Safety Wash for Electronics 4050 Technical Data Sheet

Description

The 4050 *Safety Wash for Electronics* is a high purity, printed circuit board cleaner and solvent. It uses a blend of high purity ethyl alcohol, isopropyl alcohol, and ethyl acetate components designed not to leave solvent contaminations behind.

The alcohol and organic solvent blend is sufficiently strong to dissolve light to moderate grease and organic contaminants, as well as being polar enough to remove ionic flux residues and inorganic soils. It is an excellent choice when IPA alone is not powerful enough to dissolve greasy contaminants.

Applications & Usages

The 4050 cleaner is strong enough to effectively remove light greases, oils, smoke, inks, and most fluxes. Since the 4050 is safe for most plastics (see compatibility chart on page 2), seals, ceramics, and printed circuit board components, it is used heavily in the electronics industry.

ATTENTION! Consumer Product VOC Dilution Requirements
Residential or institutional users in California and other states (IL, IN, MI, OH, CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA, DC, UT) with Electronic Cleaners 75% VOC limits must dilute the product 3:1 with water or acetone prior to use.

Storage Properties

Properties	*Value*
Shelf Life @22 °C [72 °F]	5 y
Storage Temperature [a)]	-20 to 40 °C [-4 to 104 °F]

a) Storage below zero is not necessary. Cool, dry, and well ventilated area recommended.

Properties

Physical Properties	*Value*
Odor	Alcohol like
Color	Colorless
Specific Gravity	0.79
Vapor Density	≥1.6
Vapor Pressure	6 kPa [44 mmHg]
Boiling Point	>78 °C [>172 °F]
Flash Point	13 °C [55 °F]
Auto-ignition	>363 °C [>685 °F]
Flammability	Highly flammable liquid and vapor

Date: 23 May 2023 / Ver. 1.02

Solvation Parameters	Value	
Hansen Solubility Parameters	$(MPa)^{½}$	$[cal/cm^3]^{½}$
Total	23.6	[11.5]
Non-Polar	15.8	[7.7]
Polar	6.2	[3.0]
Hydrogen Bonding	16.4	[8.0]
Solubility in water (%wt)	Highly miscible	
Solubility for water (%wt)	Highly miscible	

Note: Values based on typical literature values for each component

Compatibility

It is generally compatible with plastics, PCB components, and plant fibers.

***Substrate Compatibility*:** Consult the 4050 compatibility chart for a tentative compatibility list. These compatibility ratings should be considered as tentative due to variations in plastic manufacturers' formulations and additives, as well as the processing conditions during cleaning.

ATTENTION! Always perform a compatibility test on a non-critical area or a representative test substrate prior to use. Test even if the chart predicts high compatibility since modern parts may incorporate undeclared materials, plastic blends, protective coatings, and decorative coatings.

4050 Compatibility Chart

Plastic type	Resistance
Epoxy	Excellent
ABS (acrylonitrile butadiene styrene	Fair
PMMA (Acrylic and Plexiglass)	Severe Effect
PVC (Polyvinyl chloride)	Good
HD-PE (high density polyethylene)	Excellent
LD-PE (low density polyethylene)	Excellent
PP (polypropylene)	Excellent
PS (polystyrene)	Fair
PC (Polycarbonate)	Excellent
Nylon	Severe effects

Note: Rating is given for room temperature only. Heating the solution generally decreases the chemical resistance.

LEGEND
Excellent = Negligible chemical attack over long exposures
Good = Slight attack with minor absorption over long exposures
Fair = Moderate attack with swelling, softening, loss of strength (may tolerate short term exposures)
Poor = Not recommended due to possible crazing, cracking, discoloration, or loss of strength
Severe Effect = Decomposition or dissolution after short exposures

Application Instructions

Follow the procedure below for best results.

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To clean residues

1. Imbibe clean cloth.
2. Wipe surface to be cleaned with cloth.
   OR
3. Rinse area by pouring neat solution over it, with or without the use of a hog hair cleaning brush.
   a. Ensure that wash runs off the circuit board along the shortest unencumbered path to prevent redeposit of solvated residues.

   OR
4. (Exceptionally) Immerse component in a container filled with a fresh 4050 solution.

ATTENTION!
Recap the bottle immediately after use to avoid water absorption.

Do NOT use in squeezable wash bottles since these containers allow humidity-absorption contamination.

ATTENTION!
Immersion baths will immediately start to absorb moisture from the air, so the lifespan as a water-free solvent is very short.

Packaging and Supporting Products

Cat. No.	*Packaging*	*Net Volume*	*Net Weight*	*Packaging Weight*
4050-1L	Bottle	1 L 1.05 qt	787 g 1.73 lb	5.5 kg [a] 12 lb [a]

a) Pack of 6

Supporting Products

- *Acetone:* Cat. No. 434-1L, 434-4L
- *Hog Hair Cleaning Brush*: Cat. No. 852
- *Large Hog Hair Cleaning Brush*: Cat. No. 853

Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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Disclaimer

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 Ltd.* does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

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