

Bromine base

## Cleaning solvent for metal and PCB

Replacement of Trichloroethylene and Methylene chloride

*e Clean21 series*

Fluorine base

## Cleaning solvent for PCB, rubber and plastic

Replacement of HCFC-141b and HCFC-225

*e Clean21 F series*

Resin Dissolving

## Resin dissolving agent

Replacement of dichloromethane

*e Solve21 series*

Clean technology to think about environment of the earth

# Cleaning solvent for metal and PCB

Replacement of Trichloroethylene and Methylene chloride

## e Clean21 series

Bromine base

GWP : 0.0001 (HGWP) / ODP : 0.006 / Longevity in the atmosphere: 10~11 days

e Clean21 series has nearly the same detergency and dry speed as trichloroethylene and it has no flash point so it is easily to deal with. It does not contain chlorinated solvent or chemical, which act against Preventive Regulation for Organic solvent. Moreover, it is earth-friendly because of its extremely low ODP and GWP. It can be used with cleaning equipment for chlorine. By installing recycle system to the cleaning equipment, it can help to obtain and maintain ISO14000.

### Features

- A earth-friendly solvent with extremely low Ozone Depletion Point (ODP) and Global Warming Potential (GWP), short lifetime in atmosphere.
- Physical properties and detergency are almost same as trichloroethylene.
- Your existing cleaning equipments for trichloroethane can be used with this product.
- It does not affect most of metal, resin, ceramics and glass.
- Nonflammable, easy separation to water and good permeability.
- Fast drying for better work efficiency.
- Low running cost with recycling uses.
- Low odor.
- Vapor cleaning possible.

### Usage

- Cleaning solvent for metal, automobile parts, PCB and fine electronics parts
- Dry solvent
- Diluting solvent for polymers
- Water-replacement agent, etc.

### Product Lineup

Model	Sort	Applications	Cleaning form
21N	Multi-purpose	Cleaning for metal, plastic, rubber and glass	Vapor or Room temperature cleaning
21L	Multi-purpose and low odor	Cleaning for metal, plastic, rubber, glass and resist ink	Vapor or Room temperature cleaning
21A	Multi-purpose	Cleaning for aluminum, copper and brass	Vapor or Room temperature cleaning
21RA	Multi-purpose	Cleaning of flux for lead-free solder and dissolving agent for UV ink	Vapor or Room temperature cleaning
21EA	Multi-purpose	Cleaning for water-soluble flux and urethane resin	Vapor or Room temperature cleaning
21E	Multi-purpose and low odor	Cleaning for flux	Vapor or Room temperature cleaning
21S	Water-soluble correspondence	Cleaning for water-soluble cutting (Coolant use)	Room temperature cleaning
21R	Low odor	Cleaning for roller printing ink	Room temperature cleaning
21D	Dry type	Drying after washing by hydrocarbon, water-replacement after washing by water	Vapor or Room temperature cleaning

# Cleaning solvent for PCB, rubber and plastic

Replacement of HCFC-141b and HCFC-225

## *e Clean21 F series*

Fluorine Base

—————Ozone Depletion Point (ODP) is ZERO\*—————

\*Exception 21F-1 and 21F-2

e Clean21F series is fluorinated solvent based cleaner for the next generation. It is developed replacing HCFC-141b and HCFC-225; it is less toxic and earth-friendly due to its zero ODP and low GWP. You could clean variety of targets such as PCB, electronics parts, precision parts, metal parts, plastic parts, rubber parts, ceramics, glass and so on. Its property of small surface tension enables to clean into finer spots. You could also use your current cleaning equipments for Freon and hydrocarbon continuously without any major changes. By installing recycle system to the cleaning equipment, it can help to obtain and maintain ISO14000.

### Features

- Earth-friendly due to almost zero ODP and GWP.
- Compared to HCFC-141b and HCFC-225, physical properties of products are almost the same and the detergency is better.
- It does not damage to most of plastic and rubber parts.
- Nonflammable and easy separation to water. It goes into finer spots due to small surface tension.
- Fast drying improves your work efficiency.
- Your existing cleaning equipment for trichloroethane and Freon can be continuously used with this product.
- Recycle multiple times, that brings low running cost.
- Low odor.
- Vapor cleaning possible.

### Usage

- Cleaning solvent for PCB, plastic and rubber parts, precision parts, metal and electronics parts
- Dry solvent
- Stain remover for cloth
- Diluting solvent for polymers, etc.

### Product Lineup

Model	Sort	Applications
21F	Desiccant	Replacing agent or desiccant for water and hydrocarbon compound
21F-1-T	Multi-purpose (Vapor Cleaning)	Cleaning for printed circuit board, plastic, rubber, metal, glass
21F-1	Multi-purpose (Vapor Cleaning)	Cleaning for printed circuit board, plastic, rubber, metal, glass
21F-2	Multi-purpose (Vapor Cleaning)	Cleaning for printed circuit board, plastic, rubber, metal, glass
21F-5	Multi-purpose (Vapor Cleaning)	Cleaning for printed circuit board, plastic, rubber, metal, glass
21F-6	Multi-purpose (Room temperature Cleaning)	Cleaning for printed circuit board, plastic, rubber, metal, glass

# Resin dissolving agent

Replacement of dichloromethane

Resin Dissolving

## e Solve21 series

Dissolving for Acrylic resin, Silicone, Polyurethane resin, Epoxy resin, Polyester, ABS resin and Polycarbonate.

### Features

- Environment-friendly dissolving agent. Ozone depletion point (ODP) is 0.013; global warming potential (GWP) is 0.0001.
- Superior for dissolving cured resin, silicone, polyester, ABS resin, polycarbonate, etc.
- Nonflammable and easy separation to water.
- Fast drying speed for easy operation.

### Usage

- Dissolving agent for cured resin, UV ink, paint, quick-drying glue (superglue) and resist ink.
- Cleaning solvent for uncured resin and flux.
- Resin glue

## e Solve 21 series influence to plastics and rubbers (6 hours immersed at 20°C)

Products		21N	21RU	21RA	21RA-1	21RA-3	21RS	Dichloro-methane
Polyurethane resin	uncured	◎	◎	◎	○	○	×	◎
	cured	×	×	×	×	×	×	×
Epoxy resin	uncured	○	◎	○	○	○	×	◎
	cured	×	×	×	×	×	×	×
Acrylic resin	uncured	○	○	○	◎	◎	×	◎
	cured	×	×	×	○	○	×	◎
Polyester	uncured	○	○	◎	◎	◎	×	◎
	cured	×	×	×	○	◎	×	◎
Polycarbonate	uncured	◎	○	◎	○	○	×	◎
	cured	◎	×	◎	○	○	×	◎
Silicone	uncured	◎	○	◎	○	○	◎	◎
	cured	×	×	×	×	×	◎	×

**ATTN:** Products will not dissolve the resin if dichloromethane cannot dissolve it, though 21RS dissolves cured silicone.

<Dissolving agent against resins>

◎ : Very good

○ : Good

× : Inapplicable