | Size           | Format |
|------|-------------|----------------|--------|
|      | 408A-100ML  | 125ml (4.2 oz) | Liquid |
|      | 408A-250ML  | 250ml (8.4 oz) | Liquid |
|      | 408A-1L     | 1L (34 oz)     | Liquid |

## Touch Pump Solvent Dispensers

Both dispensers come with a high-density polyethylene 8 oz. bottle suitable for many solvents. These square shaped bottles provide stability and save storage space. Wide openings allow for easy refill. Translucent bottles allow for easy viewing of contents.



### Touch Pump Solvent Dispenser

8230-8

- Patented one handed operation
- Perfect for cleaning with cotton balls, pads, and brushes
- Precision machined valves, smooth consistent operation
- Cam-lock hinge, keeps lid open and closed, reduces odors
- No silicone or latex, perfect for ultra clean environments
- 100% stainless steel, will not corrode or contaminate liquid

### Anti-Spill Lock Anti-Backflow Touch Pump Solvent Dispenser

8231-8

- Patented one handed operation
- Perfect for cleaning with cotton balls, pads, and brushes
- Precision machined valves, smooth consistent operation
- Cam-lock hinge, keeps lid open and closed, reduces odors
- No silicone or latex, perfect for ultra clean environments
- 100% stainless steel, will not corrode or contaminate liquid

#### PLUS:

- Back flow protector stops fluids from re-entering the bottle
- Locking pump, will not leak when engaged - suitable for travel

#### Available Sizes

|      | Catalog No. | Size  | Format      |
|------|-------------|-------|-------------|
| 8230 | 8230-8      | 8 oz. | Pump bottle |
| 8231 | 8231-8      | 8 oz. | Pump bottle |

## Projection Tube Coolant 803

Use as a heat transfer fluid in projection tubes. Compatible with all major brands. High purity, non-contamination. Easy to use container.



#### Available Sizes

|     | Catalog No. | Size           | Format |
|-----|-------------|----------------|--------|
| 803 | 803-250ML   | 250ml (8.4 oz) | Liquid |
|     | 803-500ML   | 500ml (17 oz)  | Liquid |



# Desoldering Braid

## Super Wick™ 400 SERIES

Cleaned and manufactured using environmentally friendly technology



Any place you can put solder in, you can take it out with SUPER WICK. Remove the most expensive circuitry with confidence. Just lay the SUPER WICK on the soldered joint, apply tip of soldering iron to top-side for one second, and lift iron and SUPER WICK together to leave a clean connection ready for component removal or replacing. SUPER WICK is pure copper, specially woven wound on a pocket size spool with pressurized periphery.

### Fine Braid Super Wick™

- RMA type flux
- Faster than most brands
- Environmentally safe residue
- More strands of copper per sq. inch
- Static dissipative spools on all sizes
- Chosen by many users as best brand
- Satisfaction guaranteed

### No Clean Super Wick™

- Available in many sizes
- RMA type flux
- Leaves 15-25% less residue than our regular wick
- Residue does not require cleaning
- Static dissipative spools on all sizes
- Chosen by many users as best brand
- Satisfaction guaranteed

### Fine Braid Format

| Format                                            | Cat. No. | Width | Color code     |
|---------------------------------------------------|----------|-------|----------------|
| Fine Braid Super Wick<br>5 ft lengths (1.52 m)    | 423      | .025" | #1 white (SMT) |
|                                                   | 424      | .050" | #2 yellow      |
|                                                   | 425      | .075" | #3 green       |
|                                                   | 426      | .100" | #4 blue        |
|                                                   | 427      | .125" | #5 brown       |
| Fine Braid Super Wick<br>25 ft lengths (7.62 m)   | 442      | .050" | #2 yellow      |
|                                                   | 443      | .075" | #3 green       |
|                                                   | 444      | .100" | #4 blue        |
| Fine Braid Super Wick<br>50 ft lengths (15.24 m)  | 451      | .025" | #1 white (SMT) |
|                                                   | 452      | .050" | #2 yellow      |
|                                                   | 453      | .075" | #3 green       |
|                                                   | 454      | .100" | #4 blue        |
| Fine Braid Super Wick<br>100 ft lengths (30.48 m) | 462      | .050" | #2 yellow      |
|                                                   | 463      | .075" | #3 green       |
|                                                   | 464      | .100" | #4 blue        |
| Fine Braid Super Wick<br>500 ft lengths (152.4 m) | 471      | .025" | #1 white (SMT) |
|                                                   | 472      | .050" | #2 yellow      |
|                                                   | 473      | .075" | #3 green       |
|                                                   | 474      | .100" | #4 blue        |

### No Clean Format

|                                             |        |       |           |
|---------------------------------------------|--------|-------|-----------|
| No Clean Super Wick 5 ft lengths (1.52 m)   | 424-NS | .050" | #2 yellow |
|                                             | 425-NS | .075" | #3 green  |
|                                             | 426-NS | .100" | #4 blue   |
| No Clean Super Wick 50 ft lengths (15.24 m) | 453-NS | .075" | #3 green  |
|                                             | 454-NS | .100" | #4 blue   |

## Peelable Solder Mask 862

- Contains no ammonia
- Non corrosive to copper, gold, silver or pre-soldered surfaces
- Opaque pink color turns red when cured
- Can be used in water or solvent systems
- Anti-static, thixotropic
- Tested at temperatures 200°C and 400°C



Synthetic acrylic latex. Excellent for masking contacts, gold fingers, card edges and desired areas during circuit board repair. Meets MIL-STD-2000 paragraph 5.3.18 parts a, b, and d.

### Available Sizes

| 862 | Catalog No. | Size         | Format |
|-----|-------------|--------------|--------|
|     | 862-150ML   | 150ml (5 oz) | Tube   |
|     | 862-1G      | 4L (1 gal)   | Pail   |

# EPOXIES AND COATINGS



## Potting & Encapsulating Epoxy Compound

### 832B Black / 832C Clear

Provides excellent protection from impact, shock, moisture, abuse, chemicals, and analysis. Provides technology security. Excellent for explosion proof components. Available in black and clear.

- Non-conductive, an electrical insulator
- Non-porous
- Water and chemical resistant
- Contains a form of nylon for excellent impact resistance
- Provides excellent technology security, extremely difficult to remove once cured
- Excellent machining properties
- Suitable for explosion proof components, spark arresting
- Less than 0.5% shrinkage during cure
- Low toxicity
- Easy and simple to mix
- Long pot life
- Can be cured in one hour at 65°C (150°F)
- Excellent adhesion to most surfaces



#### Available Sizes

|             | Catalog No. | Size            | Color | Format |
|-------------|-------------|-----------------|-------|--------|
| <b>832B</b> | 832B-375ML  | 375 ml (12 oz)  | Black | liquid |
|             | 832B-3L     | 3 L (0.8 gal)   | Black | liquid |
|             | 832B-60L    | 60 L (15.6 gal) | Black | liquid |
| <b>832C</b> | 832C-375ML  | 375 ml (12 oz)  | Clear | liquid |
|             | 832C-3L     | 3 L (0.8 gal)   | Clear | liquid |
|             | 832C-60L    | 60 L (15.6 gal) | Clear | liquid |

## 832B Specifications

#### Uncured Properties - Resin [Part A]

|                  |           |
|------------------|-----------|
| Viscosity        | 2,500 cps |
| Specific Gravity | 1.1273    |

#### Uncured Properties - Hardener [Part B]

|                  |                   |
|------------------|-------------------|
| Viscosity        | 11,000 cps        |
| Specific Gravity | 0.9564            |
| Color            | Clear, amber tint |

#### Cured Properties - Physical

|                                   |            |
|-----------------------------------|------------|
| Mixed Viscosity                   | 3,300 cps  |
| Mixed Specific Gravity            | 1.0577     |
| Volume Mix Ratio (resin:hardener) | 2.0:1      |
| Mass Mix Ratio (resin:hardener)   | 2.3:1      |
| Working time (100g)               | 60 min.    |
| Cure Time (100g, room temp.)      | 24 hours   |
| Heat Cure Time (100g, 65°C)       | 60 min.    |
| Shore Hardness                    | 82 Shore D |

#### Cured Properties - Temperature

|                                  |               |
|----------------------------------|---------------|
| Constant Service Temperature     | 140°C (284°F) |
| Intermediate Service Temperature | 145°C (293°F) |

#### Cured Properties - Electrical

|            |     |
|------------|-----|
| Insulative | Yes |
| Conductive | No  |

| Chemical and Solvent Resistance | Change after<br>3 days | Change after<br>45 days |
|---------------------------------|------------------------|-------------------------|
| Hydrochloric Acid               | < 0%                   | < 1%                    |
| Isopropyl Alcohol               | < 0.3%                 | < 1%                    |
| Ethyl Lactate                   | < 3%                   | < 7%                    |
| Acetone                         | < 7%                   | destroyed               |
| Xylene                          | < 2%                   | < 9%                    |
| Iso hexanes                     | < 5%                   | < 8%                    |
| Mineral spirits                 | < 0.3%                 | < 0.3%                  |

For more specifications visit [www.mgchemicals.com](http://www.mgchemicals.com)



# Epoxies : Special Application

## Flame Retardant Epoxy 832FRB



- Flame retardant epoxy will self-extinguish in less than 1 second
- Meets UL 94V-0
- Non-electrically conductive

Meets UL 94V-0 vertical burn test. A two component self extinguishing epoxy compound. Provides insulation and protects sensitive components and circuits from: static discharge, impact, heat, shock, conductivity, abuse, vibration, moisture, fresh and salt water, chemicals and analysis.

### Uncured Properties - Resin [Part A]

|                  |          |
|------------------|----------|
| Viscosity        | 6700 cps |
| Specific Gravity | 1.32     |
| Color            | Blue     |

### Uncured Properties - Hardener [Part B]

|                  |          |
|------------------|----------|
| Viscosity        | 4700 cps |
| Specific Gravity | 0.986    |
| Color            | Blue     |

### Cured Properties

|                                   |              |
|-----------------------------------|--------------|
| Volume Mix Ratio (resin:hardener) | 1.2 : 1      |
| Mass Mix Ratio (resin:hardener)   | 1.8 : 1      |
| Working time (100g)               | 120 min.     |
| Cure Time (100g, room temp.)      | 24 hours     |
| Heat Cure Time (100g, 65°C)       | 60 min.      |
| Shore Hardness                    | 80 shore D   |
| Constant Service Temp.            | 80°C (176°F) |
| Intermediate Service Temp.        | 90°C (194°F) |
| Insulative                        | Yes          |
| Conductive                        | No           |

### Available Sizes

|               | Catalog No.  | Size               | Format               |
|---------------|--------------|--------------------|----------------------|
| <b>832FRB</b> | 832FRB-375ML | 375 ml (12 oz)     | Blue Flame Retardant |
|               | 832FRB-3L    | 3 liters (0.8 gal) |                      |
|               | 832FRB-60L   | 60 liters (16 gal) |                      |

## Thermally Conductive Epoxy 832TC



- Two part epoxy, with a 1 to 1 mixing ratio by volume
- Two hour working time
- Suitable for large production runs
- Cures in 2 days at room temperature or one hour at 65°C.
- Non-electrically conductive

100% solids. Formulated with undiluted Bis F resin for superior physical properties, and pigmented with high purity pigment to provide excellent thermal conductivity at reasonable cost.

Pigmented black for excellent thermal absorption and emission. Provides superior protection from impact, shock, conductivity, moisture, abuse, chemicals, and analysis.

### Uncured Properties - Resin [Part A]

|                  |            |
|------------------|------------|
| Viscosity        | 41,100 cps |
| Specific Gravity | 1.8019     |
| Color            | Black      |

### Uncured Properties - Hardener [Part B]

|                  |            |
|------------------|------------|
| Viscosity        | 68,900 cps |
| Specific Gravity | 1.5036     |
| Color            | Black      |

### Cured Properties - PHYSICAL

|                                   |            |
|-----------------------------------|------------|
| Mixed Viscosity                   | 76,300 cps |
| Mixed Specific Gravity            | 1.6156     |
| Volume Mix Ratio (resin:hardener) | 1.1 : 1    |
| Mass Mix Ratio (resin:hardener)   | 1.35 : 1   |
| Working time (100g)               | 120 min.   |
| Cure Time (100g, room temp.)      | 24 hours   |
| Heat Cure Time (100g, 65°C)       | 60 min.    |
| Shore Hardness                    | 82 Shore D |

### Cured Properties - TEMPERATURE

|                                  |                            |
|----------------------------------|----------------------------|
| Constant Service Temperature     | 90°C (194°F)               |
| Intermediate Service Temperature | 110°C (230°F)              |
| Thermal Conductivity             | 0.682 W / m * K            |
| Thermal Diffusivity              | 0.38 mm <sup>2</sup> / s   |
| Volumetric Specific Heat         | 1.9MJ / m <sup>3</sup> * K |

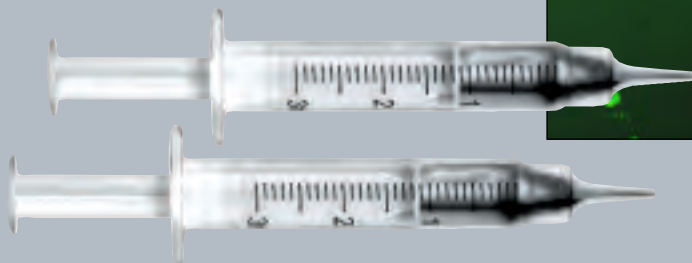
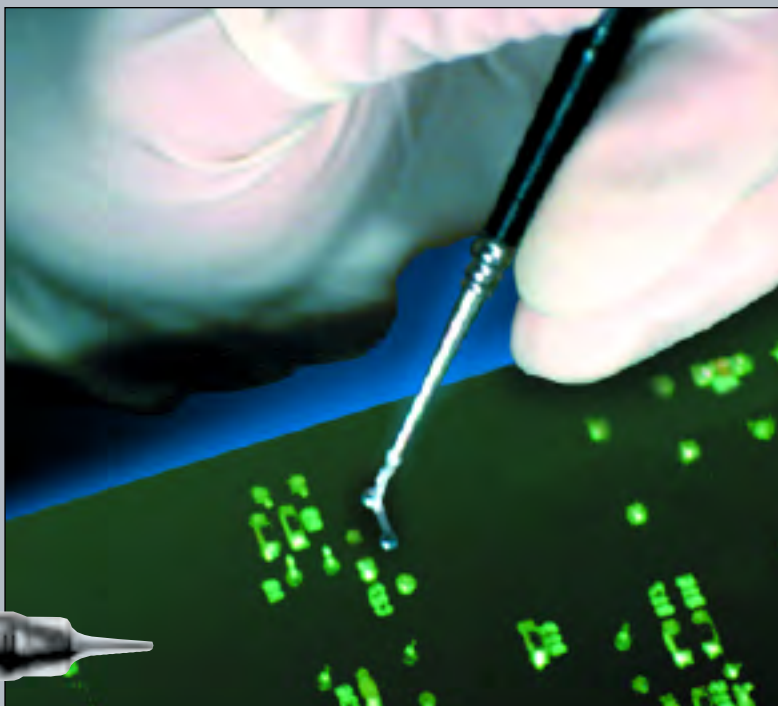
### Available Sizes

|              | Catalog No. | Size               | Format                |
|--------------|-------------|--------------------|-----------------------|
| <b>832TC</b> | 832TC-450ML | 450ml (15 oz)      | Black Thermally Cond. |
|              | 832TC-2L    | 2 liters (0.5 gal) |                       |
|              | 832TC-40L   | 40 liters (10 gal) |                       |

## Silver Conductive Epoxy 8331

- Forms high strength conductive bonds
- Resistivity of 0.02 ohm • cm

This two part silver epoxy offers high electrical conductivity and strong conductive bonding. Use in place of traditional soldering on heat sensitive components. Good for repairing defective traces and creating jumpers on boards. Can be used as an effective heat sink adhesive. This Conductive Silver Epoxy comes in two 7g syringes.



### Available Sizes

| 8331 | Catalog No. | Size          | Format       |
|------|-------------|---------------|--------------|
|      | 8331-14G    | 14g (0.35 oz) | Dual Syringe |
|      | 8331-454G   | 454g (1 lb.)  | Liquid       |

## Epoxy & Adhesive Cleaner 8328

Very effective for cleaning up work area and mixing equipment of uncured epoxies.

- Human and environment safe
- Low odor
- Slow evaporator
- Safe on most plastics
- Zero residue



### Available Sizes

| 8328 | Catalog No. | Size          | Format       |
|------|-------------|---------------|--------------|
|      | 8328-500ML  | 500ml (17 oz) | Trigger Pump |

## Epoxy Mold Release 8329

### Non Silicone Formula

For use with all types of epoxies and phenolic resins.



### Available Sizes

| 8329 | Catalog No. | Size            | Format  |
|------|-------------|-----------------|---------|
|      | 8329-350G   | 350 g (12.3 oz) | Aerosol |



## PROTECTIVE COATINGS

## Why are protective coatings required?

Protective coatings are necessary to ensure a long and effective working life of electrical and electronic components. MG Chemicals offers a wide range of coatings suitable for protecting:

- Circuit boards
- Windings and coils
- Transformers
- Field coils
- Stator windings
- and more

The coatings protect components from:

- Electrical arcing
- Environmental factors
- Physical force
- Mold
- Fungus

## What do coatings do?

### ► Suppress arcing

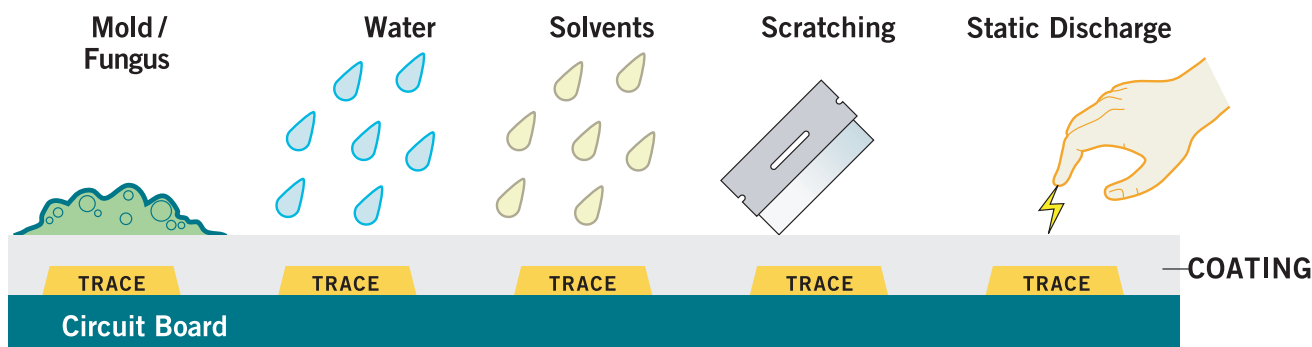


### WHAT IS ARCING?



Arcing occurs when voltage jumps from one surface to another due to the close proximity of parallel currents. The result is a board malfunction or damaged components. It may occur on any circuitboard without a coating.

### ► Resist environmental and physical forces



# Protective Coatings : Conformal

## Urethane Conformal Coating 4223

Our Urethane Conformal Coating conforms to Military Specification MIL-V-173C-2. It is a unique, high temperature electrical insulator that dries very quickly to a tough, clear, chemically resistant film. It is an excellent conformal coating for all types of electrical and electronic parts. Provides extraordinary abrasion resistance, excellent chemical and moisture protection.

### OUTSTANDING PROPERTIES

- Fungicidal
- Fast drying-units can be handled in 30 minutes
- Apply by dip, brush or spray
- Class F temperature rating (160°C / 320°F)
- Excellent chemical resistance
- Oil and moisture resistant
- Excellent for coating circuit boards
- Superior abrasion resistance
- Excellent adhesion
- Good flexibility
- Can be thinned to desired viscosity using M.G. Chemicals Cat No. 435
- UV indicator



### Specifications

|                                                     |                                 |
|-----------------------------------------------------|---------------------------------|
| Color / Appearance                                  | Clear / Amber                   |
| Density @25°C (75°F), Lbs/gal                       | 7.5 - 8.5                       |
| Viscosity 30°C (86°F), Zahn #2                      | 74 - 82 seconds                 |
| Viscosity @25°C (75°F) Brookfield Viscometer cps    | 130 - 270                       |
| Flash point                                         | 27°C (81°F)                     |
| Film Build, mils/side, ASTM D-115                   | 1 - 1.5                         |
| Thinner                                             | M.G Chemicals Cat No. 435       |
| Cure Time @25°C (75°F) on Strip, min.               | Set to Touch 10<br>Tack Free 60 |
| Federal Specification, TT-P-1436-Free of After Tack | 1 hour                          |
| Class F temperature rating                          | 160°C (320°F)                   |
| Corrosive Effect on Copper                          | None                            |
| <b>CHEMICAL RESISTANCE</b>                          |                                 |
| Water                                               | Excellent                       |
| Acid (10% Sulfuric Acid)                            | Excellent                       |
| Alkali (1% Sodium Hydroxide)                        | Excellent                       |
| Salt Water                                          | Excellent                       |
| Oil, ASTM D-115                                     | Passed                          |
| <b>FUNGUS RESISTANCE, MIL-V-173-2</b>               |                                 |
| Aspergillus Niger                                   | Passed                          |
| Aspergillus Flavus                                  | Passed                          |
| Penicillium Funiculosum                             | Passed                          |
| Trichoderma SP                                      | Passed                          |
| <b>ELECTRICAL PROPERTIES</b>                        |                                 |
| Dielectric Strength, Volts/mil (dry)                | 1800                            |
| Dielectric Strength, Volts/mil (wet)                | 1200                            |

### Available Sizes

|      | Catalog No. | Size            | Format |
|------|-------------|-----------------|--------|
| 4223 | 4223-55ML   | 55ml (2 oz)     | Liquid |
|      | 4223-1L     | 950ml (1 quart) | Liquid |
|      | 4223-4L     | 3.78L (1 gal)   | Liquid |
|      | 4223-20L    | 18.9L (5 gal)   | Liquid |

Aerosol form also available



# Protective Coatings : Conformal

## Coating Options

| Type                                        | Acrylic                                                                  | Silicone                                                                                    | Urethane                                                                               | Red Insulating Varnish                                          | Super Corona Dope |
|---------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------|
| Cat. No.                                    | 419B                                                                     | 422A                                                                                        | 4223                                                                                   | 4228                                                            | 4226              |
| Moisture Resistance                         | Extreme                                                                  | Extreme                                                                                     | Extreme                                                                                | Extreme                                                         | Extreme           |
| Acid Resistance                             | Moderate                                                                 | Low                                                                                         | Extreme                                                                                | Moderate                                                        | Moderate          |
| Temperature Resistance                      | Moderate                                                                 | High                                                                                        | Moderate                                                                               | Moderate                                                        | Moderate          |
| Flexible or Hard Finish                     | Hard                                                                     | Flexible                                                                                    | Hard                                                                                   | Flexible                                                        | Flexible          |
| Dielectric Strength (V/mil)                 | 2200                                                                     | 2000                                                                                        | 2000                                                                                   | 3100                                                            | 4100 (Baked cure) |
| Color                                       | Clear                                                                    | Clear                                                                                       | Clear                                                                                  | Red                                                             | Clear             |
| Formats Available                           | Aerosol/Liquid/Pen                                                       | Aerosol/Liquid/Pen                                                                          | Aerosol/Liquid                                                                         | Liquid                                                          | Liquid            |
| Recommended Uses:<br>Coatings and Varnishes | Field coils<br>Control coils<br>Windings<br>Motor frames<br>Switch bases | Molded bakelite<br>Electrical connectors<br>Collector rings<br>Fuse tubes<br>Solenoid coils | Circuit boards<br>Controller shafts<br>Commutator ends<br>Porcelain<br>Soldered joints | Stators<br>Transformers<br>Bus bars<br>Junction boxes<br>Cables |                   |

## Acrylic Conformal Coating 419B

- ▶ ALL ROUND PRINTED CIRCUIT BOARD PROTECTOR
- ▶ CLEAR, DURABLE, MOLD RESISTANT COATING
- ▶ EFFECTIVE IN PREVENTING STATIC DISCHARGE
- ▶ CONTAINS UV INDICATOR FOR Q.C. INSPECTION

419B Acrylic Conformal Coating is a durable finish product that provides an all round protective coating for printed circuit boards against moisture, corrosion, and thermal shock. It protects and insulates electrical and electronic components and assemblies, including generators, motors, transformers, relays, and solenoid coils. For clean up, use MG Chemicals 435 Thinner Cleaner.



### Available Sizes

| 419B | Catalog No. | Size            | Format       |
|------|-------------|-----------------|--------------|
|      | 419B-340G   | 340g (12 oz)    | Aerosol      |
|      | 419B-55ML   | 55ml (2 oz)     | Liquid       |
|      | 419B-1L     | 950ml (1 quart) | Liquid       |
|      | 419B-4L     | 3.78L (1 gal)   | Liquid       |
|      | 419B-20L    | 18.9L (5 gal)   | Liquid       |
|      | 4190-GP     | 5ml (0.16 oz)   | Microtip pen |

## Silicone Conformal Coating 422

- ▶ UL RECOGNIZED (FILE #E203094)
- ▶ UL 94 FLAME CLASS, 94V-0
- ▶ CSA TESTED (FILE #LO 4000-4068)
- ▶ REMAINS FLEXIBLE FROM -65°C TO 200°C (-85°F TO 392°F)
- ▶ CONTAINS UV INDICATOR FOR Q.C. INSPECTION

Protect PCBs and related equipment against moisture, thermal shock, and vibration. This Silicone Conformal Coating is a flexible finish product that provides a protective coating for printed circuit boards against moisture, corrosion, and thermal shock. It protects and insulates electrical and electronic components and assemblies, including generators, motors, transformers, relays, and solenoid coils. For clean up, use MG Chemicals 435 Thinner Cleaner.



### Available Sizes

| 422 | Catalog No. | Size             | Format           |
|-----|-------------|------------------|------------------|
|     | 422A-340G   | 340 gram (12 oz) | Aerosol, with UV |
|     | 422-55ML    | 55ml (2 oz)      | Liquid           |
|     | 422-1L      | 950ml (1 quart)  | Liquid           |
|     | 422-4L      | 3.78L (1 gal)    | Liquid           |
|     | 422-20L     | 18.9L (5 gal)    | Liquid           |
|     | 422A-P      | 5ml (0.16 oz)    | Microtip pen     |

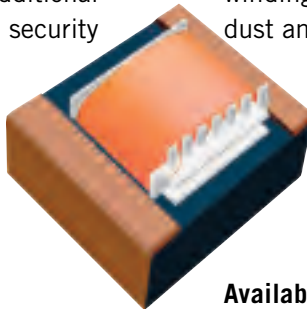
# Protective Coatings : Conformal

## Red Insulating Varnish 4228

- ▶ CLASS F THERMAL PROTECTION (20,000 HOURS @ 150°C)
- ▶ DIELECTRIC STRENGTH 3100 V/MIL



Protect motor windings, small dry type transformers, and coils from arcing, discharge and oxidation. Only one coat required. Apply additional coats if extra protection or security is desired.



### Available Sizes

| 4228 | Catalog No. | Size            | Format |
|------|-------------|-----------------|--------|
|      | 4228-55ML   | 55ml (2 oz)     | Liquid |
|      | 4228-1L     | 950ml (1 quart) | Liquid |
|      | 4228-4L     | 3.78 L (1 gal)  | Liquid |

## Super Corona Dope 4226

- ▶ EXCELLENT FOR HIGH VOLTAGE APPLICATIONS
- ▶ HIGH DIELECTRIC STRENGTH 4100 V/MIL

Protecting electrical and electronic components from arcing and discharge. Thoroughly penetrates into windings and coils and seals out air, dust and moisture.



### Available Sizes

| 4226 | Catalog No. | Size            | Format |
|------|-------------|-----------------|--------|
|      | 4226-55ML   | 55ml (2 oz)     | Liquid |
|      | 4226-1L     | 950ml (1 quart) | Liquid |
|      | 4226-4L     | 3.78 L (1 gal)  | Liquid |

## Thinner Cleaner 435

- ▶ FAST EVAPORATING
- ▶ HIGHLY FLAMMABLE



Used for thinning coatings as well as for cleaning workplace and equipment after the use of conformal coatings.

### Available Sizes

| 435 | Catalog No. | Size         | Format |
|-----|-------------|--------------|--------|
|     | 435-55ML    | 55 ml (2 oz) | Liquid |
|     | 435-1L      | 1L (34 oz)   | Liquid |
|     | 435-4L      | 4 L (1 gal)  | Liquid |

## Conformal Coating Stripper 8310

- ▶ EXTRA STRENGTH
- ▶ NON-FLAMMABLE
- ▶ NON-D RIP (GEL TYPE)
- ▶ SAFE ON METALS



Removes protective coatings, including epoxy, urethane, silicones, and acrylics. Also removes carbon, tar, adhesives, rubber, and some plastics. Avoid contact with skin.

### Available Sizes

| 8310 | Catalog No. | Size           | Format                 |
|------|-------------|----------------|------------------------|
|      | 8310-100ML  | 100ml (3.4 oz) | Liquid, with brush cap |

# Protective Coatings : EMI / RFI Shielding

## Super Shield Conductive Coating

### Reduce or Eliminate EMI / RFI Interference

A general purpose EMI / RFI shielding spray for use on plastic electronics enclosures. Consists of a tough, durable acrylic base pigmented with a high purity nickel, silver coated copper or silver flakes.

- Dry time: 10 min. at room temperature
- Recoat time: 5 min.
- Excellent adhesion to most plastics
- Tested as per IEEE Std. 299-1997
- Underwriters Laboratories Recognized File No.: E202609
- Liquid version available for dipping, brushing or spray gun applications
- Thin or clean with part #435-1L Thinner/Cleaner

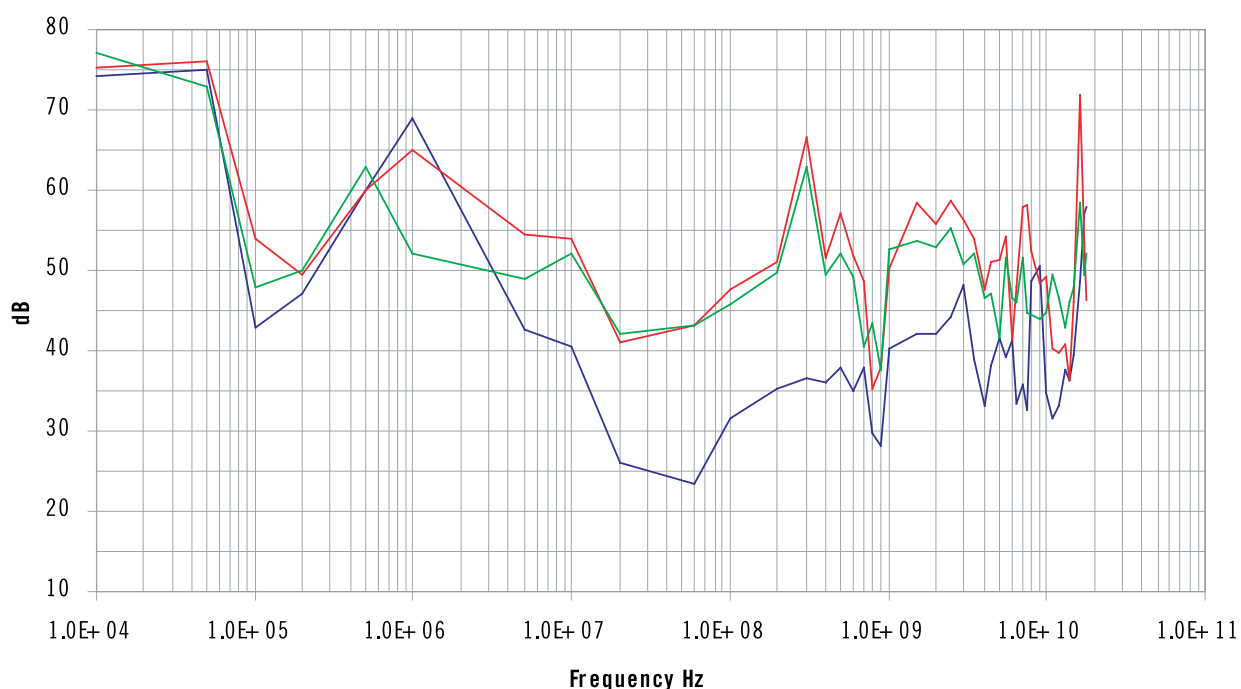
### Available Sizes

|      | Catalog No.                                                     | Size                    | Coverage              | Format  |
|------|-----------------------------------------------------------------|-------------------------|-----------------------|---------|
| 841  | <b>Nickel Conductive Coating (0.25 ohms • cm)</b>               |                         |                       |         |
|      | 841-340G                                                        | 340g (12 oz)            | 1600 in <sup>2</sup>  | Aerosol |
|      | 841-900ML                                                       | 900ml (0.23 gal, 4 lbs) | 8300 in <sup>2</sup>  | Liquid  |
|      | 841-1G                                                          | 3.8 L (1 gal)           | 33200 in <sup>2</sup> | Liquid  |
| 843  | <b>Silver Coated Copper Conductive Coating (0.15 ohms • cm)</b> |                         |                       |         |
|      | 843-900ml                                                       | 900ml (0.23 gal, 4 lbs) | 8300 in <sup>2</sup>  | Liquid  |
| 8420 | <b>Silver Conductive Coating (0.01 ohms • cm)</b>               |                         |                       |         |
|      | 8420-900ML                                                      | 900ml (0.23 gal, 4 lbs) | 8300 in <sup>2</sup>  | Liquid  |



Protective Coatings

## Shielding Effectiveness



Nickel = Blue, Silver Coated Copper = Green, Silver = Red



## Super Glue Display Pack

8335

The Super Glue Display Pack offers a point of sale solution for MG Chemicals Super Glue products. Contains 12 units of Cat. No. 8333 Super Glue Liquid and 12 units of Cat. No. 8334 Super Glue Gel.

### Available Sizes

| 8335 | Catalog No. | Size (H x W x D)   | Format                           |
|------|-------------|--------------------|----------------------------------|
|      | 8335        | 7" x 8.5" x 5.825" | Holds 12 Liquid and 12 Gel units |

## Super Glue Liquid 8333

This cyanoacrylate adhesive has been formulated to quickly bond rubber, plastics, metal, and ceramics. It offers excellent strength characteristics.

## Super Glue Gel 8334

This hybrid cyanoacrylate adhesive has been formulated to quickly bond rubber, plastics, metal, and ceramics. It offers excellent strength characteristics. Choose gel when bonding uneven or vertical surfaces.

### Available Sizes

| 8334<br>8333 | Catalog No. | Size         | Format |
|--------------|-------------|--------------|--------|
|              | 8334-3ML    | 3ml (0.1 oz) | Gel    |
|              | 8333-20G    | 20g (1 oz)   | Liquid |
|              | 8333-3G     | 3g (0.1 oz)  | Liquid |

## Fast Set Epoxy 8332

**Provides 1500 PSI bonding strength to paper, wood, metal, and ceramics.**

Conveniently packed in a 25ml dual syringe, with a snap open cap, snap out paddle and mixing cup. Provides 1500 PSI bonding strength to paper, wood, metal, and ceramics.

**Working time: 5 minutes**

**Full Cure: 1 hour**

### Available Sizes

| 8332 | Catalog No. | Size        | Format       |
|------|-------------|-------------|--------------|
|      | 8332-25ML   | 25ml (1 oz) | Dual Syringe |



## Super Contact Cement 8336

Quick drying, water proof, clear, and vibration-resistant bond with minimal shrinkage. For shop, industry, home and hobby use. Ideal for speaker repair.



### Available Sizes

| 8336 | Catalog No. | Size         | Format |
|------|-------------|--------------|--------|
|      | 8336-55ML   | 55 ml (2 oz) | Liquid |

## Threadlockers Display Pack 8700

Contains 5 each of  
8701-10ML  
8702-10ML  
8703-10ML  
8704-10ML

## Threadlockers

Threadlockers completely fill in thread paths to eliminate the movement that causes parts to shake and vibrate loose.



8701



8702



8703



8704

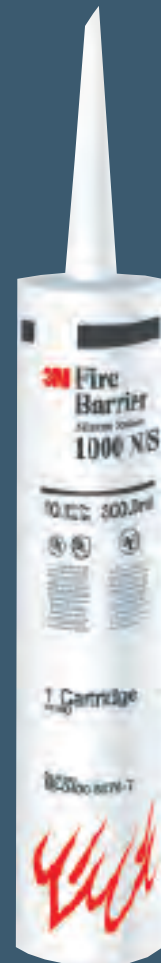
| Description | 8701                                                                                                                                                                                                                                                                                                    | 8702                                                                                                                                                                                                                                                                                                                    | 8703                                                                                                                                                                                        | 8704                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | <ul style="list-style-type: none"> <li>▶ Low strength threadlocking</li> <li>▶ Ideal for small screws 1/4" in diameter and smaller</li> <li>▶ Controlled lubricity for accurate clamp loading</li> <li>▶ May be disassembled with hand tools</li> <li>▶ Meets MIL-S-46163A, Type II, Grade M</li> </ul> | <ul style="list-style-type: none"> <li>▶ General purpose, medium strength threadlocking</li> <li>▶ Ideal for fasteners 3/4" in diameter or smaller</li> <li>▶ Controlled lubricity for accurate clamp loading</li> <li>▶ May be disassembled with hand tools</li> <li>▶ Meets MIL-S-46163A, Type II, Grade N</li> </ul> | <ul style="list-style-type: none"> <li>▶ High strength permanent threadlocking</li> <li>▶ Ideal for fasteners up to 1" in diameter</li> <li>▶ Meets MIL-S46163A, Type I, Grade K</li> </ul> | <ul style="list-style-type: none"> <li>▶ High strength wicking grade</li> <li>▶ Penetrates threads by capillary action</li> <li>▶ Ideal for sealing/ locking pre-assembled fasteners</li> <li>▶ Secures screws, bolts, seals welds and porous metal parts</li> <li>▶ Meets MIL-S46163A, Type III, Grade R</li> </ul> |

- ▶ Prevent loosening and ensures a secure hold with one drop
- ▶ Stop corrosion, seal threads, improve torque control, reduce galling, and minimize inventories
- ▶ Only cures in the absence of air (anaerobic) making cleanup of excess threadlocker easy
- ▶ Can drive reliability up and costs down
- ▶ Provide lubrication to achieve controlled torque during assembly and operation
- ▶ Hold critical clamp load pressures under the most severe environments
- ▶ Available in four strengths and two sizes

### Available Sizes

|      | Catalog No. | Size                               | Format       |
|------|-------------|------------------------------------|--------------|
| 8701 | 8701-10ML   | 10 ml (0.2 oz)                     | Liquid       |
|      | 8701-50ML   | 50 ml (2 oz)                       | Liquid       |
| 8702 | 8702-10ML   | 10 ml (0.2 oz)                     | Liquid       |
|      | 8702-50ML   | 50 ml (2 oz)                       | Liquid       |
| 8703 | 8703-10ML   | 10 ml (0.2 oz)                     | Liquid       |
|      | 8703-50ML   | 50 ml (2 oz)                       | Liquid       |
| 8704 | 8704-10ML   | 10 ml (0.2 oz)                     | Liquid       |
|      | 8704-50ML   | 50 ml (2 oz)                       | Liquid       |
| 8700 | 8700        | HxWxD: 17.8 cm x 21.6 cm x 14.8 cm | Display Pack |

# RTV SILICONES



## Selecting the Right RTV Silicone

### 1. How thick does your silicone need to be?

If you are planning to use the product as an adhesive, or you are potting less than 1/4" thick, one part silicones will do the job. For thicker potting, use a two part silicone.

### 2. Will there be extensive metal contact in your application?

Some silicones can be corrosive to metals. Select a non-corrosive silicone for any metal contact application.

### 3. Do you require a flowable or a paste?

Silicones are divided into flowable and paste consistencies. For encapsulation and hard to reach areas, select a flowable silicone. Pastes are appropriate for adhering to vertical surfaces and applications where a high viscosity is desired.

For additional assistance in selecting the right silicone, visit [www.mgchemicals.com/products/silicones](http://www.mgchemicals.com/products/silicones) or contact Technical Support at 1-604-888-3084 ext. 125.

# RTV Silicones

## General Use (1 Part RTV)

Economical, general-purpose silicones for all industries.

Temperature range of -60°C to 205°C (-76°F to 401°F)

| No.  | Stock Number                  | Form     | Size                            | Application                                                                                      | Color        | Tack free time (min) | Dielectric str. (V/mil) | Dielectric constant | Elongation | Tensile str. (MPa) | Hardness (Shore A) | Viscosity  |
|------|-------------------------------|----------|---------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------------|-------------------------|---------------------|------------|--------------------|--------------------|------------|
| 102  | RTV102-85ML<br>RTV102-300ML   | Paste    | 3 oz tube,<br>10.5 oz cartridge | High performance assembly. Meets FDA, MIL-A-46106, UL Recognized, UL File No. E-36952, UL 94 HB. | white        | 20                   | 500                     | 2.8 @ 60 Hz         | 450%       | 2.75               | 30                 | 400 g/min  |
| 103  | RTV103-85ML<br>RTV103-300ML   | Paste    | 3 oz tube,<br>10.5 oz cartridge |                                                                                                  | black        |                      |                         |                     |            |                    |                    |            |
| 108  | RTV108-85ML<br>RTV108-300ML   | Paste    | 3 oz tube,<br>10.5 oz cartridge |                                                                                                  | trans-lucent |                      |                         |                     |            |                    |                    |            |
| 112  | RTV112-85ML<br>RTV112-300ML   | Flowable | 3 oz tube,<br>10.5 oz cartridge | High performance assembly. Meets FDA, MIL-A-46106, group 1, type 2, UL File No. E-36952.         | white        | 20                   | 400                     | 2.8 @ 60 Hz         | 325%       | 2.20               | 25                 | 20,000 cps |
| 118  | RTV118-85ML<br>RTV118-300ML   | Flowable | 3 oz tube,<br>10.5 oz cartridge |                                                                                                  | trans-lucent |                      |                         |                     |            |                    |                    |            |
| 6708 | RTV6708-85ML<br>RTV6708-300ML | Paste    | 3 oz tube,<br>10.5 oz cartridge | Economical. Use for general purposes. UL HB recognition.                                         | trans-lucent | 25                   | 410                     | 2.9 @ 100 Hz        | 450%       | 1.57               | 18                 | 175 g/min  |

## Non-Corrosive (1 Part)

Electronics. Temperature range of -60°C to 205°C (-76°F to 401°F)

| No.  | Stock Number                   | Form          | Size                            | Application                                                                                                                                                                                                                         | Color        | Tack free time (min) | Dielectric str. (V/mil) | Dielectric constant | Elongation | Tensile str. (MPa) | Hardness (Shore A) | Viscosity  |
|------|--------------------------------|---------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|-------------------------|---------------------|------------|--------------------|--------------------|------------|
| 160  | RTV160-300ML                   | Pourable      | 10.5 oz cartridge               | For thin section PCB coating. UL HB Recognition.                                                                                                                                                                                    | white        | 240                  | 500                     | 2.8 @ 60 Hz         | 230%       | 1.86               | 25                 | 38,000 cps |
| 162  | RTV162-85ML<br>RTV162-300ML    | Paste         | 3 oz tube,<br>10.5 oz cartridge | Bonding capacitors, resistors and integrated circuits to PCBs, sealing exposed wires, faying surfaces, and connectors. Meets MIL-A-46146, group 1, type 1, UL File no. E-36952.                                                     | white        | 240                  | 450                     | 2.8 @ 60 Hz         | 400%       | 3.73               | 35                 | 350 g/min  |
| 167  | RTV167-85ML<br>RTV167-300ML    | Paste         | 3 oz tube,<br>10.5 oz cartridge | Mechanical or electrical bonding and insulating applications. Meets MIL-A-46146, group 1, type 1, UL File no. E-36952.                                                                                                              | light gray   | 240                  | 500                     | 2.8 @ 60 Hz         | 600%       | 5.49               | 37                 | 180 g/min  |
| 397  | TSE397C-100G,<br>TSE397C-333ML | Semi-flowable | 3.5 oz tube,<br>12 oz cartridge | Electronic sealing and coating, applications requiring fast tack free time and aggressive adhesion. Meets MIL-A-46146B corrosion test only.                                                                                         | trans-lucent | 10                   | 560                     | 2.9 @ 60 Hz         | 300%       | 1.1                | 20                 | 50,000 cps |
| 399  | TSE399C-100G,<br>TSE399C-333ML | Flowable      | 3.5 oz tube,<br>12 oz cartridge |                                                                                                                                                                                                                                     | trans-lucent | 10                   | 500                     | 2.9 @ 60 Hz         | 140%       | 1.3                | 30                 | 2,500 cps  |
| 5818 | RTV5818-300ML                  | Paste         | 10.5 oz cartridge               | Fast cure. For assembly applications requiring high productivity. UL Recognized. Primerless adhesion.                                                                                                                               | trans-lucent | 15                   | 426                     | 2.8 @ 100 Hz        | 500%       | 1.86               | 21                 | 360 g/min  |
| 1035 | 1035-85ML                      | Paste         | 3 oz tube                       | Weather proofing where power cords enter motors; as a gasket for leak resistant sealing; bonding of electronic components onto circuit boards; insulating. Non-corrosive, low odor, primerless. Meets MIL-A-46146, group 1, type 1. | trans-lucent | 15                   | 426                     | 2.8 @ 100 Hz        | 500%       | 1.86               | 21                 | 360 g/min  |

## Special Application (1 Part)

Automotive, Marine, Electrical, Electronics, Construction

| No.     | Stock Number                | Form     | Size                            | Application                                                                                                                                                                                                                                                  | Color | Tack free time (min) | Dielectric str. (V/mil) | Dielectric constant | Elongation | Tensile str. (MPa) | Hardness (Shore A) | Viscosity   |
|---------|-----------------------------|----------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------|-------------------------|---------------------|------------|--------------------|--------------------|-------------|
| 106     | RTV106-85ML<br>RTV106-300ML | Paste    | 3 oz tube,<br>10.5 oz cartridge | High temperature (260°C) encapsulating and sealing. Meets FDA 21CFR 177.2600, MIL-A-46106. UL Recognized, UL File No. E-36952, UL 95 HB.                                                                                                                     | red   | 20                   | 500                     | 2.8 @ 60 Hz         | 400%       | 2.55               | 30                 | 400 g/min   |
| 116     | RTV116-300ML                | Flowable | 10.5 oz cart.                   | For applications up to 260°C. Meets MIL-A-47040.                                                                                                                                                                                                             | red   | 30                   | 500                     | 2.8 @ 60 Hz         | 350%       | 2.45               | 46                 | 25,000 cps  |
| 133     | RTV133-300ML                | Paste    | 10.5 oz cartridge               | Sealing firewalls. Use as a flame retardant coating. Sealing switching devices, motors and high voltage transformers. UL V-1 and V-0 recognition.                                                                                                            | black | 60                   | 500                     | 2.8 @ 100 Hz        | 250%       | 4.51               | 46                 | 650 g/min   |
| 157     | RTV157-85ML                 | Paste    | 3 oz tube                       | High strength adhesive gasketing, maintenance and electrical insulation.                                                                                                                                                                                     | gray  | 45                   | 525                     | 2.9 @ 60 Hz         | 825%       | 6.21               | 28                 | 155 g/min   |
| 159     | RTV159-85ML                 | Paste    | 3 oz tube                       | Sealing applications requiring extremely high bond strength and high temp. (260°C) resistance.                                                                                                                                                               | red   | 45                   | 400                     | 2.8 @ 60 Hz         | 350%       | 7.07               | 20                 | 175 g/min   |
| 1000 NS | 1000N/S                     | Paste    | 10.5 oz cartridge               | <b>3M Fire Barrier.</b> Seals firewalls, conduits, pipes. ASTM E814 Through-Penetration Fire Test; ASTM E1966 Construction Joint Fire Test; ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G, A, O; CAN/CGSB 9.13-M87, Class MCG-2-25-A-L; UL Classified. | gray  | 10                   | 479                     | -                   | 600%       | -                  | 25                 | Thixotropic |



# RTV Silicones : 2 Part / Special Application

## Potting and Encapsulating Compounds

### General Use (2-Part)

Aerospace, Automotive, Electrical, Electronics, Marine.

Temperature range of -60°C to 205°C (-76°F to 401°F).

| No. | Stock Number            | Form              | Size                | Application                                                                                                                               | Color                   | Mix Ratio<br>(By weight) | Viscosity<br>(cps) | Hardness<br>(Shore A) | Tensile str.<br>(MPa) | Elongation | Dielectric<br>str. (V/mil) | Dielectric<br>constant | Work life (hours)<br>@ 25°C (77°F) | Cure Time<br>@ 25°C (77°F)        |
|-----|-------------------------|-------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------|--------------------|-----------------------|-----------------------|------------|----------------------------|------------------------|------------------------------------|-----------------------------------|
| 11  | RTV11-1P,<br>RTV11-1G   | Flowable          | 1 pint,<br>1 gallon | Medical molds/instruments, high voltage power supply potting, general electrical potting; primer SS4155 required. Meets FDA requirements. | white                   | 100:0.5                  | 11,000             | 41                    | 2.06                  | 160%       | 515                        | 3.3 @<br>1 kHz         | 1.5                                | 24 hours                          |
| 12  | RTV12A-1G               | Flowable          | 1 gallon            | Room temp. cure, primerless adhesion. Requires curing agent RTV12C-1P.                                                                    | trans-<br>lucent        | 20:1                     | 1,500              | 18                    | -                     | 200%       | 400                        | 3.0 @<br>1 kHz         | 1.6                                | 24 hours                          |
| 21  | RTV21-1G                | Flowable          | 1 gallon            | Aerospace thermal insulation, thick-section potting, pour-in-place gasketing; primer SS4004P required                                     | pink                    | 100:0.5                  | 26,000             | 45                    | 2.16                  | 180%       | 420                        | 3.8 @<br>1 kHz         | 1                                  | 24 hours                          |
| 615 | RTV615-1P,<br>RTV615-1G | Flowable          | 1 pint,<br>1 gallon | Solar cell potting, optical instruments, applications require visual identification of potted assemblies; primer SS4155 required          | opti-<br>cally<br>clear | 10:1                     | 4,000              | 44                    | 6.37                  | 160%       | 500                        | 2.89 @<br>1 kHz        | 4                                  | 7 days<br>(4 h @ 65°C<br>/ 149°F) |
| 630 | RTV630-1P               | Self-<br>leveling | 1 pint              | Encapsulation applications requiring high tensile strength; primer SS4155 required.                                                       | blue                    | 10:1                     | 150,000            | 60                    | 5.69                  | 250%       | 450                        | 3.2 @<br>1 kHz         | 4                                  | 7 days<br>(4 h @ 65°C<br>/ 149°F) |



## Potting and Encapsulating Compounds

### Extreme High temp (2-Part)

Main Industries: Aerospace, Automotive; Electrical, Electronics, Marine, Communication/Broadcasting.

Temperature range of -54°C to 260°C (-60°F to 500°F)

| No. | Stock Number          | Form     | Size                | Application                                                                                                                                                         | Color | Mix Ratio | Viscosity<br>(cps) | Hardness<br>(Shore A) | Tensile str.<br>(MPa) | Elongation | Dielectric<br>str. (V/mil) | Dielectric<br>constant | Work life (hours)<br>@ 25°C (77°F) | Cure Time<br>@ 25°C (77°F)        |
|-----|-----------------------|----------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|--------------------|-----------------------|-----------------------|------------|----------------------------|------------------------|------------------------------------|-----------------------------------|
| 31  | RTV31-1P              | Flowable | 1 pint              | Potting surge protectors on telephone poles, potting industrial filters, high temp. electrical potting applications, mechanical protection; primer SS4004P required | red   | 100:0.5   | 25,000             | 54                    | 5.98                  | 170%       | 430                        | 4.4 @<br>1 kHz         | 2                                  | 24 hours                          |
| 60  | RTV60-1P,<br>RTV60-1G | Flowable | 1 pint,<br>1 gallon | Aerospace applications such as potting, encapsulating, coating and cushioning; primer SS4155 required                                                               | red   | 100:0.5   | 47,000             | 57                    | 6.86                  | 120%       | 450                        | 4.0 @<br>1 kHz         | 2                                  | 24 hours                          |
| 88  | RTV88-1P,<br>RTV88-1G | Paste    | 1 pint,<br>1 gallon | Potting surge protectors, aerospace applications such as sealing, bonding and gasketing on vertical or overhead surfaces; primer SS4179 required                    | red   | 100:0.5   | 880,000            | 58                    | 5.79                  | 120%       | 440                        | 4.3 @<br>1 kHz         | 34                                 | 24 hours                          |
| 560 | RTV560-1G             | Flowable | 1 gallon            | Aerospace applications such as potting, sealing and bonding, where extreme high/low temp. service is required                                                       | red   | 100:0.5   | 30,000             | 55                    | 4.71                  | 120%       | 540                        | 3.9 @<br>1 kHz         | 21/4                               | 7 days<br>(4 h @ 65°C<br>/ 149°F) |

## RTV Silicone Adhesive Sealant-Thermally Conductive

| No.  | Stock Number  | Form             | Size       | Application                                                                                                                                                                                                                                                     | Color        | Mix Ratio   | Thermal Cond. W/m·K | Mixed Viscosity (cps) | Hardness (Type A) | Tensile Str. (MPa) | Elongation | Dielectric str. (V/mil) | Dielectric constant | Cure Time @ 25°C (77°F)                         |
|------|---------------|------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|---------------------|-----------------------|-------------------|--------------------|------------|-------------------------|---------------------|-------------------------------------------------|
| 3331 | TSE3331-2QT   | Flowable, 2 Part | 2 quart    | Potting/encapsulation of power supply/transformer assemblies requiring good thermal dissipation. UL94 V-0 recognition. Heat cure only, primerless adhesion.                                                                                                     | gray         | 1:1         | 0.63                | 3,500                 | 60                | 3.24               | 50%        | 500                     | 3.3 @ 1 kHz         | 10 min @ 100°C (212°F)<br>5 min @ 125°C (256°F) |
| 3941 | TSE3941-333ML | Paste, 1 Part    | 12 oz tube | White, thermally conductive paste adhesive sealant. UL94 V-1 recognition (File E56745). Neutral cure. UL recognized, flame retardant, non-corrosive sealant. Meets MIL-A-46146B corrosion only. Offers fast cure, fast tack free time, and aggressive adhesion. | white        | n/a, 1 part | 0.83                | paste                 | 60                | 3                  | 100%       | 560                     | 4.0 @ 60 Hz         | 24 hours<br>5 min. tack free                    |
| 1032 | 1032-85ML     | Paste, 1 Part    | 3 oz tube  | White, thermally conductive paste adhesive sealant. UL94 V-1 recognition (File E56745). Neutral cure. UL recognized, flame retardant, non-corrosive sealant. Meets MIL-A-46146B corrosion only. Offers fast cure, fast tack free time, and aggressive adhesion. | trans-lucent | n/a, 1 part | 0.83                | paste                 | 60                | 3                  | 100%       | 560                     | 4.0 @ 60 Hz         | 24 hours<br>5 min. tack free                    |

## Primer Guide

### 1-Part RTV Silicones

One-part RTV silicone products have adhesion promoters in their formulation and consequently have good adhesion to a variety of substrates. For 1-part products, it is generally suggested that testing be done without a primer first and if adhesion is acceptable then no primer is required.

### 2-Part RTV Silicones

Generally, two-part RTV silicone products do not have adhesion promoters in their formulation and consequently have minimal adhesion to substrates. Two-part products have adhesion that is usually acceptable for potting or encapsulating applications but is not sufficient for many sealing or adhering applications. If better adhesion is required, a primer can be used.

### Product Availability

|         |                                                                                                                                                                | Specific Gravity | Solids Content | Solvents                                      | Dry Time (min.) | Use with                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------|-----------------------------------------------|-----------------|---------------------------------|
| SS4004P | General purpose, pink in color to help identify areas where primer has been applied. Meets MIL-A-46106B, MIL-A-46146B, MIL-S-23586E.                           | 0.85             | 15%            | Acetone<br>Isopropanol<br>Xylene<br>N-butanol | 30              | 1 & 2 Part<br>Condensation cure |
| SS4044P | General purpose, clear, can be used in food contact applications where FDA regulations apply. Meets MIL-A-46106B, MIL-A-46146A, MIL-A-46146B, MIL-S-23586E.    | 0.85             | 15%            | Acetone<br>Isopropanol<br>Xylene<br>N-butanol | 30              | 1 & 2 Part<br>Condensation cure |
| SS4120  | Clear, most suitable when optical clarity is required, can be used in food contact applications where FDA regulations apply. Meets MIL-A-46106B, MIL-A-46146B. | 0.82             | 3%             | Ethanol<br>Methanol                           | 30              | 1 & 2 Part<br>Addition          |
| SS4155  | General purpose, blue, forms chalky white haze when dry                                                                                                        | 0.85             | 10%            | Mineral Spirits                               | 30              | All                             |
| SS4179  | Most suitable for plastic substrates, can be used in food contact applications where FDA regulations apply                                                     | 0.98             | 6%             | Ethyl acetate<br>Toluene<br>Methanol          | 15              | 1 Part<br>Condensation          |

## Translucent Silicone Grease

8462



A water repellant, non-melting, dielectric grease lubricant that provides superior protection against corrosion and oxidation.

- Excellent dielectric properties
- Prevents high voltage arcing
- Will not harden
- Electronic Grade
- Non-corrosive
- Meets MIL S-8660
- Excellent oxidation resistance and thermal stability
- Superior hydrolytic stability

M.G. Chemicals Silicone Grease is an amorphous fumed, silica thickened, polysiloxane based compound. Provides superior corrosion protection. Lubricates and protects against moisture on electrical systems and automotive assemblies. Compatible with most plastics and elastomers. Great as a lubricant and moisture barrier on plastic pipe and o-ring assemblies, gaskets, and connectors. Use M.G. Translucent Silicone Grease for lubrication of plastic and rubber parts to provide a moisture barrier or seal. Offers excellent dielectric properties.

### Specifications

| Property                                     |                                          |
|----------------------------------------------|------------------------------------------|
| Color                                        | Translucent                              |
| Penetration worked                           | 320                                      |
| Temperature range                            | -50 to 250 °C (-58 to 482 °F)            |
| Water resistance                             | Excellent                                |
| Evaporation 24 hours<br>200°C (392°F) % Max. | 2                                        |
| Bleed 24 hours                               | 1                                        |
| Drop point                                   | None                                     |
| Dielectric Strength, @ .01 Inch Gap          | 500 V / mil                              |
| Arc Resistance                               | 120 sec                                  |
| Resistivity @ 23°C (73°F)                    | 1 x 10 <sup>13</sup> Ohm • cm            |
| Specific gravity                             | 0.989                                    |
| Thermal conductivity                         | 0.09 BTU / Ft <sup>2</sup> / hr / F / Ft |

### Available Sizes

| 8462 | Catalog No. | Size         | Format |
|------|-------------|--------------|--------|
|      | 8462-85ML   | 85 ml (3 oz) | Tube   |
|      | 8462-1P     | 1 pint       |        |

## White Lithium Grease

8461

A general multi purpose lubricant suitable for use on all moving parts. Provides protection against corrosion and oxidation.



Aerosol has extension tube for hard to reach areas.

- Electronic Grade
- Premium Quality
- Will not harden
- Excellent on metal to metal applications: hardened steel, bronze, aluminum

Excellent general purpose lubricant. Provides superior protection against corrosion and oxidation. Reduces friction and wear on all moving parts. Great for the lubrication and maintenance of VCRs, gear teeth, cams, and roller guide tracks.

### Available Sizes

| 8461 | Catalog No. | Size        | Format  |
|------|-------------|-------------|---------|
|      | 8461-140G   | 140g (5 oz) | Aerosol |
|      | 8461-85ML   | 85ml (3 oz) | Tube    |
|      | 8461-1P     | 1 pint      | Tub     |

## Carbon Conductive Grease 846

Lubricates and improves electrical connections between sliding surfaces, while providing protection from moisture and corrosion. Excellent for use on switches and EMI shielding applications.



- Prevents normally closed switches from corroding in place
- Reduces make-break arching and pitting of switch contact surfaces
- Improves the connection between irregular or pitted contact surfaces
- Reduces EMI noise by maintaining a continuous path between conductive surfaces
- Thermally stable up to 200°C (392°F)

### Available Sizes

| 846 | Catalog No. | Size            | Format |
|-----|-------------|-----------------|--------|
|     | 846-80G     | 80g (2.8 oz)    | Tube   |
|     | 846-1P      | 0.47 L (1 pint) | Liquid |

## Nutrol Control Cleaner 401B

Use when cleaning and lubricating controls.



Contains a light, electronic grade, mineral oil lubricant. Not for use directly on electronic circuits.

Cleans and lubricates controls, locks, hinges, selector switches, office equipment, power tools, clock mechanisms, and delicate mechanical equipment.

- ▶ FAST DRY
- ▶ SAFE ON PLASTICS
- ▶ MINERAL OIL LUBRICATION

### Available Sizes

| 401B | Catalog No. | Size         | Format  |
|------|-------------|--------------|---------|
|      | 401B-140G   | 140g (5 oz)  | Aerosol |
|      | 401B-340G   | 340g (12 oz) | Aerosol |



## Pen Oiler with Teflon 8471

Lubricates with micro-tip accuracy

Convenient needle tip applicator allows drop-at-a time dispensing for precision work. Contains a long lasting super lubricant with teflon that penetrates and prevents rust and corrosion. Hundreds of uses. Lubricates everything from appliances to vending machines. Can be used in temperatures from -51°C to 260°C (-60°F to 500°F).



### Available Sizes

| 8471 | Catalog No. | Size         | Format |
|------|-------------|--------------|--------|
|      | 8471-7ML    | 7ml (0.2 oz) | Pen    |

# Thermal Management

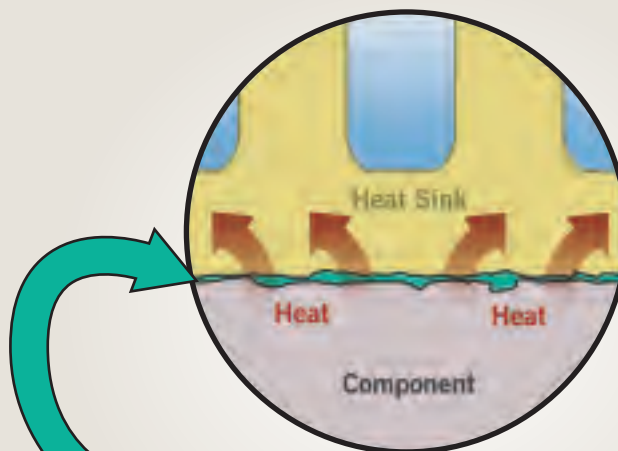
## Why do you need a Heat Transfer Compound?

Improves thermal connections between heat sinks and components.

Use Heat Transfer Compound on all electric and electronic devices where efficient heat transfer cooling through thermal coupling is required:

- ▶ Semiconductor mounting devices
- ▶ Thermal joints
- ▶ Ballast heat transfer mediums
- ▶ Power resistor mountings
- ▶ Thermocouple wells
- ▶ Transistor diodes
- ▶ Silicone rectifier base and mounting studs

## How does a Heat Sink Compound work?



By filling in surface imperfections of the heat sink and component, the compound effectively transfers heat into the heat sink.

## Non-Silicone Heat Transfer Compound 8610

This Non Silicone Heat Transfer Compound is designed to eliminate the potential problems of silicone-based compounds caused by migration and component contamination. Designed for use in transferring heat away from electrical and electronic devices such as transistors, power diodes, semi-conductors, ballasts and thermocouple wells.

- ▶ High thermal conductivity
- ▶ High dielectric constant
- ▶ High dissipation factor
- ▶ Use with heat sinks or metal chassis
- ▶ Will not dry or harden
- ▶ Meets MIL-DTL-47113D

### Available Sizes

|      | Catalog No. | Size                     | Format  |
|------|-------------|--------------------------|---------|
| 860  | 860-4G      | 4g x 100 (0.14 oz x 100) | Singles |
|      | 860-60G     | 60g (2oz)                | Tub     |
|      | 860-150G    | 150g (5.2 oz)            | Tube    |
|      | 860-1P      | 473 ml (1 pint)          | Tub     |
| 8610 | 860-1GAL    | 1 gal (20 lbs.)          | Pail    |
|      | 8610-60G    | 60g (2 oz)               | Tub     |
|      | 8610-1P     | 473 ml (1 pint)          | Tub     |

## Silicone Heat Transfer Compound 860

Designed for use in transferring heat away from electrical and electronic devices such as transistors, power diodes, semi-conductors, ballasts and thermocouple wells.

### Specifications

| Physical Properties           | Test Method | Non Silicone           | Silicone                                   |
|-------------------------------|-------------|------------------------|--------------------------------------------|
| Appearance                    | Visual      | Off White/Smooth Paste | White Paste                                |
| Consistency                   | ASTM D-217  | 300-320                | 300-320                                    |
| Specific Gravity@ 25°C (77°F) | -           | 2.5 min.               | 2.3 min                                    |
| Bleed % 24 hrs @200°C         | FTM-321     | 1.0% max               | 2.0% max                                   |
| Evaporation %24hrs @200°C     | FTM-321     | 2.0% max               | 2.0% max                                   |
| Dropping Point                | ASTM D-566  | > 500°F (260°C)        |                                            |
| Max. Operating Temp.          | -           | 200°C (392°F)          | 200°C (consistent)<br>300°C (intermittent) |

| Electrical Properties           |                                    |                                                      |                                 |
|---------------------------------|------------------------------------|------------------------------------------------------|---------------------------------|
| Thermal conductivity            | Hot Wire Method<br>Heat Flow #36°C | 18.48 x 10 <sup>-4</sup><br>(K Factor, Cal/Sec.cm°K) | 0.657 W/m °K                    |
| Dielectric Strength (0.05 GAP)  | ASTM D-149                         | 350 V/mil                                            | 400 V/mil                       |
| Dielectric Constant (@ 1000 Hz) | ASTM D-150                         | 4.4                                                  | 3.81                            |
| Dissipation Factor (@ 1000Hz)   | ASTM D-150                         | 0.0021                                               | 0.0032                          |
| Resistivity (Room Temp.)        | ASTM D-150                         | 6.38 x 10 <sup>13</sup> ohm •cm                      | 1.5 x 10 <sup>15</sup> ohm • cm |

# PROTOTYPING

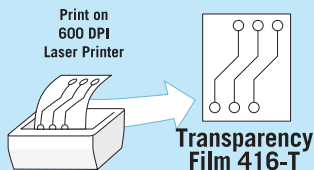


# Prototyping : The Process

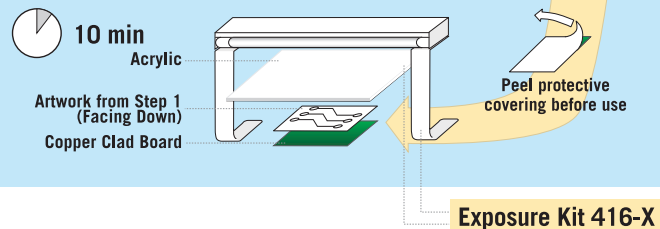
Use the M.G. Chemicals system to make your own circuit boards quickly and easily. Perfect for prototyping, hobbyists, and educational applications.

Technicians will be impressed with the high resolution, while amateurs will be impressed with the simplicity of our system.

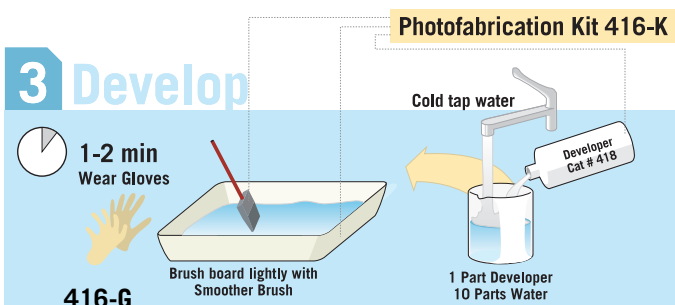
## 1 Create Artwork



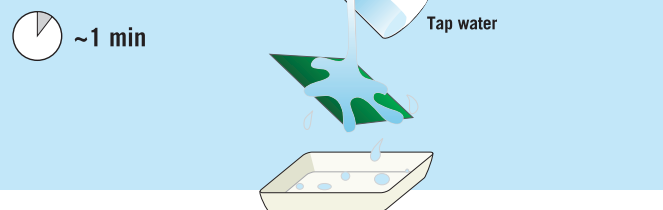
## 2 Expose



## 3 Develop

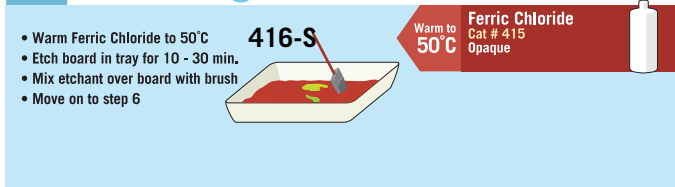


## 4 Rinse

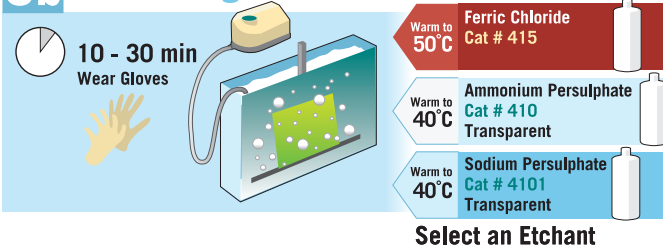


Select Step 5 based on which kit you are using:

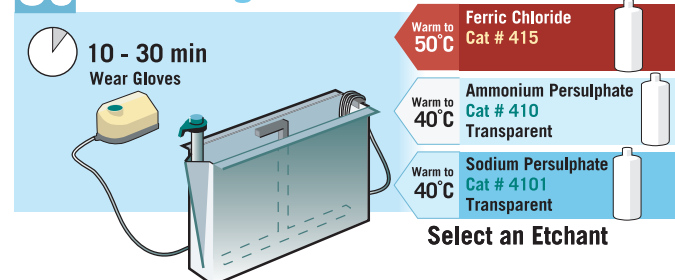
### 5a Etch (Using Photofabrication Kit 416-K)



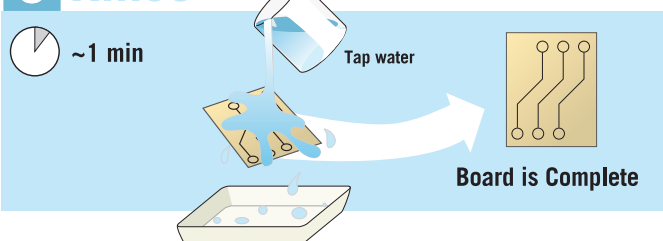
### 5b Etch (Using Process Kit 416-ES)



### 5c Etch (Using Process Kit 416-E)



## 6 Rinse



# Prototyping : Copper Clad Boards

## Copper Clad Board

### Standard 500 SERIES



A 1/16", 1/32", 1/64" laminate with 1 ounce copper. This flame retardant laminate is made of continuous woven glass cloth impregnated with epoxy resin. Developed specifically for the circuit processing industries' requirements. Provides ultraviolet blocking and fluorescence when using automated optical inspection (AOI).

| Format                      | Cat. No. | Approximate Size           |
|-----------------------------|----------|----------------------------|
| Single sided 1/16" (1.60mm) | 503      | 3"x 5" (76mm x 127mm)      |
|                             | 506      | 4"x 6" (101mm x 152mm)     |
|                             | 509      | 6"x 6" (152mm x 152mm)     |
|                             | 512      | 6"x 9" (152mm x 228mm)     |
|                             | 515      | 8"x 10" (203mm x 254mm)    |
|                             | 521      | 12" x 12" (304mm x 304mm)  |
|                             | 575      | 24" x 36" (609mm x 914mm)  |
|                             | 580      | 36" x 48" (914mm x 1219mm) |
| Double sided 1/16" (1.60mm) | 550      | 6"x 6" (152mm x 152mm)     |
|                             | 555      | 12" x 12" (304mm x 304mm)  |
|                             | 576      | 24" x 36" (609mm x 914mm)  |
|                             | 585      | 36" x 48" (914mm x 1219mm) |
| Single sided 1/32" (0.80mm) | 586      | 4"x 6" (101mm x 152mm)     |
|                             | 588      | 6"x 9" (152mm x 228mm)     |
|                             | 590      | 12" x 12" (304mm x 304mm)  |
| Double sided 1/32" (0.80mm) | 587      | 4"x 6" (101mm x 152mm)     |
|                             | 589      | 6"x 9" (152mm x 228mm)     |
|                             | 591      | 12" x 12" (304mm x 304mm)  |
|                             | 596      | 36" x 48" (914mm x 1219mm) |
| Double sided 1/64" (0.40mm) | 598      | 6"x 9" (152mm x 228mm)     |

### Positive Presensitized 600 SERIES



Available in 1/16" (62 mil) and 1/32" (30 mil) laminate with 1 ounce copper. Provides high resolution and excellent fine line control. Ideal for prototypes, small production runs, student training.

| Format                      | Cat. No. | Approximate Size        |
|-----------------------------|----------|-------------------------|
| Single sided 1/16" (1.60mm) | 603      | 3"x 5" (75mm x 125mm)   |
|                             | 606      | 4"x 6" (100mm x 150mm)  |
|                             | 609      | 6"x 6" (150mm x 150mm)  |
|                             | 612      | 6"x 9" (150mm x 230mm)  |
|                             | 630      | 8"x 12" (200mm x 300mm) |
| Double sided 1/16" (1.60mm) | 650      | 6"x 6" (150mm x 150mm)  |
|                             | 660      | 6"x 9" (150mm x 230mm)  |
| Single sided 1/32" (0.80mm) | 687      | 4"x 6" (100mm x 150mm)  |
|                             | 689      | 6"x 9" (150mm x 230mm)  |
| Double sided 1/32" (0.80mm) | 690      | 6"x 9" (150mm x 230mm)  |
| Double sided 1/64" (0.40mm) | 698      | 6"x 9" (152mm x 228mm)  |

## Paper Phenolic Positive Presensitized CCB

### 1/32" laminate with one ounce copper

Easily cut this material into custom sizes.

Score on both sides with a utility knife and snap in half.

| Format                      | Cat. No. | Size                     |
|-----------------------------|----------|--------------------------|
| Single sided 1/32" (0.80mm) | 675      | 12"x 18" (300mm x 450mm) |
| Double sided 1/32" (0.80mm) | 676      | 8"x 12" (200mm x 300mm)  |

## Exposure Kit 416-X

Convenient kit includes major components required to expose presensitized copper-clad boards.

Includes:

- Fluorescent light fixture with stand (brackets)
- Daylight fluorescent tube
- Clear acrylic weight for artwork
- Complete instructions



### Available Sizes

| 416X | Catalog No. | Size          | Format |
|------|-------------|---------------|--------|
|      | 416-X       | Fits 17" tube | Kit    |

## Photofabrication Kit 416-K

Produce printed circuit boards using the positive photofabrication process.

Contains:

- One 3"x5" presensitized single sided PCB Cat# 603
- One 4"x6" presensitized single sided PCB Cat# 606
- One 6"x6" presensitized single sided PCB Cat# 609
- One 500ml bottle Developer Cat# 418
- One 500ml bottle Ferric Chloride Cat# 415
- Two Foam Brushes Cat# 416-S
- Plastic development tray
- Rubber gloves
- Instruction sheet

### Additional items Required

- Exposure Kit Cat# 416-K
- Etchant tank, or glass tray, or plastic tray (for etching purposes)
- Artwork laser printed on a transparency, Cat# 416-T
- Eye protection



### Available Sizes

| 416K | Catalog No. | Size                             | Format |
|------|-------------|----------------------------------|--------|
|      | 416-K       | Tank size L x W x H: 11"x 7"x 5" | Kit    |

## Etch Resist Pen 416-RP



For drawing or touching up etch resist circuits on PC boards and on positive films. Draws lines 1/32" wide. Dries instantly.

### Available Sizes

| 416RP | Catalog No. | Size      | Format |
|-------|-------------|-----------|--------|
|       | 416-RP      | 5.5" long | Pen    |

## Transparency Film 416-T



Letter size (8 1/2" x 11") heat stabilized film sheets for use in most laser printers. For use in producing the artwork required for the photofabrication process.

### Available Sizes

| 416T | Catalog No. | Size       | Format               |
|------|-------------|------------|----------------------|
|      | 416-T       | 8.5" x 11" | Envelope of 5 sheets |

## Developer 418

For use with MG Chemicals' 600 series positive presensitized boards. Concentrated formulation. Dilute one part developer to ten parts of tap water. The image appears quickly as the exposed photo resist is dissolved. After developing is complete, rinse with water and the board is ready for etching. Use 416-S foam brush for best results.

Also available in the 416-K Photofabrication Kit



### Available Sizes

|            | Catalog No. | Size          | Format |
|------------|-------------|---------------|--------|
| <b>418</b> | 418-500ML   | 500ml (17 oz) | Liquid |

## Liquid Tin

421

Quickly tinplates copper circuits on PC boards in 5 minutes or less at room temperature.

- Provides excellent solderability
- Protects against oxidation
- No mixing or dilution required
- For commercial / industrial use only



### Directions

Clean PC Board thoroughly. Pour Liquid Tin into an appropriate size tray constructed of polypropylene, polyethylene, or similar material. Do not use stainless steel. Immerse PC Board in the solution for 3 to 5 minutes. Rinse with warm water and dry.

### Available Sizes

|            | Catalog No. | Size          | Format |
|------------|-------------|---------------|--------|
| <b>421</b> | 421-500ML   | 500ml (17 oz) | Liquid |

## Conductive Print

- Quick drying
- Durable acrylic base pigmented with high purity flakes
- Excellent for repairing and modifying printed circuits and EMI / RFI shielding applications



## Silver Print 842

Resistivity: 0.2 Ohm · mil  
Also available in a micro-tip dispensing pen format.  
Silver pigment provides excellent corrosion resistance

## Silver Coated Copper Print 843

Resistivity: 0.4 Ohm · mil



## Nickel Print 840

Resistivity: 0.7 Ohm · mil

### Silver Print Pen 8420-P



### Available Sizes

|            | Catalog No. | Size          | Format        |
|------------|-------------|---------------|---------------|
| <b>842</b> | 842-20G     | 20g (0.75 oz) | Liquid        |
|            | 842-250G    | 250g (8.8 oz) | Liquid - Bulk |
|            | 8420-P      | 8.5g (0.3 oz) | Microtip Pen  |
| <b>843</b> | 843-250G    | 250g (8.8 oz) | Liquid        |
|            | 843-900ML   | 900ml (30 oz) | Liquid - Bulk |
| <b>840</b> | 840-20G     | 20g (0.75 oz) | Liquid        |
|            | 840-250G    | 250g (8.8 oz) | Liquid - Bulk |

# Prototyping : Etching Kits

## Premium Etching Kit 416-E

- Etch copper clad circuits professionally
- Accommodates two 8" x 12" double-sided copper clad boards



### Contains:

- 7 litre capacity heavy-duty polyethylene etching tank
- Sturdy mounting bracket
- Clear acrylic lid
- Heavy duty air pump
- Sparging unit with 3 way adjustable air manifold
- Requires a minimum of 7 liters of etching solution: 415-4L, 410-1KG, or 4101-1KG.

### Available Sizes

| 416E | Catalog No. | Format |
|------|-------------|--------|
|      | 416-E       | Kit    |

### Replacement Parts

#### Replacement Parts

| Catalog Number | Quantity | Description                                                                                                                                                               |
|----------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 416-AP         | 1        | Air pump<br><i>Replacement Air Pump for the 416-E Professional Etching Kit</i>                                                                                            |
| 416--AT        | 1        | Tubing<br><i>Replacement Air Tubing for the 416-E Professional Etching Kit</i>                                                                                            |
| 416-B          | 1        | Bulb<br><i>The 416B is a direct replacement bulb for the 416-X Exposure Kit.</i>                                                                                          |
| 416-D          | 1        | Hose<br><i>Replacement part for the 416-E Professional Etching Kit</i>                                                                                                    |
| 416-G          | 10 pack  | Gloves<br><i>Vinyl Gloves - Excellent for use with all corrosive chemicals.</i>                                                                                           |
| 416-H          | 1        | Heater<br><i>200 watt side mounting immersion heater with quartz element and adjustable temperature control. Replacement part for the 416-E Professional Etching Kit.</i> |

## Etching Process Kit - Student 416-ES

- Etch copper clad circuits professionally
- Accommodates two 8"x 9" double sided copper clad boards



Ideal for students and hobbyists. An inexpensive etching system with professional quality output.

### Contains:

- 5 liter heavy duty polyethylene etching tank
- Air pump and tubing
- Sparging unit
- Bag of vinyl gloves
- Complete instructions

Also requires a minimum of 4 liters of Ferric Chloride (Cat# 415-4L). There must be enough Ferric Chloride to completely cover your board.

**Do not dilute ferric chloride with water.**



### Available Sizes

| 416ES | Catalog No. | Format |
|-------|-------------|--------|
|       | 416-ES      | Kit    |

## Ferric Chloride 415

### Liquid

- Copper Etchant
- More aggressive than persulphate alternative
- Ready to use
- Can be stored and reused

Ready to use solution designed for etching printed circuit boards and other metals. Recommended for use with M.G. Chemicals Professional Etching Process Kit (416-E) and M.G. Economy Etching Process Kit (416-ES).



### Powder

- Easy to mix.
- No heating required. Solution self heats to ideal operating temperature during mixing process (60°C / 140°F)
- Mixed solution can be stored and reused.
- Just as effective as Liquid Ferric Chloride.
- Easy to transport due to light-weight of powder.



A dry concentrate version that mixes with water to produce 1 liter of etchant solution, enough to etch 400 sq. inches of 1 oz boards.

#### Directions of Use

Immerse copper board in solution and agitate until etching action is completed. Ferric Chloride can etch up to a maximum of 100g of copper per liter of solution (1.3 square meters or 14 square meters of 1 oz copper clad board). The etching process can be sped up by heating the solution to a temperature no higher than 55°C (135°F). Ferric Chloride is compatible with the 416-E and 416-ES kits. **Do not dilute with water.**

#### Available Sizes

| 415 | Catalog No. | Size          | Format |
|-----|-------------|---------------|--------|
|     | 415-500ML   | 500ml (17 oz) | Liquid |
|     | 415-1L      | 1L (34 oz)    | Liquid |
|     | 415-4L      | 4L (1 gal)    | Liquid |
|     | 415-20L     | 18.9L (5 gal) | Liquid |
|     | 415-115G    | 155 g (4 oz)  | Powder |

## Sodium Persulphate 4101

- Transparent solution allows visual inspection
- Will not stain carpet or clothing
- Compatible with etch resist pens
- Alternative to ferric chloride
- 1 kg of solid crystals makes 4 liters of solution



#### Available Sizes

| 4101 | Catalog No. | Size           | Format   |
|------|-------------|----------------|----------|
|      | 4101-1KG    | 1kg (2.2 lbs.) | Crystals |
|      | 4101-25KG   | 25kg (55 lbs.) | Crystals |

## Ammonium Persulphate 410

- Transparent solution allows visual inspection
- Will not stain carpet or clothing
- Not compatible with etch resist pens
- Alternative to ferric chloride
- 1 kg of solid crystals makes 4 liters of solution



#### Available Sizes

| 410 | Catalog No. | Size           | Format   |
|-----|-------------|----------------|----------|
|     | 410-1KG     | 1kg (2.2 lbs.) | Crystals |
|     | 410-25KG    | 25kg (55 lbs.) | Crystals |

# INTRODUCING MG CHEMICALS APPGUIDES

Expand your knowledge of product applications.



## MG Chemicals AppGuides

One company. Many solutions.

### What is an AppGuide?

An AppGuide is a monthly flyer that we at M.G. Chemicals have developed for you to use as a training tool for both your sales staff and your customers. Each month, we will be featuring a product or product category and highlighting its characteristics and possible applications. We would like to help your sales staff understand the intended applications for specific products. After all, it is difficult to sell what we don't understand.

### Make it your own!\*

\*Distributors only



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To be added to the email list, please forward your request to [info@mgchemicals.com](mailto:info@mgchemicals.com)

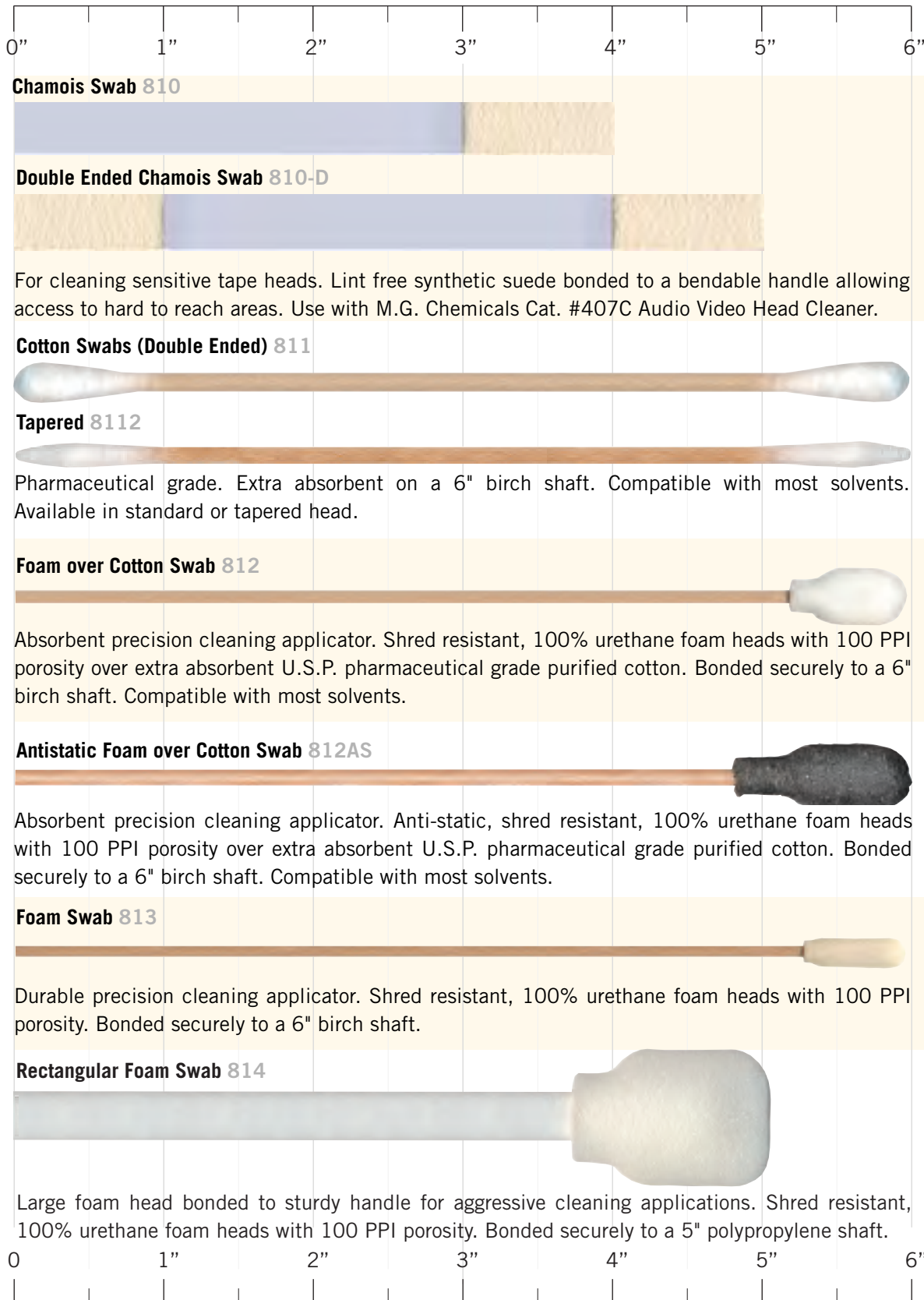
### Have a unique application you want to share?

How do you use MG products? We'd love to hear from you. Email [info@mgchemicals.com](mailto:info@mgchemicals.com) with your application.

### What do you want on the next AppGuide?

Is there a product you would like to know more about? Let us know! Email [info@mgchemicals.com](mailto:info@mgchemicals.com) with your request. At MG Chemicals, your opinion matters.

## Scale: Actual Sizes



### Available Sizes

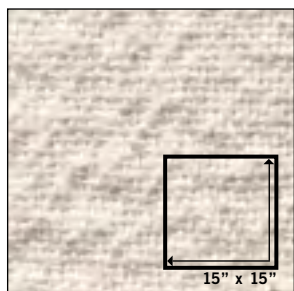
| Catalog No.                             | Qty. per Bag |
|-----------------------------------------|--------------|
| <b>Chamois Swabs</b>                    |              |
| 810-15                                  | 15           |
| 810-50                                  | 50           |
| 810-500                                 | 500          |
| <b>Double Headed Chamois Swabs</b>      |              |
| 810D-15                                 | 15           |
| 810D-50                                 | 50           |
| 810D-500                                | 500          |
| <b>Cotton Swab (Double Ended)</b>       |              |
| 811-100                                 | 100          |
| <b>Tapered (Double Ended)</b>           |              |
| 8112-100                                | 100          |
| <b>Foam over Cotton Swab</b>            |              |
| 812-10                                  | 10           |
| 812-50                                  | 50           |
| 812-250                                 | 250          |
| 812-1000                                | 1000         |
| <b>Antistatic Foam over Cotton Swab</b> |              |
| 812AS-10                                | 10           |
| 812AS-50                                | 50           |
| 812AS-250                               | 250          |
| 812AS-1000                              | 1000         |
| <b>Foam Swab</b>                        |              |
| 813-10                                  | 10           |
| 813-50                                  | 50           |
| 813-250                                 | 250          |
| 813-1000                                | 1000         |
| <b>Rectangular Foam Swab</b>            |              |
| 814-10                                  | 10           |
| 814-50                                  | 50           |
| 814-250                                 | 250          |
| 814-1000                                | 1000         |

## Presaturated IPA Wipe 824W



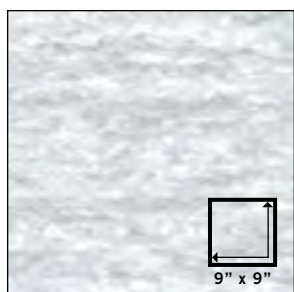
Zero residue, water free all purpose cleaning wipe. 99.953% pure anhydrous. Safe on plastics and elastomers. Dimensions: 8" x 5".

## General Purpose Cotton Wipe 830



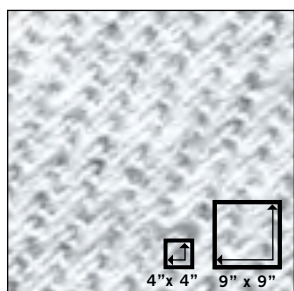
100% natural cotton, re-usable, pre-washed, super absorbent. Absorbs water in 3.5 sec., and light oil instantaneously. Dimensions: 15" x 15".

## Hydro Wipe 8282



Made from an extra strength, super absorbent blend of hydro-entangled polyester / cellulose. Resistant to solvent, lint and particle free, class 1000 cleanroom compliant. Dimensions 9" x 9".

## Twillwipe 829



Low linting 100% cotton fabric. 4" x 4" and 9" x 9" dimensions available.

## Tub Wipes 8241-T

70 / 30 Alcohol Blend

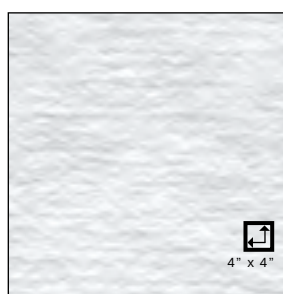
General all-purpose cleaner. Safe on plastics. Convenient tub dispenses presaturated wipes.



For use on:

- SMT Stencils
- Office and medical equipment
- CD / DVD discs

## Optiwipe 828-4X4



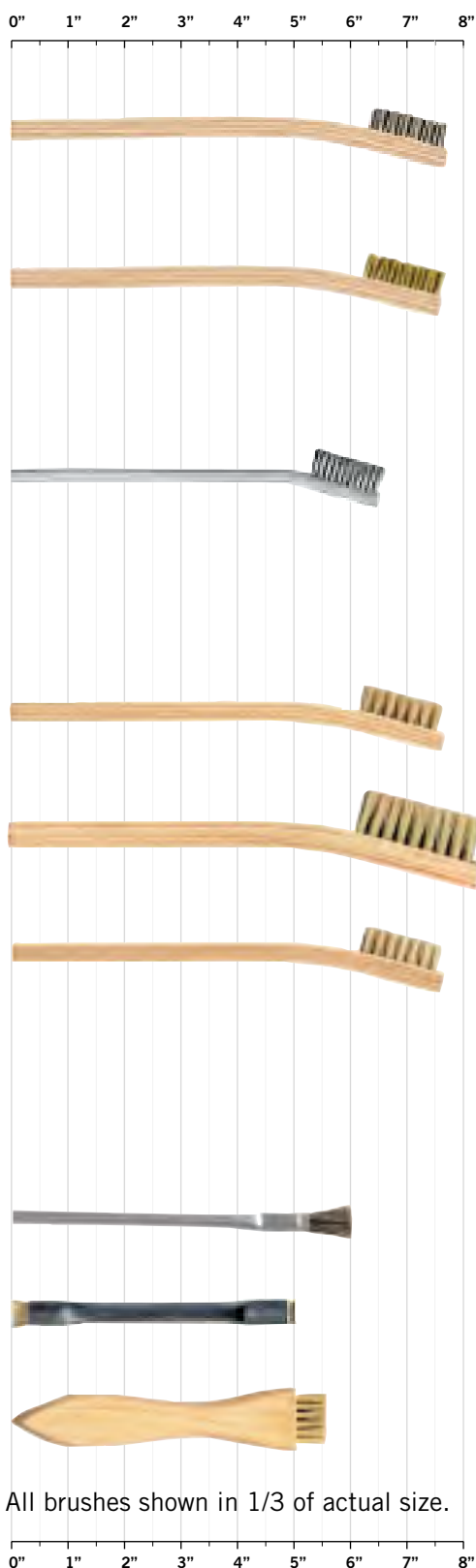
Zero lint. Super soft fabric comprised of hydroentangled polyester fibers. Dimensions 4" x 4"

### Available Sizes

|              | Catalog No. | Size                        | Format        |
|--------------|-------------|-----------------------------|---------------|
| <b>824W</b>  | 824-W       | 20.3 cm x 12.7 cm (8" x 5") | Single        |
|              | 824-WX50    | 20.3 cm x 12.7 cm (8" x 5") | 50 pack       |
|              | 824-WX500   | 20.3 cm x 12.7 cm (8" x 5") | 500 pack      |
|              | 8241-T      | 90 Wipes                    | Tub dispenser |
| <b>8241T</b> | 8282-100    | 22.8 cm x 22.8 cm (9" x 9") | 100 pack      |
|              | 828-4x4     | 10 cm x 10 cm (4" x 4")     | 100 pack      |
|              | 829-4x4     | 10 cm x 10 cm (4" x 4")     | 100 pack      |
|              | 829-50      | 22.8 cm x 22.8 cm (9" x 9") | 50 pack       |
| <b>830</b>   | 830-25*     | 38 cm x 38 cm (15" x 15")   | 25 pack       |

\*Not available for USA distributors

## Abrasive



All brushes shown in 1/3 of actual size.

| Cat No. | Bristle Material (Trim length) | Handle Material (Length) | Brush Face (LxW) | Application                                                                                                                                                               |
|---------|--------------------------------|--------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 850     | Stainless Steel ( 5/16" )      | wood ( 7 3/4" )          | 1 3/8" x 7/16"   | Excellent utility brush. Great for cutting corrosion. Use for solder surface preparation. Also great for cleaning soldering iron tips.                                    |
| 851     | Brass ( 5/16" )                | wood ( 7 3/4" )          | 1 3/8" x 7/16"   | Excellent utility brush. Great for removing oxides and corrosion from connector ends. Burnishes without removing base metal. Also great for cleaning soldering iron tips. |
| 858     | Stainless Steel ( 7/16" )      | Stainless steel (6.5")   | 1 1/8" x 1/4"    | "No ESD" brush. Burnish contacts without removing base metals. An excellent gold contact cleaner. Great for removing oxides and deposits.                                 |

## Non-abrasive

| Cat No. | Bristle Material (Trim length) | Handle Material (Length) | Brush Face (LxW)  | Application                                                                                                           |
|---------|--------------------------------|--------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|
| 852     | Hog Hair ( 5/16" )             | 7 3/4" wood              | 1 3/8"x7/16"      | Excellent for removing flux and general clean up. Can be used dry or wet. Works well with sticky or crusty materials. |
| 853     | Hog Hair (3/4" )               | 8 3/8" wood              | 2 1/4"x1" (large) |                                                                                                                       |
| 859     | Hog Hair ( 5/16" )             | 7 3/4" wood              | 1 3/8"x7/16"      |                                                                                                                       |

## Technical

| Cat No.           | Bristle Material (Trim length)         | Handle Material (Length) | Brush Face (LxW)                           | Application                                                                                                                |
|-------------------|----------------------------------------|--------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 855-5<br>855-BULK | Horse Hair ( 3/4" )                    | 6" Tin                   | 1/4" x 3/8"                                | Works well for dusting, cleaning with fluids, and general cleanup.                                                         |
| 856               | Horse Hair ( 1/4", 3/16" chiseled end) | 4.5" cad plated steel    | Double Ended (chisel trim)<br>1/4" x 5/16" | Excellent general cleaning brush with short bristles for heavy duty scrubbing. One end is chiseled to clean tight corners. |
| 857               | Hog Hair ( 1/2" )                      | 5" wood, chiseled style  | 3/4" x 5/16"                               | Excellent for removing flux and general clean up. Use dry or with fluids.                                                  |

# CROSS REFERENCE GUIDE

|                               |           |
|-------------------------------|-----------|
| <b>Chemtronics</b> . . . . .  | <b>46</b> |
| <b>Easy Braid</b> . . . . .   | <b>46</b> |
| <b>GC Chemicals</b> . . . . . | <b>47</b> |
| <b>Micro Care</b> . . . . .   | <b>47</b> |
| <b>Techspray</b> . . . . .    | <b>48</b> |

## Chemtronics

| Code                  | Product Description                  | MG Part Number         |
|-----------------------|--------------------------------------|------------------------|
| 80-1-5                | Super Wick Fine Braid                | 423                    |
| 80-2-5                | Super Wick Fine Braid                | 424                    |
| 80-3-5                | Super Wick Fine Braid                | 425                    |
| 80-4-5                | Super Wick Fine Braid                | 426                    |
| 80-5-5                | Super Wick Fine Braid                | 427                    |
| 50-2-25               | Super Wick Fine Braid                | 442                    |
| 50-3-25               | Super Wick Fine Braid                | 443                    |
| 50-4-25               | Super Wick Fine Braid                | 444                    |
| 50-1-25               | Super Wick Fine Braid                | 451                    |
| 50-2-25               | Super Wick Fine Braid                | 452                    |
| 50-3-25               | Super Wick Fine Braid                | 453                    |
| 50-4-25               | Super Wick Fine Braid                | 454                    |
| 50-2-100              | Super Wick Fine Braid                | 462                    |
| 50-3-100              | Super Wick Fine Braid                | 463                    |
| 50-4-100              | Super Wick Fine Braid                | 464                    |
| 50-2-500              | Super Wick Fine Braid                | 472                    |
| 50-3-500              | Super Wick Fine Braid                | 472                    |
| 50-4-500              | Super Wick Fine Braid                | 474                    |
| CP400                 | IPA Presaturated Wipe                | 824W                   |
| C600-C900             | Twillwipes                           | 829                    |
| ES805                 | Label & Adhesive Remover             | 836                    |
| E1661                 | Nutrol Control Cleaner               | 401B-340G              |
| ES517                 | Super Duster 134a                    | 402A-140G              |
| ES1017                | Super Duster 134a                    | 402A-285G              |
| ES1617                | Super Duster 134a                    | 402A-450G              |
| ES1020R               | Super Duster Refill                  | 402AR                  |
| ES710V                | Chrome Trigger Valve                 | 402-T                  |
| ES1050                | Super Cold 134a                      | 403A-285G              |
| ES1551                | Super Cold 134a                      | 403A-400G              |
| ES1628                | Contact Cleaner                      | 404B-140G              |
| ES130 (non flammable) | Safety Wash Cleaner Degreaser        | 4050-1L (flammable)    |
| ES1530                | Safety Wash Cleaner Degreaser        | 4140-400G              |
| ES1220                | Superwash Cleaner/Degreaser          | 406B-450G              |
| ES820L                | Audio/Video Head Cleaner             | 407C-340G              |
| ES1601                | NPB Cleaner Degreaser or HFE Cleaner | 4112-340G or 4120-450G |
| ES1607                | NPB Cleaner Degreaser                | 4112-340G (aggressive) |
| ES1605                | Electrosolve Contact Cleaner         | 409B-140G              |
| ES7100                | HFE Solvent                          | 411-300G / 4120-450G   |
| ES1631                | Flux Remover-Super HFE               | 4141-340G              |
| ES130                 | Heavy Duty Flux Remover              | 4140-400G              |
| ES1530                | Heavy Duty Flux Remover              | 413B-425G              |
| ES135                 | Flux Remover-Plastic Safe            | 4140-1L                |
| ES535                 | Flux Remover-Plastic Safe            | 4140-20L               |
| ES1035                | Flux Remover-Plastic Safe            | 4140-400G              |
| CW3300G               | Green Overcoat Pen                   | 4190-P                 |
| CTAR-12               | Acrylic Conformal Coating            | 419B-340G              |
| ES1668                | Screen/Keyboard Cleaner              | 4200-500ML             |
| CTSR-1                | Silicone Conformal Coating           | 422-1L                 |

| Code           | Product Description             | MG Part Number |
|----------------|---------------------------------|----------------|
| CTSR-12        | Silicone Conformal Coating      | 422A-340G      |
| 5-5L           | Super Wick                      | 424-NS         |
| 5-25L          | Super Wick                      | 442            |
| 7-5L           | Super Wick                      | 424-NS         |
| 10-5L          | Super Wick                      | 426-NS         |
| 7-25L          | Super Wick                      | 443            |
| 7-50L          | Super Wick                      | 453-NS         |
| 10-50L         | Super Wick                      | 454-NS         |
| 10-100L        | Super Wick                      | 464            |
| 10-500L        | Super Wick                      | 474            |
| CC15           | Chamois Swab                    | 810-15         |
| CC50           | Chamois Swab                    | 810-50         |
| CP420E         | Super Contact Cleaner w/ PPE    | 801B-125ML     |
| CW7400         | Super Contact Cleaner Pen w/PPE | 801B-P         |
| CT200/CT2000   | Cotton Swab                     | 811-100        |
| CT5000         | Tapered Cotton Swab             | 8112-100       |
| CF50           | Form Over Cotton Swab           | 812-10         |
| CF3050         | Foam Swab                       | 813-10         |
| CF2050         | Rectangular Foam Swab           | 814-10         |
| ES132          | Ultrasonic Cleaner              | 821-1L         |
| ES125A         | Immersion Super Solvent         | 8260-1L        |
| ES1607         | NPB Cleaner Degreaser           | 4112-1L        |
| CW8200         | Rosin Flux Pen                  | 835-P          |
| CW2200 STP/MTF | Silver Conductive Pen           | 8420-P         |
| CW2200BLK      | Silver Paint                    | 842-20G        |
| CW7100         | Carbon Conductive Grease        | 846-80G        |
| CT40-5         | Heat Transfer Compound          | 860-150G       |
| CDA8           | Peelable Solder Mask            | 862-150ML      |
| C910           | Optiwipes                       | 828-4x4        |
| 6704/6709      | Hydro-Wipes                     | 8282           |

## Easy Braid

| Code      | Product Description                 | MG Part Number |
|-----------|-------------------------------------|----------------|
| K21Y09    | Electrosolve Contact Cleaner        | 409B-140G      |
| K60C12    | Acrylic Conformal Coating           | 419B-340G      |
| K61C128   | Acrylic Conformal Coating (liquid)  | 419B-1L        |
| K30Y14    | General Purpose Flux Remover        | 4040-400G      |
| K40Y14    | Anti-Static Screen/Keyboard Cleaner | 4200-500ML     |
| K44Y16    | Multi Purpose Alcohol Wipe          | 8241-T         |
| K70R10    | Super Duster 134a                   | 402A-285G      |
| K41B10    | Super Cold 134a                     | 403A-400G      |
| K42Y01    | Heat Transfer Compound              | 860-150G       |
| K43Y02    | Label & Adhesive Remover            | 836-140G       |
| K51G13    | Immersion Super Solvent             | 8260-1L        |
| K52G16    | Immersion Super Solvent             | 8260-1L        |
| SW2PF-100 | Foam Over Cotton Swab               | 812-250        |
| SW2PF-50  | Foam Over Cotton Swab               | 812-50         |
| SW3PF-10  | Foam Over Cotton Swab               | 812-10         |
| SW3PF-50  | Foam Over Cotton Swab               | 812-50         |
| SW3PF-100 | Foam Over Cotton Swab               | 812-250        |
| SW3WF-10  | Foam Over Cotton Swab               | 812-10         |
| SW3WF-50  | Foam Over Cotton Swab               | 812-50         |
| SW3WF-100 | Foam Over Cotton Swab               | 812-250        |
| SW5PF-10  | Foam Over Cotton Swab               | 812-10         |
| SW5PF-50  | Foam Over Cotton Swab               | 812-50         |
| SW5PF-100 | Foam Over Cotton Swab               | 812-250        |

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## Easy Braid cont.

| Code       | Product Description           | MG Part Number |
|------------|-------------------------------|----------------|
| SW5PFR-10  | Foam Swab                     | 813-10         |
| SW5PFR-50  | Foam Swab                     | 813-50         |
| SW5PFR-100 | Foam Swab                     | 813-250        |
| SW6PFR-10  | Foam Swab                     | 813-10         |
| SW6PFR-50  | Foam Swab                     | 813-50         |
| SW6PFR-100 | Foam Swab                     | 813-250        |
| SW6PF-10   | Foam Over Cotton Swab         | 812-10         |
| SW6PF-50   | Foam Over Cotton Swab         | 812-50         |
| SW6PF-100  | Foam Over Cotton Swab         | 812-250        |
| SW6PFG-10  | Foam Over Cotton Swab         | 812-10         |
| SW6PFG-50  | Foam Over Cotton Swab         | 812-50         |
| SW6PFG-100 | Foam Over Cotton Swab         | 812-250        |
| SW6WC-10   | Double Headed Cotton Swab     | 811-100        |
| SW6WC-50   | Double Headed Cotton Swab     | 811-100        |
| SW6WC-100  | Double Headed Cotton Swab     | 811-100        |
| SW6WF-10   | Foam Over Cotton Swab         | 812-10         |
| SW6WF-50   | Foam Over Cotton Swab         | 812-50         |
| SW6WF-100  | Foam Over Cotton Swab         | 812-250        |
| EB41M1855  | General Purpose Alcohol Wipes | 8241-T         |
| EB41M1809  | Multi Purpose Alcohol Wipes   | 8241-T         |
| EB41D2120  | Multi Purpose Alcohol Wipes   | 8241-T         |
| EB41D2121  | Multi Purpose Alcohol Wipes   | 8241-T         |
| EB41D2116  | Multi Purpose Alcohol Wipes   | 8241-T         |
| EB41W44    | Hydrowipes                    | 8282           |
| EB41W99    | Hydrowipes                    | 8282           |
| EB41W1212  | Hydrowipes                    | 8282           |
| OS-B-5     | No Clean Super Wick           | 424-NS         |
| OS-B-10    | No Clean Super Wick           | 424-NS         |
| OS-C-5     | No Clean Super Wick           | 424-NS         |
| OS-C-10    | No Clean Super Wick           | 424-NS         |
| OS-C-50    | No Clean Super Wick           | 453-NS         |
| OS-D-5     | No Clean Super Wick           | 426-NS         |
| OS-D-10    | No Clean Super Wick           | 424-NS         |
| OS-D-50    | No Clean Super Wick           | 454-NS         |
| Q-A-5      | Super Wick                    | 423            |
| Q-A-25     | Super Wick                    | 451            |
| Q-B-5      | Super Wick                    | 424            |
| Q-B-100    | Super Wick                    | 462            |
| Q-B-500    | Super Wick                    | 472            |
| Q-C-5      | Super Wick                    | 425            |
| Q-C-25     | Super Wick                    | 453            |
| Q-C-100    | Super Wick                    | 463            |
| Q-C-500    | Super Wick                    | 472            |
| Q-D-5      | Super Wick                    | 426            |
| Q-D-25     | Super Wick                    | 454            |
| Q-D-100    | Super Wick                    | 464            |
| Q-D-500    | Super Wick                    | 474            |
| Q-E-5      | Super Wick                    | 427            |
| Q-E-50     | Super Wick                    | 464            |
| Q-E-100    | Super Wick                    | 464            |
| Q-E-500    | Super Wick                    | 474            |
| Q-A-AS     | Super Wick                    | 423            |
| Q-B-5AS    | Super Wick                    | 424            |
| Q-C-5AS    | Super Wick                    | 425            |
| Q-D-5AS    | Super wick                    | 426            |
| Q-E-5AS    | Super Wick                    | 427            |

## GC Chemicals

| Code         | Product Description             | MG Part Number     |
|--------------|---------------------------------|--------------------|
| GC-10-128    | Super Glue Liquid/Gel           | 8333-3G / 8334-3ML |
| GC-10-1507   | Isopropyl Alcohol               | 824                |
| GC-10-1507-G | Isopropyl Alcohol               | 824                |
| GC-10-3702   | Acrylic Conformal Coating       | 419B-55ML          |
| GC-10-3704   | Acrylic conformal Coating       | 419B-1L            |
| GC-10-4702   | Super Corona Dope               | 4226-55ML          |
| GC-10-5002   | Red Insulating Varnish          | 4228-55ML          |
| GC-10-8101   | Silicone Heat Transfer Compound | 860-60G            |
| GC-10-8108   | Silicone Heat Transfer Compound | 860-60G            |
| GC-10-8109   | Silicone Heat Transfer Compound | 860-60G            |
| GC-10-9002   | Red Insulating Varnish          | 4228-55ML          |
| GC-10-9008   | Red Insulating Varnish          | 4228-55ML          |
| GC-19-115    | Super Glue Liquid/Gel           | 8333-3G / 8334-3ML |
| GC-19-117    | Super Glue Gel                  | 8334-3ML           |
| GC-22-201    | Silver Print                    | 842-20G            |
| GC-22-209    | Silver Print                    | 842-20G            |
| GC-22-209    | Conformal Coating Stripper      | 8310-100ML         |
| PH-LT-21306  | Super Glue Liquid/Gel           | 8333-3G / 8333-3ML |
| PH-LT-30379  | Super Glue Liquid/Gel           | 8333-3G / 8333-3ML |
| PH-LT-81742  | Super Glue Liquid/Gel           | 8333-3G / 8333-3ML |
| PH-LT-81954  | Super Glue Gel                  | 8333-3ML           |

## Micro Care

| Code       | Product Description               | MG Part Number       |
|------------|-----------------------------------|----------------------|
| MCC-101TC  | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-101TEA | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC101TX   | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-102E   | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-105C   | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-105EA  | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-105X   | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC106FE   | Immersion Super Solvent           | 8260-1L              |
| MCC-119EC  | Immersion Super Solvent           | 8260-1L              |
| MCC-119ME  | Immersion Super Solvent           | 8260-1L              |
| MCC-2004   | Flux Remover-Super HFE            | 4141-340G            |
| MCC4772    | Flux Remover-Plastic Safe         | 4140-400G            |
| MCC-4761   | Screen/Keyboard Cleaner           | 4200-500ML           |
| MCC-AIR    | Super Duster 134a                 | 402A-450G            |
| MCC-AXL    | Immersion Super Solvent           | 8260-1L              |
| MCC-AXLW   | Multi Purpose Alcohol Wipes       | 8241-T               |
| MCC-BGA    | Ultrasonic Cleaner                | 821-1L               |
| MCC-CCC    | HFE Solvent                       | 411-300G / 4120-450G |
| MCC-CDI    | Immersion Super Solvent           | 8260-1L              |
| MCC-CDIW   | IPA Wipes/Multi Purpose IPA Wipes | 824-W / 8241-T       |
| MCC-DC1    | Flux Remover-Plastic Safe         | 4140-400G            |
| MCC-DST    | Super Duster 134a                 | 402A-285G            |
| MCC-EC7M   | Immersion Super Solvent           | 8260-1L              |
| MCC-EPXD   | Immersion Super Solvent           | 8260-1L              |
| MCC-FRZ    | Super Cold 134a                   | 403A-285G            |
| MCC-HD3    | Flux Remover-Super HFE            | 4141-340G            |
| MCC-HDC    | Flux Remover-Super HFE            | 4141-340G            |
| MCC-J110   | Multi Purpose Alcohol Wipe        | 8241-T               |
| MCC-KBCD   | Immersion Super Solvent           | 8260-1L              |
| MCC-MLC    | Safety Wash Cleaner Degreaser     | 4050-400G            |
| MCC-MLCW   | Multi Purpose Alcohol Wipe        | 8241-T               |

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## Micro Care cont.

| Code      | Product Description              | MG Part Number | 1693      | Multi Purpose Alcohol Wipes                    | 8241-T |
|-----------|----------------------------------|----------------|-----------|------------------------------------------------|--------|
| MCC-PEC   | HFE Super Cleaner Degreaser      | 4120-450G      | 1742      | Glass & Enclosure Cleaner                      | 825    |
| MCC-PMGW  | Anti Static Screen Cleaner       | 4200-500ML     | 1743      | Antistatic Screen And Keyboard Cleaner, Liquid | 4200   |
| MCC-PRO   | Flux Remover-Super HFE           | 4141-340G      | 1801-500F | Desoldering Braid                              | 471    |
| MCC-PROW  | Multi Purpose Alcohol Wipes      | 8241-T         | 1801-50F  | Desoldering Braid                              | 451    |
| MCC-QRS   | Flux Remover-Super HFE           | 4141-340G      | 1801-5F   | Desoldering Braid                              | 423    |
| MCC-ROC   | Flux Remover-Super HFE           | 4141-340G      | 1802-100F | Desoldering Braid                              | 462    |
| MCC-SPC3  | HFE Super Cleaner Degreaser      | 4120-450G      | 1802-25F  | Desoldering Braid                              | 442    |
| MCC-SPR   | Flux Remover-Super HFE           | 4141-340G      | 1802-500F | Desoldering Braid                              | 472    |
| MCC-W66   | Hydro-Wipes                      | 8282           | 1802-50F  | Desoldering Braid                              | 452    |
| MCC-W66CP | Optiwipes                        | 828-4x4        | 1802-5F   | Desoldering Braid                              | 424    |
| MCCW99    | Optiwipes                        | 828-4x4        | 1803-100F | Desoldering Braid                              | 463    |
| MCC-W9950 | Optiwipes                        | 828-4x4        | 1803-25F  | Desoldering Braid                              | 443    |
| MCC-W99CP | Optiwipes                        | 828-4x4        | 1803-500F | Desoldering Braid                              | 473    |
| MCC-W99TJ | General Purpose Cotton Wipes     | 830            | 1803-50F  | Desoldering Braid                              | 453    |
| WS101     | Antistatic Foam Over Cotton Swab | 812AS          | 1803-5F   | Desoldering Braid                              | 425    |
| WS102     | Antistatic Foam Over Cotton Swab | 812AS          | 1804-100F | Desoldering Braid                              | 464    |
| WS103     | Antistatic Foam Over Cotton Swab | 812AS          | 1804-25F  | Desoldering Braid                              | 444    |
| WS104     | Antistatic Foam Over Cotton Swab | 812AS          | 1804-500F | Desoldering Braid                              | 474    |
| WS201     | Foam Swab                        | 813-250        | 1804-50F  | Desoldering Braid                              | 454    |
| WS202     | Foam Swab                        | 813-50         | 1804-5F   | Desoldering Braid                              | 426    |
| WS203     | Foam Swab                        | 813-10         | 1808-50F  | Desoldering Braid                              | 451    |
| WS501     | Double Headed Cotton Swab        | 811-100        | 1808-5F   | Desoldering Braid                              | 423    |

## Techspray

| Code | Product Description                              | MG Part Number | 1809-5F   | Desoldering Braid          | 424       |
|------|--------------------------------------------------|----------------|-----------|----------------------------|-----------|
| 1610 | Isopropyl Alcohol, Pure Anhydrous, Liquid        | 824            | 1810-100F | Desoldering Braid          | 463       |
| 1610 | Isopropyl Alcohol, Pure Anhydrous, Wipes         | 824W           | 2106      | Silicone Conformal Coating | 422A-340G |
| 1612 | Rubber Rejuvenator                               | 408A           |           |                            |           |
| 1613 | Label And Adhesive Remover, Aerosol              | 836            |           |                            |           |
| 1620 | Cleaner Degreaser, Safe On Plastics, Aerosol     | 4050           |           |                            |           |
| 1620 | Cleaner Degreaser, Safe On Most Plastics, Liquid | 4050           |           |                            |           |
| 1621 | Flux Remover, Safe On Most Plastics, Aerosol     | 4140           |           |                            |           |
| 1621 | Flux Remover, Safe On Most Plastics, Liquid      | 4140           |           |                            |           |
| 1622 | Contact Cleaner, Safe On Most Plastics, Aerosol  | 409B           |           |                            |           |
| 1624 | Magnetic Tape Head Cleaner, Aerosol              | 407C           |           |                            |           |
| 1624 | Magnetic Tape Head Cleaner, Liquid               | 407C           |           |                            |           |
| 1625 | Glass Cleaner, Aerosol                           | 825            |           |                            |           |
| 1640 | HD Cleaner Degreaser, Nonflammable, Aerosol      | 4112           |           |                            |           |
| 1640 | HD Cleaner Degreaser, Nonflammable, Liquid       | 4112           |           |                            |           |
| 1664 | NPB Cleaner Degreaser or HFE Cleaner             | 4112 or 4120   |           |                            |           |
| 1665 | Flux Remover, Non Flammable, Aerosol             | 4141           |           |                            |           |
| 1667 | Blue Shower II, Degreaser, Aerosol               | 4112           |           |                            |           |
| 1668 | Blue Shower II, Degreaser, Aerosol               | 4112           |           |                            |           |
| 1671 | Aerosol Dusting Gas                              | 402A           |           |                            |           |
| 1671 | Dusting Gas Refill For Trigger Valve             | 402AR          |           |                            |           |
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| 1675 | Cleaner Degrease, Non Flammable, Aerosol         | 4120           |           |                            |           |
| 1676 | Flux Remover Non Flammable, Aerosol              | 4141           |           |                            |           |
| 1679 | Flux Remover, Safe On Most Plastics, Aerosol     | 4140           |           |                            |           |
| 1679 | Flux Remover, Safe On Most Plastics, Liquid      | 4140           |           |                            |           |
| 1685 | HFE Cleaner Degreaser, Non Flammable, Aerosol    | 4120           |           |                            |           |
| 1686 | HFE Flux Remover, Non Flammable, Aerosol         | 4140           |           |                            |           |
| 1687 | HFE Contact Cleaner, Zero Residue, Aerosol       | 4120           |           |                            |           |
| 1690 | Magnetic Head Cleaner, Aerosol                   | 407C           |           |                            |           |
| 1690 | Magnetic Head Cleaner, Liquid                    | 407C           |           |                            |           |

This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. M.G. Chemicals does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

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| 4050                                       | SAFETY WASH CLEANER / DEGREASER                                      | 832FRB   | EPOXY - FLAME RETARDANT ENCAPSULATING & POTTING COMPOUND                                  | 18    |
| 4101                                       | SODIUM PERSULPHATE                                                   | 832TC    | EPOXY - BLACK, THERMALLY CONDUCTIVE ENCAPSULATING & POTTING COMPOUND                      | 18    |
| 4112                                       | CLEANER DEGREASER NPB HEAVY DUTY, NON-FLAMMABLE                      | 8335     | SUPER GLUE DUAL DISPLAY PACK (CONTAINS 12 VIALS OF 8333-3G AND 12 VIALS OF 8334-3ML)      | 26    |
| 4120                                       | HFE SUPER CLEANER DEGREASER, NON FLAMMABLE                           | 835-P    | ROSIN FLUX PEN                                                                            | 11    |
| 4140                                       | FLUX REMOVER - PLASTIC SAFE                                          | 835-P-20 | ROSIN FLUX PEN - BULK                                                                     | 11    |
| 4141                                       | FLUX REMOVER - SUPER HFE, NON FLAMMABLE                              | 8420-P   | SILVER PRINT - CONDUCTIVE PEN                                                             | 39    |
| 4200                                       | ANTISTATIC SCREEN CLEANER                                            | 8700     | THREADLOCKER DISPLAY PACK (CONTAINS 5 EACH OF 8701-10ML, 8702-10ML, 8703-10ML, 8704-10ML) | 27    |
| 4223                                       | CONFORMAL COATING, URETHANE                                          |          |                                                                                           |       |
| 4226                                       | SUPER CORONA DOPE - HIGH VOLTAGE INSULATING VARNISH                  |          |                                                                                           |       |
| 4228                                       | RED INSULATING VARNISH                                               |          |                                                                                           |       |
| 8260                                       | IMMERSION SUPER SOLVENT                                              |          |                                                                                           |       |
| 8310                                       | CONFORMAL COATING STRIPPER, WITH BRUSH CAP                           |          |                                                                                           |       |
| 8328                                       | EPOXY & ADHESIVE CLEANER                                             |          |                                                                                           |       |
| 8329                                       | MOULD RELEASE (NON-SILICONE)                                         |          |                                                                                           |       |
| 8331                                       | EPOXY - ELECTRICALLY CONDUCTIVE, SILVER (RATIO 1:1), SYRINGES        |          |                                                                                           |       |
| 8332                                       | EPOXY - FAST SETTING ADHESIVE - DUAL SYRINGE                         |          |                                                                                           |       |
| 8333                                       | SUPER GLUE LIQUID, COMMERCIAL SIZE IN PLASTIC BOTTLE                 |          |                                                                                           |       |
| 8334                                       | SUPER GLUE GEL, CHILD RESISTANT VIAL (DISPLAY PACK REFILL, 10 VIALS) |          |                                                                                           |       |
| 8336                                       | SUPER CONTACT CEMENT                                                 |          |                                                                                           |       |
| 8420                                       | SUPER SHIELD SILVER CONDUCTIVE COATING - LIQUID                      |          |                                                                                           |       |
| 8461                                       | WHITE LITHIUM GREASE                                                 |          |                                                                                           |       |
| 8462                                       | SILICONE GREASE                                                      |          |                                                                                           |       |
| 8471                                       | PEN OILER WITH TEFLON                                                |          |                                                                                           |       |
| 8610                                       | HEAT TRANSFER COMPOUND, TYPE 2 - NON-SILICONE                        |          |                                                                                           |       |
| 8701                                       | THREADLOCKER, LOW STRENGTH, REMOVABLE                                |          |                                                                                           |       |
| 8702                                       | THREADLOCKER, MEDIUM STRENGTH, REMOVABLE                             |          |                                                                                           |       |
| 8703                                       | THREADLOCKER, HIGH STRENGTH, PERMANENT                               |          |                                                                                           |       |

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