

RoHS Compliant 

LEAD-FREE



Your LEAD-FREE • RoHS Guide



TECHSPRAY®

*Quality Products for Electronic
Assembly and Rework*

Flux Removers



Mask

Wick

Soldering Tips



RoHS & LEAD-FREE...

HOW EUROPEAN REGULATIONS IMPACT YOU.

The European RoHS (Restriction of Hazardous Substances) regulation is forcing the electronics industry to transition to lead-free soldering by July 1, 2006. Electronic production and rework facilities are currently reviewing all aspects of their processes to ensure compliance and continued reliability of their products.

About WEEE & RoHS European Regulations

WEEE (Waste from Electrical and Electronic Equipment) is a European directive that makes the recovery and recycling of electrical and electronic equipment easier and less cost prohibitive. The goal is to encourage designers and manufacturers to create products with recycling in mind, which will lower the amount of hazardous materials in landfills.

RoHS is further legislation that supports the WEEE initiative by prohibiting use of the following materials from electronic devices:

- lead (Pb)
- hexavalent chromium (Cr (VI))
- cadmium (Cd)
- polybrominated biphenyls (PBBs)
- mercury (Hg)
- polybrominated diphenyl ethers (PBDEs)



By **July 1, 2006**, Europe prohibits these substances from use in electrical and electronic devices (except for exempted applications). Components, solder, and other materials that remain on these devices need to be free of these specific materials if the end-products are intended to be sold within Europe.

Impact of Lead-Free Soldering on Circuit Board Assembly

Lead solder is the most common material used for soldering electronic components in the manufacture of printed circuit boards (PCB). Since lead is prohibited by RoHS, the electronic industry has been forced to develop lead-free soldering alternatives.

The requirement for lead-free soldering has created challenges in many aspects of PCB manufacture and rework including:

- Surface Mount Technology (SMT) ovens must heat PCB's over 600°F (316°C) compared to 500°F (260°C) for lead.
- Hand solder tips must be heated over 750°F (399°C) versus 600°F (316°C).
- PCB's must be heated for a longer period of time.
- Fluxes often need to be more active, increasing the caustic nature of residues.

Techspray's Value to You

Techspray offers quality products that have been proven to withstand harsh, lead-free soldering conditions and enhance your productivity. Let Techspray be your guide for this lead-free/RoHS transition!

For more information on the RoHS regulation and the impact on PCB assembly, go to <http://leadfree.ipc.org> or <http://www.nedassoc.org>.

Please visit www.techspray.com/leadfree.htm to complete your RoHS / Lead-Free Production Process Evaluation, or fill out the form on the back of this guide



The Best Flux Removers for Lead-Free

RoHS Compliant 
"Always was...always will be"



Flux removers (also called defluxers) remove flux residues left by manufacture, rework, or repair of printed circuit boards. Residues from higher, lead-free temperatures are more baked on and harder to clean. G3[®] and Ecoline[™] flux removers have been proven effective at removing fluxes baked on at lead-free temperatures.

Micro-components and fine pitch leads are delicate and easily damaged, so brushing and scrubbing should be avoided if possible. Both G3 and Ecoline have a powerful spray and a strong solvent that blasts off residues and cleans under components without brushing.



G3 and Ecoline fluxers easily clean tough baked-on rosin flux contaminants in 3-5 seconds.

Cleaning with G3 and Ecoline is so effortless that it actually saves you money...

- Save labor expense - less time scrubbing and cleaning
- Save on solvent usage - usually a short 5 second burst is all that is needed
- Save on consumables - wipes, brushes, and swabs are optional for most cleaning applications



Flux Remover No Other Aerosol Cleaner Can Match the Cleaning Ability of G3!

Match G3 against any other non-flammable solvent and prepare to be amazed! The toughest greases, fluxes, and other soils just fall away after one short burst! No other cleaner can do all of this, and still be safe for electronic components and the people cleaning them.

Powerful enough to clean all flux residues, even when they are baked on at high, lead-free temperatures. Designed to remove R, RA, RMA, and SA type flux residues after high temperature reflow.

- RoHS Compliant - Lead-Free Compatible
- Non-Flammable
- Safe on Most Plastic Components and Packaging
- Rapidly Evaporating
- Zero Residue
- Non-Ozone Depleting



- 1631-5S 5 oz. (142g) Aerosol w/brush attachment
- 1631-10S 10 oz. (283g) Aerosol - NEW!
- 1631-16S 16 oz. (454g) Aerosol
- 1634-12S 12 oz. (340g) Aerosol - Designed for No-Clean
- 1638-G 1 gal. in Glass Bottle
- 1638-5G 50 lbs. (22.7kg) in Metal Drum
- 1638-54G 580 lbs. (263.1kg) in Metal Drum

The use of these products for cleaning are subject to U.S. Patent No. 5,902,412 and use is restricted by Tech Spray, L.P.

Ecoline Flux Remover

All the Cleaning Power Without the Price!

If flammability is not an issue, Ecoline Flux Remover offers superior cleaning ability at a lower price. Powerful enough to clean all flux residues, even when they are baked on at high, lead-free temperatures. Designed to remove R, RA, RMA, and SA type flux residues after high temperature reflow.

- RoHS Compliant - Lead-Free Compatible
- Flammable
- Safe on Most Plastic Components and Packaging
- Rapidly Evaporating
- Zero Residue
- Non-Ozone Depleting



- 1621-4S 4 oz. (113g) Aerosol w/brush
- 1621-10S 10 oz. (283g) Aerosol
- 1621-G 1 gal. (3.8L) in Metal Can
- 1621-5G 33 lbs. (15kg) in Metal Drum
- 1621-54G 340 lbs. (154.2kg) in Metal Drum



Cleanest NO-CLEAN Wick in the Industry!

RoHS Compliant "Always was...always will be"



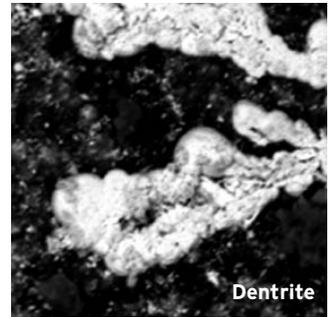
Desoldering braid (also called wick) is pre-fluxed copper that is used to remove solder, which allows components to be replaced and excess solder to be removed.

Lead-free desoldering requires higher temperatures, baking on flux residues and making them difficult to remove. If not thoroughly cleaned, residue contaminants can cause quality and service issues.

Techspray No-Clean wick avoids these problems. Coated with proprietary flux, it only leaves a slight clear residue that does not cause service issues and is barely noticeable. This makes cleaning after using Techspray No-Clean wick strictly optional.

Prevent Latent Failures

Techspray No-Clean wick does not leave behind ionic flux residues on the circuit board that can collect and form branches called "dendrites". Other fluxes, if not cleaned properly, can cause dendrites that grow over time (see A, B) and eventually cause short circuits between traces or leads (C). Latent failures lead to costly returns and lower the quality perception of your products.



DESOLDERING BRAID SELECTION CHART

HOW TO ORDER:

Specify "Part Number" and "Length."

For example: 1801-5f for 5 feet of #1 white desoldering braid

All lengths are ± 2"

SPECIFICATIONS: Meets or exceeds

- MIL-F-14256
- NASA NHB 5300, 4 (34-1)
- NASA NPC 200-4
- NASA SP5002, 1821: HP 8690-0588 1823: HP 8690-0577
- IPC Standard-J-STD-004

#0 SMT GREY	#1 WHITE	#2 YELLOW	#3 GREEN	#4 BLUE	#5 BROWN	#6 RED
.026" (0.6mm)	.035" (0.9mm)	.055" (1.4mm)	.075" (1.9mm)	.098" (2.5mm)	.130" (3.3mm)	.193" (4.9mm)

No-Clean Desoldering Braid

The cleanest no-clean braid in the industry. The proprietary flux formula is specially designed to avoid catastrophic and latent PCB failures caused by ionic flux residue.

1827	1814	1815	1816	1817	1818	1819
5F 10F	5F 10F 25F 50F 100F 500F	5F 10F 25F 50F 100F 500F	5F 25F 100F 500F			
ESD Safe Bobbins	1820 5F 10F 25F 50F 100F	1821 5F 10F 25F 50F 100F	1822 5F 10F 25F 50F 100F	1823 5F 10F 25F 50F 100F	1824 5F 10F 25F	1825 5F 25F

Also Available & Effective with Lead-Free Solders

Pro Wick® Desoldering Braid (pure rosin)

For the fastest wicking action, rosin flux coated braid is ideal for high volume PCB production/repair environments. Boards should be cleaned after desoldering process. Compatible with lead-free solders.

1826	1801	1802	1803	1804	1805	1806
5F 10F	5F 10F 25F 50F 100F 500F	5F 10F 25F 50F 100F 500F	5F 25F 100F 500F			
ESD Safe Bobbins	1808 5F 10F 25F 50F 100F	1809 5F 10F 25F 50F 100F	1810 5F 10F 25F 50F 100F	1811 5F 10F 25F 50F 100F	1812 5F 10F 25F	1813 5F 25F

Unfluxed Desoldering Braid

Generally used by customers who use water-soluble flux for aqueous processes. Compatible with lead-free solders.

1830	1831	1832	1833	1834	1835
5F 10F	5F 10F 25F	5F 10F	5F 10F	5F 10F	5F
ESD Safe Bobbins					



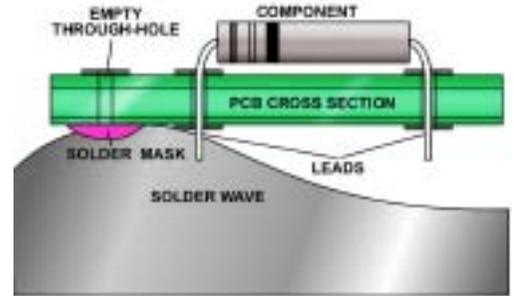
Wondermask® Effective at Lead-Free Temperatures

RoHS Compliant
"Always was...always will be"



Temporary solder mask is applied over PCB through-holes and pads to prevent soldering the protected areas in a wave soldering process. Wondermask® is designed to apply smoothly, dry quickly, withstand high, lead-free temperatures, and then be removed easily.

Lead-Free processes require a longer preheat cycle and hotter solder



Wondermask® Peelable Masks

Applied by hand, pneumatically, or by template screening (not recommended for silk screening). Able to withstand soldering and washing processes and is then easily peeled off.

Wondermask P

Low-odor, synthetic acrylic latex mask is designed to withstand fluxing, wave soldering, and cleaning operations. Contains no offensive ammonia and is non-corrosive to copper. The color changes from a pink to a bright, translucent red to indicate the mask is dry. This prevents breakage or residues caused by peeling mask that is not fully cured.

- RoHS Compliant - Lead-Free Compatible
- Easily Peelable
- Can be Cured in Preheat Cycle
- Cure Indicator
- Non-Corrosive
- Low Odor



2211-85Q

- 2211-85Q 8 oz. (237mL) squeeze bottle
- 2211-G 1 gal. (3.8L) in plastic jug
- 2211-5G 5 gal. (18.9L) in plastic pail
- 2211-54G 54 gal. (204.4L) in plastic drum

Specifications: Ford Tox #039772. Meets MIL-STD-2000 paragraph 5.3.18 parts a, b, and d.

Wondermask PL Latex

Natural latex mask is designed to withstand fluxing, wave soldering and cleaning operations. Dries to the elasticity of a rubber band, which prevents breakage during removal.

- RoHS Compliant - Lead-Free Compatible
- Easily Peelable
- Quick Drying
- Can be Cured in Preheat Cycle
- Highest Strength to Avoid Breakage



2218-85Q

- 2218-85Q 8 oz. (237mL) squeeze bottle
- 2218-G 1 gal. (3.8L) in plastic jug
- 2218-5G 5 gal. (18.9L) in plastic pail
- 2218-54G 54 gal. (204.4L) in plastic drum

Specifications: Meets MIL-STD-2000 paragraph 5.3.18 parts a, b, and d.

Wondermask® Washable Masks

Able to withstand soldering processes and is then washed off in the aqueous cleaning system.

Wondermask WSOL

Designed specifically for use in closed-loop aqueous cleaning systems and will not clog filters. Can be hand or pneumatically applied.

- RoHS Compliant - Lead-Free Compatible
- Safe on Ion Beds & Filters in Closed-Loop Cleaning Systems
- Can be Cured in Preheat Cycle
- Water-Soluble
- Non-Corrosive
- Low Odor



2204-85Q

- 2204-85Q 8 oz. (237mL) squeeze bottle

Wondermask W

Quickly removed in batch cleaning and in-line water systems. Available in different viscosities to fit specific application methods.

- RoHS Compliant - Lead-Free Compatible
- Can be Cured in Preheat Cycle
- Water-Soluble
- Non-Corrosive
- Low Odor



2205-85Q

- Hand Applications**
- 2205-85Q 8 oz. (237mL) squeeze bottle
 - 2205-G 1 gal. (3.8L) in plastic jug
- Robotic & Pneumatic Applications**
- 2206-G 1 gal. (3.8L) in plastic jug
- Hand Applications**
- 2207-G 1 gal. (3.8L) in plastic pail
 - 2207-5G 5 gal. (18.9L) in plastic pail

Specifications: Meets MIL-STD-2000 paragraph 5.3.18 parts a, b, and d. 2206: HP 8500-4214

Please visit www.techspray.com/leadfree.htm to complete your RoHS / Lead-Free Production Process Evaluation and submit the form below

Step 1 – Please provide contact information

Company: _____ Contact Name: _____

Address: _____ City/State: _____ Zip Code: _____

Country: _____

Phone: _____ Fax: _____ E-mail: _____

Distributor: _____ Distributor Sales Rep.: _____

Techspray Representative: _____

Step 2 – What PCB production methods are you using: SMT Printing Wave Soldering Hand SolderingAre you currently lead-free/RoHS compliant? Yes No

If no, what is your target date for conversion? _____

Step 3 – What products are you using (brand, product name or part #):

Flux remover: _____

Desoldering braid: _____

Temporary solder mask: _____

Soldering/desoldering tips: _____

Solder pots: _____

Step 4 – Please specify any problems you are having with the lead-free transition:

Step 5 – After completing and submitting your RoHS / Lead-Free Production Process Evaluation, we will review whether there are alternative products that will help with your compliance, efficiency, and cost. A representative will then be in touch to bring in test samples for your evaluation.

Distributed By:**Thank you for your time and efforts.**For more information: 800-858-4043 | tsales@techspray.comMSDS/Specs: www.techspray.com