



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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The logo for MC Chemicals, featuring the letters 'MC' in a stylized, bold font with horizontal lines extending from the top and bottom, followed by the word 'Chemicals' in a sans-serif font.

PRODUCT CATALOG



AUTOMOTIVE



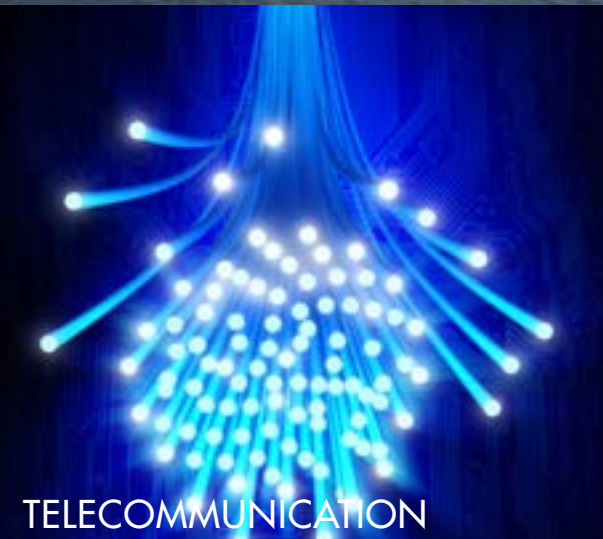
AEROSPACE



MARINE



PROTOTYPING



TELECOMMUNICATION



MAINTENANCE

Who is MG Chemicals

M.G. Chemicals is a manufacturer and wholesaler of chemical products for the electronics industry. Our chemical products include dusters and circuit coolers, electronic cleaners, flux removers, contact cleaners, protective coatings, epoxies, adhesives, RTV silicones, lubricants, EMI/RFI shielding coatings, thermal management products, prototyping supplies, solders, and more. We also distribute related non-chemical products, such as wipes, swabs, brushes, desoldering braid, and copper clad boards.

Quality Assurance

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 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 and with our techsupport hotline at 1-800-201-8822.

Shipping & Handling

M.G. Chemicals' products are offered in IATA tested and United Nations approved high performance shipping cartons for ease of transport anywhere in the world.

Product Availability

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

Customer Care

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

cleaners for electronics

- Dusters and Coolers
- Isopropyl Alcohol
- Electronic Cleaners
- Flux Removers
- Specialty Cleaners
- Screen Cleaners
- Contact Cleaners

04

brushes, swabs, wipes

- Brushes, Swabs
- Wipes

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- Conformal Coatings
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- Thinner/Cleaners
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- Copper Clad Boards
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Compliance Center

Food Safe Certification



M.G. Chemicals has been working closely with the Canadian Food Inspection Agency (CFIA) and NSF International/Non Food Compounds Registration (NSF) to certify products that can be used around food establishments.

Only certified products can be used in or around food establishments. This includes the maintenance of both electronic controls and mechanical parts of food plant assembly lines.

Each MG product that has been certified is zero residue. This means that no harmful contaminants are left behind that may accidentally get onto food; however, there are strict guide lines that require all surfaces to be

washed after any maintenance is performed, so you will find the following statement on our labels: "...Food contact surfaces are to be rinsed with water prior to reuse and avoid food contamination during its use and storage."

Each product that has been certified comes with a certification letter that can be obtained by contacting CFIA or NSF or from our website.

To obtain a list of M.G. Chemicals' products that has been certified by CFIA and NSF to be used around food plants, visit www.mgchemicals.com/foodsafe

REACH

EU Regulations on Registration, Evaluation, Authorization and restriction of Chemical substances) **REACH** ✓

No product of MG Chemicals ("MG") contains any Substances of Very High Concern ("SVHC's") as defined by REACH.

MG currently does not export one ton of any individual substance to the European market, and is therefore neither required, nor eligible, to pre-register any substances under REACH. European customers of MG can continue to use our products, as long as their total usage of any particular substance contained in these products remains under the one-ton threshold.

Most of the products sold by MG are "preparations" of individual substances that have been purchased from

large multi-national corporations. MG believes most of these substances have been pre-registered by the original manufacturers, and MG's customers can be considered "downstream users" of these original manufacturers. MG is currently in the process of verifying that these pre-registrations have taken place and will be releasing and continually updating a list of our products that have been verified to contain 100% pre-registered materials, as the information becomes available.

European customers should take note that the ultimate responsibility for registration falls on them, and quantities of individual unregistered ingredients in preparations obtained from different suppliers must be added together for the purpose of determining if the one-ton threshold has been passed.

RoHS

RoHS, also known as Lead-Free, stands for Restriction of Hazardous Substances. RoHS, also known as Directive 2002/95/EC, originated in the European Union and restricts the use of six hazardous materials found in electrical and electronic products. All applicable products in the EU market after July 1, 2006 must pass RoHS compliance. RoHS impacts the entire electronics industry.

The substances restricted under the RoHS directive include lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (CrVI), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

Any business that sells applicable electrical or electronic products, sub-assemblies or components directly to RoHS countries, or sells to resellers, distributors or integrators that in turn sell products to these countries, is impacted if they utilize any of the restricted materials.

With the exception of our Leaded Solder Wires, MG Chemicals does not produce any products containing any of the six substances controlled by RoHS.

For more information on the above regulatory issues, please visit the Compliance Center on our website for more details.



Dusters and Coolers

Super Duster™ 152

- ▶ Ozone safe
- ▶ Non-flammable
- ▶ Non-conductive
- ▶ Zero residue
- ▶ Variable valve allows greater user control



This general purpose duster removes microscopic dust, lint & 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.

This product is not designed for use near ignition sources. For cleaning in such circumstances, use M.G. Chemicals' special application Super Duster 134 (Cat. No. 402A).



Nonfood Compounds
Program Listed K2
Registration #141801

402B

Cat. No.	Availability	Format
402B-285G	285 grams (10 oz)	aerosol
402B-400G	400 grams (14 oz)	aerosol



Dusters and Coolers

Super Duster™ 134

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



This special application duster is 100% non flammable and 100% non conductive. It should be used to remove dust, lint and foreign particles in electronics and other equipments around sources of ignition or open flames. Okay to use on live circuits.

402A

Cat. No.	Availability	Format
402AR	285 g (10 oz)	refill aerosol
402A-285G	285 g (10 oz)	aerosol
402A-450G	450 g (16 oz)	aerosol

Trigger Valve

Allows user precision control and greater comfort.



Allows user precision control and greater comfort. This high quality threaded chrome valve is for use with Cat. No. 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 without damage to the valve or the can, even if the can's contents have not been depleted.

402T

Cat. No.	Format
402T	chrome trigger valve

Super Cold™ 134 Plus

Chills to -51°C (-60°F)

CFIA
REGISTERED

Used to locate thermal intermittent electronic components, PCB cracks, cold solder joints, and oxidized junctions. Freezes gum & adhesives for easy removal. Protects heat-sensitive components during soldering.



- ▶ 100% HFC 134A GAS
- ▶ OZONE SAFE
- ▶ NON-FLAMMABLE
- ▶ NON-CONDUCTIVE
- ▶ ZERO RESIDUE
- ▶ VARIABLE VALUE ALLOWS GREAT USER CONTROL

403A

Cat. No.	Availability	Format
403A-285G	285 grams (10 oz)	aerosol
403A-400G	400 grams (14 oz)	aerosol

Isopropyl Alcohol (liquid)

A great general-purpose electronics cleaner. Also effective as a flux remover. Perfect for use with fiber optics. Extra effective with M.G. Chemicals' Cat. No. 852 and 853 Hog Hair cleaning brushes. Also available in convenient 5"x8" presaturated wipes.

- ▶ 99.953% PURE ANHYDROUS ALCOHOL
- ▶ SAFE ON PLASTICS
- ▶ LOW TOXICITY
- ▶ CONTAINS NO OZONE-DEPLETING SUBSTANCES



824	Cat. No.	Availability	Format
	824-100ML	125 ml (4.2 oz)	liquid
	824-500ML	500 ml (17 oz)	pump
	824-1L	1 litre (33 oz)	liquid
	824-4L	4 litres (1 gallon)	
	824-1G	3.78 litres (1 gallon) * box of 4	liquid
	824-20L	20 litres (5 gallons)	liquid
	824-WX25	25 per box	single wipe
	824-WX50	50 per bag	single wipe
	824-WX500	500 per bag	single wipe

Isopropyl Alcohol (aerosol)

- ▶ 99.953% pure anhydrous alcohol
- ▶ Complies to California Air Resource Board VOC limits for electronics cleaners
- ▶ Safe on plastics
- ▶ Low Toxicity
- ▶ Contains no ozone-depleting substances



824	Cat. No.	Availability	Format
	824-450G	450 grams (16 oz)	aerosol

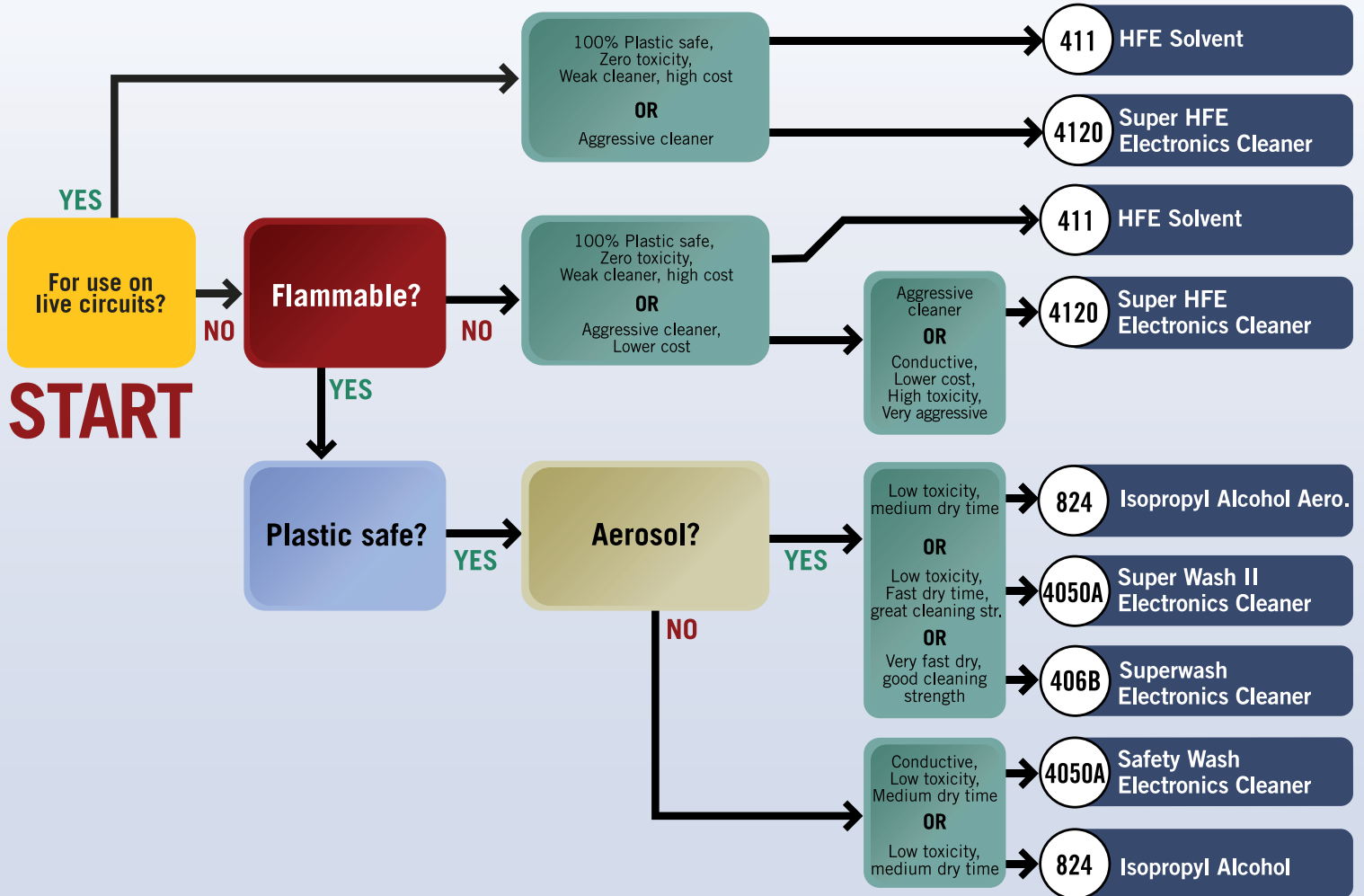
70/30 Alcohol Blends

8241	Cat. No.	Availability	Format
	8241-20L	20 litres	liquid
	8241-T	75 wipes	tub
	8241-WX25	25 per box	single wipe



Electronic Cleaners Selection Chart

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



Safety Wash™

- ▶ Safe on plastics
- ▶ Low toxicity



Use when a low toxicity electronics cleaner is desired. Effective at removing oils, greases, inorganic and organic soils, smoke, flux, and ionic residues from PC boards, office equipment, connectors, electronic or mechanical parts, workbenches, relays and semi-conductors. Extra effective with M.G. Chemicals' Cat. No. 852 and 853 Hog Hair cleaning brushes.

	Cat. No.	Availability	Format
4050	4050-1L	1 litre (33 oz)	liquid
	4050-4L	4 litres (1 gallon)	liquid
	4050-20L	20 litres (5 gallons)	liquid

Safety Wash II™

CFIA
REGISTERED



Nonfood Compounds
Program Listed K2
Registration #141800

A powerful, plastic safe electronics cleaner designed for electronics. Extra effective with M.G. Chemicals' Cat. No.'s 852 & 853 Hog Hair cleaning brushes.

- ▶ Safe on plastics
- ▶ Low toxicity
- ▶ In compliance for use in food plants



Super Wash™



Nonfood Compounds
Program Listed K2
Registration #141146

- ▶ Safe on plastics
- ▶ Rapid dry time

Use when a rapid drying electronics cleaner is required. Perfect for quickly cleaning PC boards. Rapid dry time makes this product excellent for rinsing away other slower drying solvents. Great for rinsing dissolved flux. Extra effective with M.G. Cat. No. 852 and 853 Hog Hair Cleaning Brushes.



	Cat. No.	Availability	Format
4050A	4050A-450G	450 grams (16 oz)	aerosol

	Cat. No.	Availability	Format
406B	406B-425G	425 grams (15 oz)	aerosol

Pure HFE

Cleans energized circuits, contacts, motors and other electronic equipment. A TF Solvent replacement. Approved by SNAP without restrictions. Extra effective with the use of M.G. Chemicals Cat. No. 852 and 853 Hog Hair cleaning brushes.

- ▶ 100% NON-FLAMMABLE
- ▶ 100% NON-CONDUCTIVE
- ▶ 100% NON-TOXIC

CFIA
REGISTERED



Super HFE Electronics Cleaner



Nonfood Compounds
Program Listed K2
Registration #141799

CFIA
REGISTERED

Use when a non-flammable and non-conductive electronics cleaner is required. Excellent cleaning strength. Also suitable for use as a contact cleaner or flux remover. Extra effective with the use of M.G. Cat. No. 852 and 853 Hog Hair cleaning brushes.



	Cat. No.	Availability	Format
411	411-300G	300 grams (10.6 oz)	aerosol

	Cat. No.	Availability	Format
4120	4120-450G	450 grams (16 oz)	aerosol

Flux Removers

Removing flux is a two-step process. The first step is dissolving the flux. The second step is rinsing off the dissolved flux. 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, and 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 rinse off the dissolved solids completely 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 almost immediately after rinsing your board, it will be dry and ready for service.

Flux Remover - Plastic Safe

CFIA
REGISTERED

Use when a general-purpose flux remover is required. Excellent for removing rosin, non-rosin, and no clean fluxes. Also available in pen form.

- ▶ Safe on plastics
- ▶ Zero residue

4140	Cat. No.	Availability	Format
	4140-400G	400 grams (14 oz)	aerosol
	4140-1L	1 litre (33 oz)	liquid
	4140-4L	4 litres (1 gallon)	liquid
	4140-20L	20 litres (5 gallons)	liquid
	4140-P	10 ml (0.34 oz)	pen



Heavy Duty Flux Remover

Use when an aggressive flux remover is required.

Penetrates to quickly remove all non-ionic and ionic soils found in post-solder applications. Variable valve allows user to control rate of flow. Extra effective with M.G. Chemicals' cleaning brushes.



- ▶ FAST EVAPORATION
- ▶ AGGRESSIVE CLEANER

413B	Cat. No.	Availability	Format
	413B-425G	425 grams (15 oz)	aerosol
	413B-1L	1 litre (33 oz)	liquid
	413B-4L	3.78 litres (1 gallon)	liquid
	413B-20L	18.9 litres (5 gallons)	liquid

SEE THE SOLDER AND DESOLDERING SECTION FOR MORE DETAILS.

835 **Liquid Rosin Flux**
See page 42

8341 **No Clean Flux Paste**
See page 42



Specialty Cleaners & Screen Cleaners

Label & Adhesive Remover



CFIA
REGISTERED

▶ **CARB Compliant**

Effectively removes adhesives and sticker residues. Pleasant odor makes product easy to work with. Safe on plastic.

8361	Cat. No.	Availability	Format
	8361-140G	140 grams	aerosol

Audio/Video Head Cleaner

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

- ▶ **OZONE SAFE**
- ▶ **ZERO RESIDUE**
- ▶ **SAFE ON PLASTICS**

407C	Cat. No.	Availability	Format
	407C-250ML 407C-1L	250 ml (8.4 oz) 1 litre (33 oz)	liquid liquid

LCD Screen Cleaning Kit

MG Chemicals' LCD Screen Cleaning Kit includes a high quality microfiber cleaning cloth and an advanced Non Drip Gel formula that will safely and effectively clean the toughest residues from your LCD and Plasma screens.

Glass Cleaner



Nonfood Compounds
Program Listed A1
Registration #141797

CFIA
REGISTERED

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.

825	Cat. No.	Availability	Format
	825-500G	500 grams (17.6 oz)	aerosol

Rubber Renue™

Bring oxidized rubber back to life. Wet cloth with Rubber Renue and rub onto rubber surface. Do not leave excess solution on surface. Excellent for use on belts, platens, rollers, rubber parts.



- ▶ **ZERO RESIDUE**
- ▶ **CONTAINS NO OZONE-DEPLETING SUBSTANCES**
- ▶ **FAST EVAPORATING**

408	Cat. No.	Availability	Format
	408A-125ML 408B-1L	125 ml (4.2 oz) 1 litre (33 oz)	liquid liquid



- ▶ **ADVANCED NON-DRIP FORMULA**
- ▶ **ALCOHOL AND AMMONIA FREE**
- ▶ **NON-STREAKING**
- ▶ **ANTI-STATIC**

8242-K	Cat. No.	Availability	Format
	8242-K	200 ml	bottle

LCD Cleaning Wipes

Our new and improved cleaning wipe now looks and cleans better than ever. Tougher wipes to prevent ripping during dispensing and an air tight cap for extended shelf life after opening.

8242	Cat. No.	Availability	Format
	8242-RTS	50 wipes (Spanish)	tub
	8242-RTF	50 wipes (French)	tub
	8242-WX25	25 wipes per box	wipes

Super Contact Cleaner with Poly Phenyl Ether

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

Reduces contact scrubbing and reduces connection wear and abrasion failures. Protects, lubricates and deoxidizes IC's, connectors, jacks, relays, contacts, switches, plugs, batteries, jacks, relays, controls, potentiometers and more. Also available in micro tip pen format.



- ▶ PROTECTS GOLD FOR LIFE
- ▶ IMPROVES CONDUCTIVITY ON ALL CONTACTS
- ▶ SAFE ON PLASTICS
- ▶ CARB COMPLIANT (FOR 801C ONLY)

	Cat. No.	Availability	Format
801B	801B-125G	125 grams (4.5 oz)	aerosol
801C	801C-P	10 ml (0.34 oz)	micro tip pen

Contact Cleaner with Electronic Grade Silicone

Use when requiring a contact cleaner with dry silicone lubrication.

Cleans and protects with silicone for lubrication. Contains a unique blend of high purity solvents and electronic grade silicone. Cleans and lubricates tuners, office equipment, battery terminals, switches, keyboards, ignition systems, locks, plastic parts, rubber gaskets, contacts, mold releases, telescoping antennas and more.



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

	Cat. No.	Availability	Format
404B	404B-140G	140 grams (5 oz)	aerosol
	404B-340G	340 grams (12 oz)	aerosol

Electrosolve™ Contact Cleaner

Use when a zero residue contact cleaner is required.

- ▶ Rapid dry time
- ▶ Safe on plastics
- ▶ Zero residue



An effective and powerful cleaner that quickly penetrates and dissolves most soil types. For use on most electronic parts and equipment including connectors, contacts, LED's, PCB's, components, circuit breakers, tuners and microprocessors. Variable valve allows user to control rate of flow. Extra effective with M.G. Cat. No. 852 and 853 Hog Hair Cleaning Brushes.



	Cat. No.	Availability	Format
409B	409B-140G	140 grams (5 oz)	aerosol
	409B-340G	340 grams (12 oz)	aerosol

Nu-trol™ Control Cleaner

Use when cleaning and lubricating controls.

- ▶ Fast dry
- ▶ Safe on plastics and elastomers
- ▶ Mineral oil lubrication



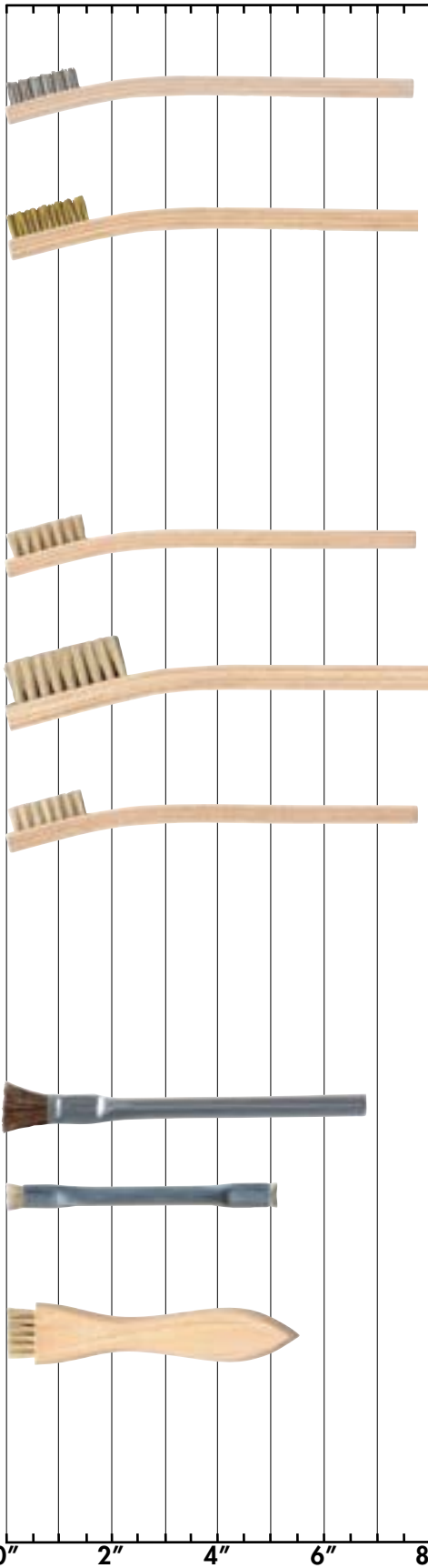
Contains a light, electronic grade, mineral oil lubricant. Cleans and lubricates controls, locks, hinges, selector switches, office equipment, power tools, clock mechanisms, and delicate mechanical equipment. Not for use directly on electronic circuits.



	Cat. No.	Availability	Format
401B	401B-140G	140 grams (5 oz)	aerosol
	401B-340G	340 grams (12 oz)	aerosol

Brushes

brushes, swabs, wipes



Abrasive

Cat. No.	Bristle Material	Handle Length Material	Brush Face	
850	Stainless Steel	7 3/4" wood	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	7 3/4" wood	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.

Non-abrasive

852	Hog Hair	7 3/4" wood	1 3/8" x 7/16"	Excellent for removing flux and general clean up. Can be used dry or wet. Works well with sticky or crusty materials.
853	Hog Hair	8 3/8" wood	2 1/4" x 1" (large)	Excellent for removing flux and general clean up. Can be used dry or wet. Works well with sticky or crusty materials.
859	Horse Hair	7 3/4" wood	1 3/8" x 7/16"	Excellent for removing flux and general clean up. Can be used dry or wet. Works well with sticky or crusty materials.

Technical

855-5 855-144	Horse Hair	6"	1/4" x 3/8"	Works well for dusting, cleaning with fluids, and general cleanup.
856	Horse Hair	4.5" cad plated steel	Double Ended (chisel trim) 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	5" wood	3/4" x 5/16"	Excellent for removing flux and general clean up. Use dry or with fluids.

Available Sizes

Cat. No.	Availability
Chamois Swabs	
Single Headed	
810-15	15
810-50	50
810-500	500
Chamois Swabs	
Double Ended	
810D-15	15
810D-50	50
810D-500	500
Cotton Swab (Double Ended)	
811-100	100
Tapered Cotton Swab (Double Ended)	
8112-100	100
Foam over Cotton Swab	
812-10	10
812-50	50
812-250	250
812-1000	1000
Antistatic Foam over Cotton Swab	
812AS-10	10
812AS-250	250
812AS-1000	1000
Foam Swab	
813-10	10
813-50	50
813-250	250
813-1000	1000
Rectangular Foam Swab	
814-10	10
814-50	50
814-250	250
814-1000	1000

Chamois Swab	810					
Chamois Swab (Double Ended)	810D					
For cleaning sensitive tape and optical heads. Lint free synthetic suede bonded to a bendable handle allowing access to hard to reach areas.						
Cotton Swabs (Double Ended)	811					
Tapered Cotton Swabs (Double Ended)	8112					
Pharmaceutical grade. Extra absorbent on a 6" birch shaft. Compatible with most solvents. Available in standard or tapered head.						
Foam Over Cotton Swab	812					
Absorbent precision cleaning applicator. Shred resistant, 100% Urethane foam head with 100 PPI porosity over extra absorbent U.S.P. pharmaceutical grade purified cotton. Bonded securely to a 6" birch shaft. Compatible with most solvents.						
Anti-Static Foam Over Cotton Swab	812AS					
Absorbent precision cleaning applicator. Anti-static, shred resistant, 100% Urethane foam heads with 100 PPI porosity over extra absorbent U.S.P. pharmaceutical grade purified cotton. Bonded securely to a 6" birch shaft. Compatible with most solvents.						
Foam Swab	813					
Durable precision cleaning applicator. Shred resistant, 100% Urethane foam heads with 100 PPI porosity. Bonded securely to a 6" birch shaft.						
Rectangular Foam Swab	814					
Large shred resistant foam head bonded to sturdy handle for aggressive cleaning applications. 100% Urethane foam heads with 100 PPI porosity. Bonded securely to a 5" polypropylene shaft.						
0"	1"	2"	3"	4"	5"	6"

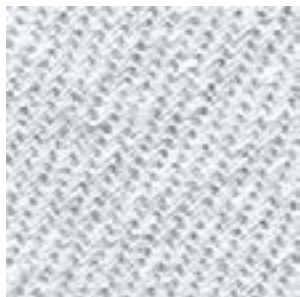
Wipes

brushes, swabs, wipes

Dry Wipes

Twilwipes

Low linting 100% cotton twill weave. Excellent for abrasion-free cleaning and drying.



- ▶ Class 1000 Cleanroom compliant
- ▶ Static free
- ▶ Absorbs 3 times it's own weight

829	Cat. No.	Availability	Format
	829-4x4 829-50	100 wipes 50 wipes	wipes wipes

Hydrowipe

General purpose cleanroom wipe. Pure, versatile, and economical. A super absorbent hydro entangled non woven blend of cellulose and polyester. Dimensions 9" x 9".



8282	Cat. No.	Availability	Format
	8282-300	300 wipes	wipes

Optiwipe

Super Soft Hydroentangled Polyester Fiber. Use to clean optical surfaces, photo processing, lab equipment, and other precision instrumentation. Dimensions 4" x 4".



- ▶ Zero lint

828	Cat. No.	Availability	Format
	828-4X4	100 wipes	wipes

Presaturated Wipes

LCD Cleaning Wipes

Our new and improved cleaning wipe now looks and cleans better than ever. Tougher wipes to prevent ripping during dispensing and an air tight cap for extended shelf life after opening. Dimensions: 3" x 4"



- ▶ Non-streaking
- ▶ Anti-static
- ▶ Safely cleans monitors, laptops, television

8242-RT	Cat. No.	Availability	Format
	8242-RTS 8242-RTF	50 wipes (Spanish) 50 wipes (French)	tub tub

LCD Screen Cleaning Kit

MG Chemicals' LCD Screen Cleaning Kit includes a high quality microfiber cleaning cloth and an advanced Non Drip Gel formula that will safely and effectively clean the toughest residues from your LCD and Plasma screens. Includes bonus wipe for mobile devices.



- ▶ Anti-static
- ▶ Non-streaking
- ▶ Alcohol and ammonia free
- ▶ Advanced non-drip formula

8242-K	Cat. No.	Availability	Format
	8242-K	200 ml	bottle

Optical Wipe

This individually packaged wipe is formulated to clean lenses, glasses, goggles, and other optics. It has a special anti-fog formula to give you longer lasting clarity. Safe to use even on anti-glare coated surfaces.



8243-W	Cat. No.	Availability	Format
	8243-WX25	25 per box	wipes

LCD Cleaning Wipe

Clean your most expensive screens with confidence. Gentle formulation safely cleans LCD and plasma screens.



► **Non-streaking**

► **Anti-static**

8242-W	Cat. No.	Availability	Format
	8242-WX25	25 per box	wipes

Presaturated IPA Wipes

Handy wipes are pre-saturated with isopropyl alcohol. Convenient individual packs.

► **5" x 8"**

► **99.953% anhydrous IPA**

► **Cloth Type**

► **Lint Free**



824-W	Cat. No.	Availability	Format
	824-WX25	25 wipes per box	wipes
	824-WX50	50 wipes per jar	wipes
	824-WX500	500 wipes per bag	wipes

70/30 Isopropyl Alcohol Wipe

This convenient wipe is a blend of 70% Isopropyl Alcohol with 30% deionized water. Special packaging prevents wipe from drying out for more than 2 years. Great for cleaning and disinfecting office equipment and other electronics.



► **70/30 isopropyl alcohol blend**

► **Effective for removing dust, dirt, and grease from electronics and peripherals**

► **Complies to CARB**

8241-W	Cat. No.	Availability	Format
	8241-WX25	25 per box	wipes
	8241-T	75 wipes (tub)	tub

Clean Pad

Thick lint free wipe presaturated with 91% pure isopropyl alcohol and 9% deionized water. Cleans dirt, oxides, oils and other contaminants. Ideal for cleaning sensitive contact surfaces, computers, electronic equipment, magnetic tape heads, office equipment, instruments, fiber optic connectors and ferrules.

824P	Cat. No.	Availability	Format
	824P-50	50 wipes per box	wipes



Kimberly Clark Wipes

Kimtech Science Delicate Task Wipers

KIMTECH SCIENCE* KIMWIPES™ Delicate Task Wiper is a light duty wiper that can handle a variety of delicate tasks. Easily wipes up liquid and dust. Anti-static dispensing reduces lint and electrostatic discharge, controls usage and portability reduces waste.



	Cat. No.	Availability	Format
830-34133	830-34133	196 wipes (11.8" x 11.8")	pop-up box
830-34155	830-34155	280 wipes (4.4" x 8.4")	pop-up box



Kimwipes Delicate Task Wipers

KIMTECH SCIENCE™ KIMWIPES™ Delicate Task Wiper, 2 ply, POP-UP™ Box, offers a unique combination of low-lint tissue softness and multi-ply absorbency that's perfect for a multitude of delicate tasks. Multi-ply absorbency, wipes up liquid and dust. Wipes clean, extra low-lint and extractable performance.

	Cat. No.	Availability	Format
830-34705	830-34705	119 wipes (11.8" x 11.8")	wipes

Kimtech Precision Wipers for fiber optic cleaning

- ▶ Soft and absorbent
- ▶ Anti-static dispensing reduces lint
- ▶ 1-ply economical choice for general low-lint cleaning tasks
- ▶ Coated packaging helps protect wipes from spills

	Cat. No.	Availability	Format
830-05511	830-05511	280 wipes (4.4" x 8.4")	wipes





Silicone Conformal Coating

Ideal for high temperature environments. 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 spraying, liquid can be thinned using Cat. No. 435-1L Thin up to one half part thinner to one part coating. Also available in a micro tip pen format (422B-P). UL Recognized (File #E203094).

422B Specifications

Properties - Electrical

Dielectric Strength (IPC-TM-650)	1056 volts/mil @ 0.150 inch thickness
Dielectric Constant (ASTM 150-98)	1.99 @ 1MHz 2.35 @ 60MHz
Dissipation Factor (ASTM 150-98)	0.012 @ 1MHz 0.037 @ 60MHz
Volume Resistivity (ASTM D 257)	1.2×10^{15} ohm · cm
Surface Resistivity (ASTM D 257)	4.5×10^{16} ohm · cm

Properties - Temperature

Coefficient of Thermal Expansion (-40 °C to 160 °C) (IPC-TM-650)	253.3 ppm/OC
Softening Point	31.4 °C



422B

Cat. No.	Availability	Format
422B-55ML	2 oz (55 ml)	liquid
422B-340G	340 grams	aerosol
422B-1L	945 ml	liquid
422B-4L	3.78 litres	liquid
422B-20L	18.9 litres	liquid
422B-P	5 ml (0.16 oz)	pen

Conformal Coatings

Acrylic Lacquer Conformal Coating

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 spraying, liquid can be thinned using Cat. No. 435-1L. Thin up to one half part thinner to one part coating. Also available in a micro tip pen format (419C-GP).

*** This product replaces the 419B.**

419C Specifications

UL94 Tested V-0 Rated	
UV Indicator for quality inspection	
<u>IPC-CC-830B Tested</u>	
Appearance (IPC-CC-830B 3.5.2)	pass
Flourescence (IPC-CC-830B 3.5.3)	pass
Flammability (IPC-CC-830B 3.5.6)	pass
Fugus Resistance (IPC-TM-650 2.6.1.1)	pass
Flexibility (IPC-TM-650 2.4.5.1)	pass
Dielectric Withstand Voltage (IPC-TM-650 2.5.7.1)	pass
Moisture & Insulation Resistance (IPC-TM-650 2.6.3.4)	pass
Thermal Shock (IPC-TM-650 2.6.7.1)	pass
Temperature Humidity Ageing (IPC-TM-650 2.6.11.1)	pass



419C

Cat. No.	Availability	Format
419C-55ML	55 ml (2 oz)	bottle
419C-340G	340 grams (12 oz)	aerosol
419C-1L	945 ml (1 quart)	liquid
419C-4L	3.78 litres (1 gallon)	liquid
419C-20L	18.9 litres (5 gallons)	liquid
419C-GP	5 ml (0.16 oz)	pen

Premium Acrylic Conformal Coating

A fast drying, xylene and toluene free product that provides an excellent finish. This one part coating is easy to use and repair: it does not require special or costly equipment or materials. It is ideal for high moisture environments and applications requiring easy repair and rework.

The 419D coating protects electric circuits against moisture, dirt, dust, thermal shocks, and scratches that could corrode, short circuit, or otherwise damage the electric components. It insulates against high-voltage arcing, shorts, and static discharges. As well, this coating provides a high dielectric withstand voltage that allows traces to be put closer together helping with miniaturization.

- ▶ NO HAZARDOUS AIR POLLUTANTS
- ▶ CERTIFIED UL 94V-0 (FILE# E202094)
- ▶ SMOOTH, HOMOGENEOUS, AND DURABLE CRYSTAL CLEAR COAT
- ▶ PROTECTS ELECTRONICS FROM MOISTURE, CORROSION, FUNGUS, AND STATIC DISCHARGES
- ▶ EASY TO INSPECT
- ▶ EASY REWORK AND REPAIRS
- ▶ REMOVE WITH MG 435 THINNER/CLEANER, 4354 THINNER 4, OR CONFORMAL COATING STRIPPER

419D

Cat. No.	Availability	Format
419D-1L	945 ml (1 quart)	liquid
419D-4L	3.8 litres (1 gallon)	liquid
419D-20L	18.9 litres (5 gallons)	liquid

Urethane Conformal Coating

Ideal for aggressive chemical environments. Urethane conformal coating is a durable 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 spraying, liquid can be thinned using Cat. No. 435-1L up to fifty percent.

- ▶ FUNGAL RESISTANT MIL SPEC MIL-V-173C-2
- ▶ FAST DRYING-UNITS CAN BE HANDLED IN 30 MIN.
- ▶ CLASS F TEMPERATURE RATING (160°C / 320°F)
- ▶ EXCELLENT CHEMICAL RESISTANCE
- ▶ OIL AND MOISTURE RESISTANT
- ▶ UV INDICATOR FOR QUALITY INSPECTION
- ▶ SUPERIOR ABRASION RESISTANCE
- ▶ EXCELLENT ADHESION
- ▶ GOOD FLEXIBILITY

4223	Cat. No.	Availability	Format
	4223-55ML	55 ml (2 oz)	bottle
	4223-1L	945 ml (1 quart)	liquid
	4223-4L	3.78 litres (1 gallon)	liquid
	4223-20L	18.9 litres (5 gallons)	liquid



Premium Polyurethane Conformal Coating

4223D Premium Polyurethane Conformal Coating is a heat curing, one part product that provides an excellent scratch and chemical resistant finish. This one part coating is easy to use and repair: it does not require special or costly equipment or materials. It is ideal for chemically challenging environments. The 4223D urethane protects electric circuits against aggressive chemicals, moisture, dirt, dust, thermal shocks, and scratches. This avoids corrosion and physical damages to electric components. It insulates against high-voltage arcing, shorts, and static discharges, allowing for traces to be put closer to one another.

4223D	Cat. No.	Availability	Format
	4223D-1L	945 ml (32 fl. oz)	liquid
	4223D-4L	3.8 litres (1 gallon)	liquid
	4223D-20L	20 litres (5 gallons)	liquid

- ▶ Type UR
- ▶ Certified UL 94V-0 (File # E203094)
- ▶ Excellent finish—smooth, flexible, mar resistant
- ▶ High Chemical Resistance—resists water, solvents, and most household chemicals
- ▶ Durable—abrasion resistant
- ▶ Protects electronics from moisture, corrosion, fungus, and static discharges
- ▶ Easy to inspect—fluoresces under black light (UV light)
- ▶ Easy rework and repairs—can solder through coat
- ▶ Removable with MG 8312 Urethane Conformal Coating Stripper
- ▶ Free of isocyanate

Conformal Coatings

Optically Clear Conformal Coating Epoxy

Our 4224 Optically Clear Conformal Coating Epoxy offers a very strong and UV-resistant finish. This two part coating is easy to use: it does not require special or costly equipment to apply.

The 4224 epoxy coating protects electric circuits against corrosive chemicals, moisture, dirt, dust, thermal shocks, and scratches. This avoids corrosion and physical damages to electric components. It also insulates against high-voltage arcing, shorts, and static discharges.

- ▶ **Excellent Chemical and Abrasion Resistance**
- ▶ **Optically Clear:** Transmission @25 µm [1 mil] <4.5% loss in optical range
- ▶ **UV light stable:** non yellowing
- ▶ **Protects electronics** from chemicals corrosion, oil, moisture, fungus, and static discharges

4224	Cat. No.	Availability	Format
	4224-1	1125 mL (38 fl. oz)	liquid
	4224-2	4.5 L (1.2 gallon)	liquid
	4224-3	18.9 L (10.7 gallon)	liquid

4224 Specifications

Uncured Properties - Resin [Part A]

Working Pot life @25 °C [77 °F]	3 h
Full Cure @80 °C [172 °F]	2 h
Storage Temperature	25 °C [77 °F]
Service Ranges	
Service Temperature	-40 to +100 °C [-40 to +212 °F]
Max Withstand Temperature	+115 °C [+239 °F]
Max coverage per gallon (for 50 µm [2 mil])	<840 000 cm ² [<910 ft ²]

Cured Properties - Physical

Color	Clear
Solderability	No
Abrasion Resistance	Superior
Fungus Resistance	Good
UV Resistant	Yes
Optical Transmission Loss @ 25 µm (1 mil)	<4.5%

Cured Properties - Thermal

Glass Transition Temperature (ASTM D 115)	113 °C
Thermal Cycling Stability	-40 to 200 °C
Thermal Stability 24 h @ 80 °C (on Cu/Al substrates)	No yellowing
Thermal Stability 96 h @ 100 °C (on Cu/Al substrates)	Slight yellowing

Cured Properties - Electrical

Dielectric Strength (dry)	600 volts/mil
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Peelable Solder Mask

Synthetic acrylic latex. Designed to withstand fluxing, wave soldering, conformal coating and cleaning operations. Excellent for masking contacts, gold fingers, card edges and other desired areas. Contains no ammonia. Non corrosive to copper, gold, silver or presoldered surfaces. Opaque pink color turns red when cured. Can be used in water or solvent systems. Thixotropic paste.



- ▶ **Temporary, peelable**
- ▶ **Thixotropic, synthetic latex**
- ▶ **No ammonia**
- ▶ **Quick drying**

862	Cat. No.	Availability	Format
	862-250ML	250 ml (8.5 oz)	tube

Red Insulating Varnish

- ▶ Protect motor windings, small dry type transformers, and coils from arcing,
- ▶ Discharge and oxidation
- ▶ Class F thermal protection (20,000 @ 150°C)
- ▶ High dielectric strength



Protects electrical and electronic components from arcing and discharge. Thoroughly penetrates into windings and coils and seals out air, dust & moisture. Application: motor windings, transformers, switch board parts, field coils, stator windings, etc.

Dielectric Strength: 3000 volts/mil.

4228	Cat. No.	Availability	Format
	4228-55ML	55 ml (2 oz)	bottle
	4228-1L	945 ml (1 quart)	liquid
	4228-4L	3.78 litres (1 gallon)	liquid

Super Corona Dope

- ▶ For high voltage applications
- ▶ Insulates components circuits and assemblies
- ▶ Excellent arc and corona resisting properties
- ▶ Protects motor windings and coils from arcing and discharge
- ▶ Protects against moisture and oxidation

Excellent for high voltage applications. Protects electrical and electronic components from arcing and discharge. Thoroughly penetrates into windings and coils and seals out air, dust and moisture. Application: motor windings, transformers, switch board parts, field coils, stator windings, etc. Dielectric Strength: 4100 volts/mil when heat cure.



4226	Cat. No.	Availability	Format
	4226-55ML	55 ml (2 oz)	bottle
	4226-1L	945 ml (1 quart)	liquid
	4226-4L	3.78 litres (1 gallon)	liquid

Peelable Solder Mask

Our 863 Peelable Solder Mask is a latex product for temporary masking of circuit areas and contacts against solder, rosin, cleaning fluids. It consists of a high-temperature-resistant rubber latex.

863	Cat. No.	Availability	Format
	863-250ML	250 ml (8.5 oz)	tube
	863-1G	3.78 L (1 gallon)	tube

- ▶ High SIR (Surface Insulation Resistance) value
- ▶ Moderate odor
- ▶ Non-Flammable
- ▶ VOC Free
- ▶ Easy to peel
- ▶ Non-toxic

Specialty Coatings

protective coatings

Conformal Coating Stripper

Removes protective coatings, urethane, silicones, and acrylics. Also removes carbon, tar, adhesives, rubber, and some plastics.



- ▶ Extra strength
- ▶ Non-flammable
- ▶ Non-drip (gel type)

8310	Cat. No. 8310-55ML	Availability 55 ml (2 oz)	Format liquid
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Connector Coating

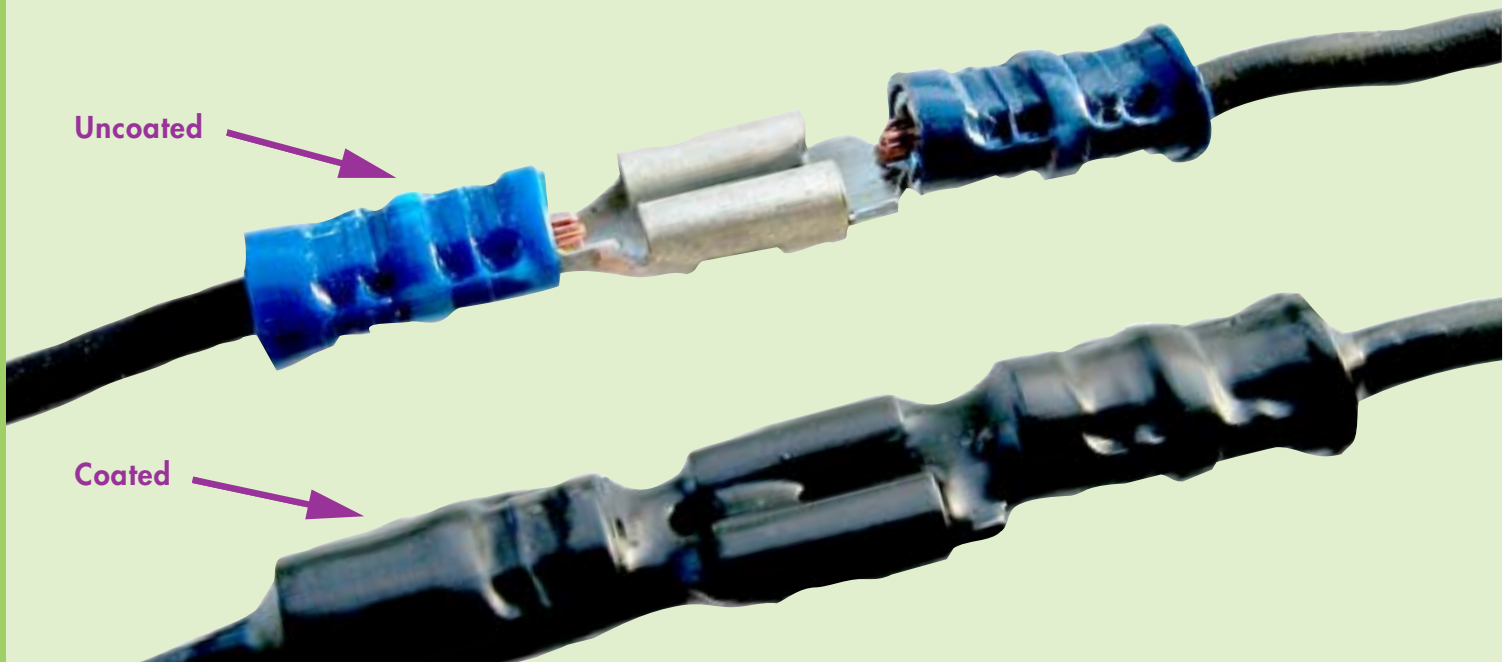
**CFIA
CERTIFIED**

A high performance replacement for standard electrical tape and shrink wrap. Seals, insulates and protects exposed wires, metal, and plastic. Forms a strong, pliable moisture resistant bond. Will not crack. Great for hard to get at areas. Tack free in minutes. Resists detergents, acids, alkalis, and sunlight. Product remains flexible from -34°C to 93°C (30°F to 200°F).



- ▶ Salt Spray tested (ASTM B-117)
- ▶ Moisture resistance (ASTM E-96)
- ▶ Weather tested (ASTM G-53-84)
- ▶ Dielectric strength (ASTM D-149): 1200 v/mil

4229	Cat. No. 4229-55ML 4229-1L 4229-4L	Availability 55 ml (2 oz) 1 litre (35 oz) 4 litre (1 gallon)	Format liquid liquid liquid
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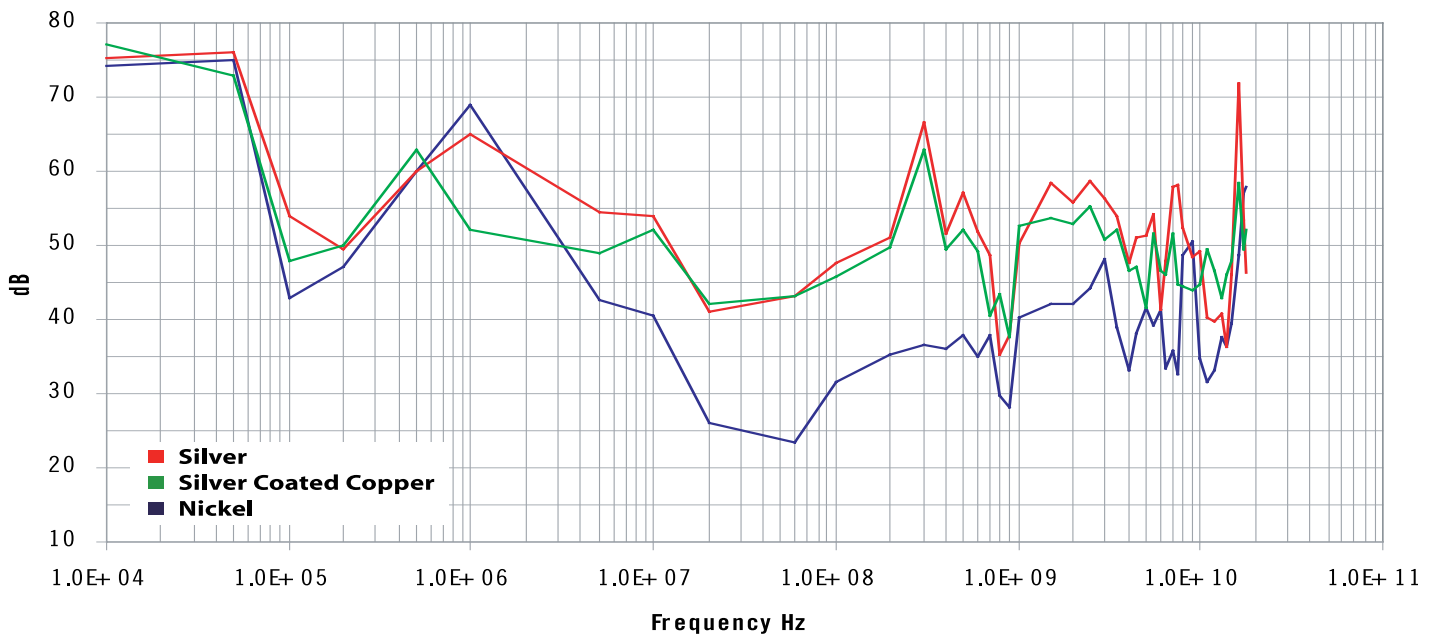
Super Shield™ Nickel Conductive Coating

Reduces or eliminates 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 flake. Has resistivity of 0.7 ohms · mil.

► **UL recognized (File #E202609)**



841	Cat. No.	Availability	Format
	841-340G	340 grams (12 oz)	aerosol
	841-900ML	1.65 kg (3.6 lbs)	liquid
	841-1G	6.75 kg (14.9 lbs)	liquid



Nickel Conductive Pen

- Resistivity: 1 Ohm · mil
- Quick drying
- Durable acrylic base pigmented with high purity flake
- Excellent for repairing and modifying printed circuits and EMI / RFI shielding applications



841-P	Cat. No.	Availability	Format
	841-P	8.5 g (5.1 mL)	pen