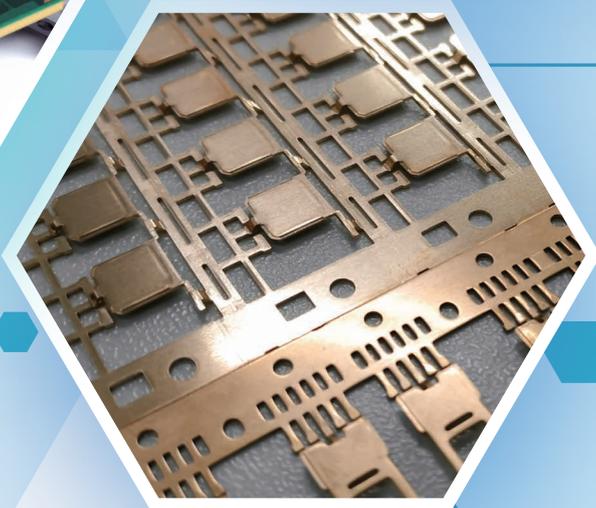
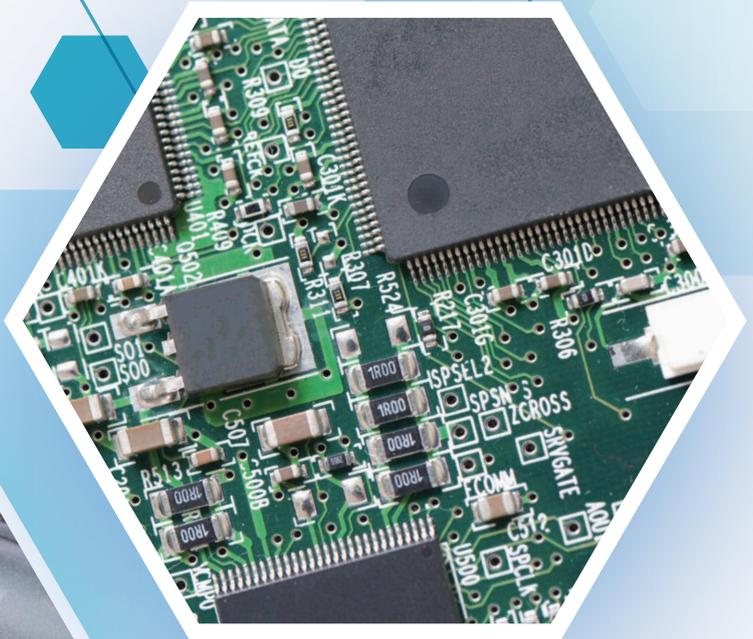


Flux cleaning system

essential for high-density assembly

MICROCLEANER®

Cleaning liquid : MICROCLEAN ECO & MARKLESS® ECO Series



Creating Unique Materials

KAKEN TECH®

History of deflux and KAKEN TECH strides

- Magic liquid "CFC" (CFC-113) becomes popular for deflux.
- The Montreal Protocol was adopted in 1987 to promote CFCs removal.
- Semi-aqueous, 2nd-generation CFCs (HCFC) and hydrocarbon cleaning systems were on the rise.
- In 2006, the RoHS Directive was enacted and the shift to lead-free solder was underway.
- Regulations on chemical substances have been enhanced such as the stop of the production of HCFCs and the addition of GB standards for cleaning agents to China's VOC regulation.
- The widespread use of high-speed, high-capacity communications makes low dielectric loss in circuits even more important.



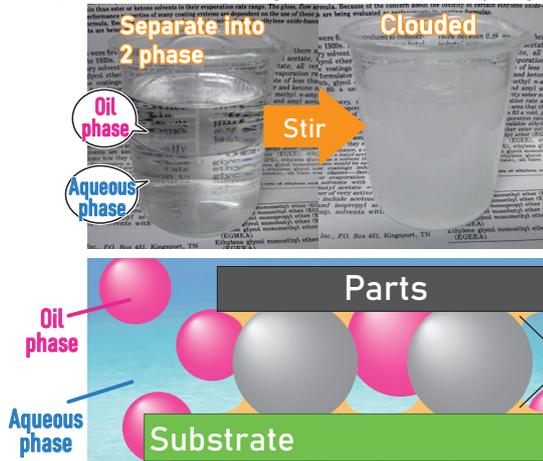
KAKEN TECH strides

- Establish cleaning evaluation technology focusing on low dielectric loss.
- Developed MICROCLEAN, cleaning liquid and MARKLESS®, rinse liquid, with low dielectric loss for the era of high-speed and large-capacity communications.
- Developed MICROCLEANER®, a cleaning equipment that recycles rinse liquid inside equipment.
- Developed cleaning liquid for lead-free solder before anyone else assuming the difficulty of cleaning them.
- Developed MICROCLEAN ECO, a low-VOC cleaning liquid that addresses environmental issues.
- Developed MICROCLEAN ECO & MARKLESS® ECO series, high-performance and low-VOC cleaning liquid that achieve both higher precision cleaning and environmental friendliness.

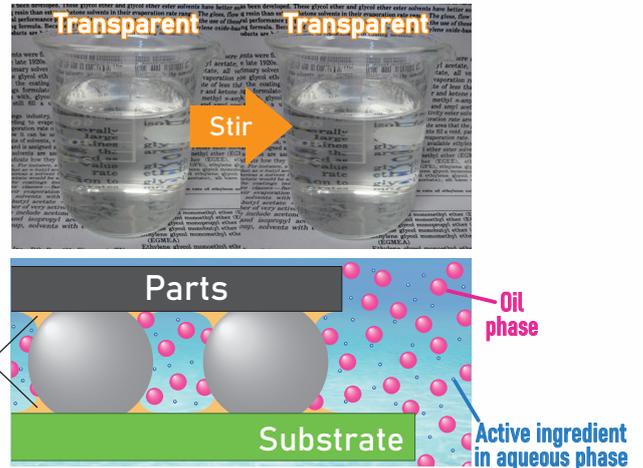
Nano-sized powerful cleaning effect

Our conventional low-VOC cleaning liquids, which separates in oil and aqueous phase, have high cleaning property for flux residue (hereinafter flux), which is a compound of non-polar and polar components, even when they contain 70% water. MICROCLEAN ECO series, which is a further evolution of our technology, has a transparent and uniform appearance due to the nano-sized oil phase, and powerfully cleans flux in narrow gaps that were difficult to clean.

[Conventional separated cleaning liquid]



[MICROCLEAN ECO series]



Improved cleaning and replacement speed for narrow gaps!

The nano-sized oil phase can easily penetrate into narrow gaps and penetrated oil phase has the large specific surface area and much chance of contact with flux, which greatly improves the cleaning speed. Even after flux is dissolved, nano-sized effect keep cleaning liquid low viscosity, and easily replace to surrounded cleaning liquid, allowing the contamination to be quickly discharged.

Improved removal of metal salt and metal oxide films!

Due to the active ingredients in the aqueous phase, excellently remove metal salts such as Sn, Bi, and In, which are difficult to clean. It is also excellent in removing metal oxide films such as Cu.

Easy concentration management!

Maintains the cleaning property in a wide range of moisture concentrations between 50-80%.

MICROCLEAN ECO & MARKLESS® ECO series

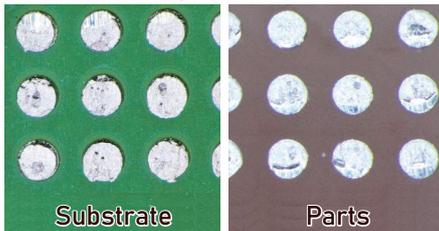
Excellent cleaning and particle removal in narrow gaps

With new mechanism of cleaning, flux even in a narrow gap of 30µm or less can be cleaned. Also, they excellently remove particles such as minute solder balls, sebum, and fine particles that are hard to remove with conventional flux cleaning liquids.

Narrow gap flux cleanability

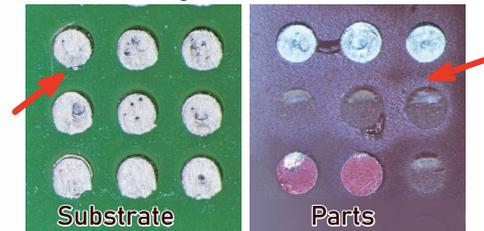
Test piece: PKG parts (10mm x 10mm) / Gap 30 µm

【After cleaning】



Cleaning condition : MICROCLEAN ECO series
50°C / 10 min
High-speed liquid flow

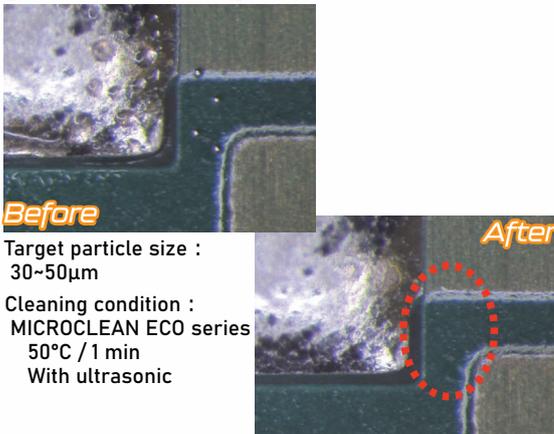
【After cleaning】



Cleaning condition : Semi aqueous cleaner
60°C / 10 min
High-speed liquid flow

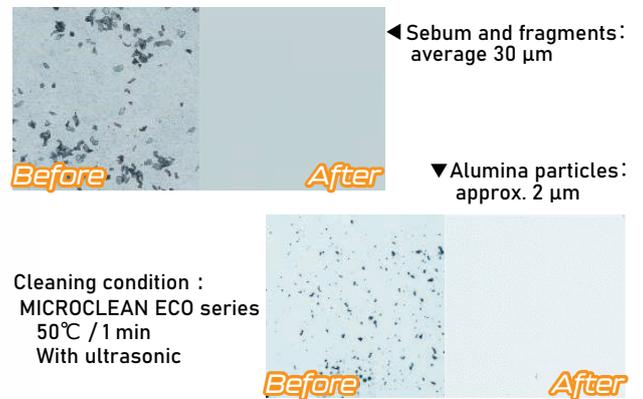
Particle removability

【Minute solder ball】



Target particle size :
30~50µm
Cleaning condition :
MICROCLEAN ECO series
50°C / 1 min
With ultrasonic

【Foreign particles adhering in the process】



Cleaning condition :
MICROCLEAN ECO series
50°C / 1 min
With ultrasonic

Eco-friendly low VOC, and non-Dangerous goods

About 70% of the ingredients are water, which reduces VOC (Volatile Organic Compounds) emissions in the drying process and volatilization. The product has no flash point, and does not fall under the United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG), so it can be transported as a normal product.

	f.p	UNRTDG		VOC regulation in China (GB38508-2020)
		UN Class	UN No.	
Cleaning liquid MICROCLEAN ECO	None	N/A	N/A	Semi-aqueous cleaning agent
Rinse liquid MARKLESS® ECO				

Non DG

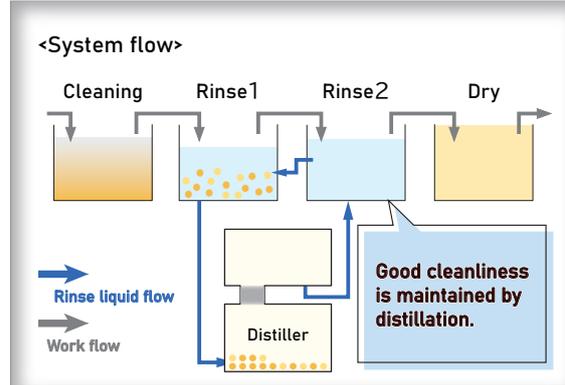
Low VOC

MICROCLEANER[®] specification



Less waste liquid by liquid distillation!

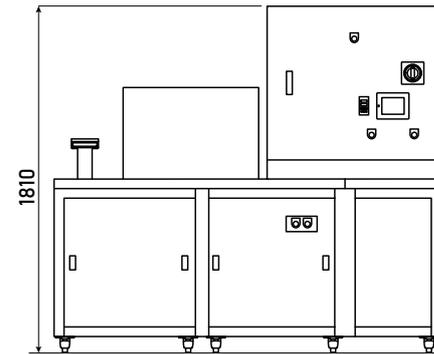
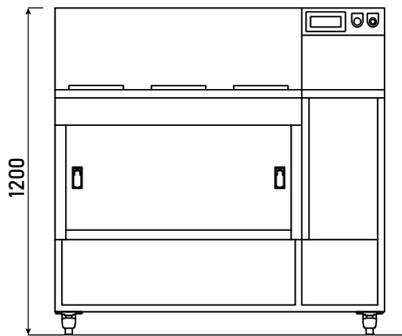
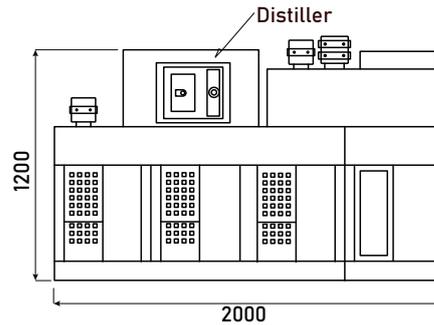
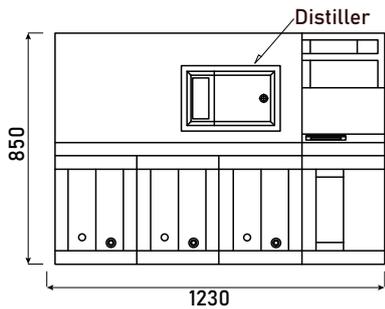
MARKLESS[®] ECO series is continuously recycled in built-in distiller and almost no liquid replacement is required!
In addition, ECO series reduces the amount of waste liquid by 85% compared to our conventional rinse liquid (which is hydrous alcohol-based), which has a good reputation for emitting less waste liquid.



Automatic machines
also lined up!



Video now available!



Unit : mm

Model	MC3HD-1.5E	MC3HD-6E
Power supply	Three phase 200V	Three phase 200V
Tank configuration	Cleaning, Rinse1, Rinse2, Dry	Cleaning, Rinse1, Rinse2, Dry
Processing capacity	A5 size 280 sheets / 8h	A4 size 600 sheets / 8h
Tank opening size	W 100 x D 300 (mm)	W 200 x D 500 (mm)
Tank capacity	Approx. 9 L	Approx. 50 L
Applicable substrate size	MAX. 200×165 (mm)	MAX. 370×345 (mm)
Distiller	Built-in Distiller	Built-in Distiller
Additional equipment required	Ventilation, Coolant supplier	Ventilation, Coolant supplier



Creating Unique Materials

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Visit our website
for more information!

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2024.07