

Big-Blast™ EU Precision Duster Micro-Freeze™ EU Circuit Chiller



Micro-Freeze™ and Micro-Blast™ are drop-in replacements for old-style, high GWP dusters and freeze sprays.

- **Totally New Chemistry for Circuit Cleaning and PCB Troubleshooting**
- **F-Gas Rule Compliant**
- **REACH, ELINCS Pre-Registered**
- **Nonflammable for Safety**
- **Available Only from MicroCare**

General Information

These two products are the latest innovation in freeze sprays and precision dusters. They are the first electronics cleaners in the world to feature tetrafluoropropene, an innovative new

propellant with a very low global warming potential. Available first from MicroCare and only in Europe, these products comply with the EU's new regulations to minimize global warming caused by industrial gases (the "F-Gas rules").

MicroCare's products are excellent choices for trouble-shooting, cleaning and repairing electronics. They can be used on electronics, connectors, medical devices, keyboards, keypads, mechanical parts and hard-to-clean surfaces.

The propellant is double-filtered for maximum purity. The products are noncorrosive, residue-free and, unlike less expensive products, are not flammable which enhances safety.

Freeze Sprays

Micro-Freeze™ chills components instantly. It meets the mil spec target of -40°C and can get as low as -60°C under optimal conditions. Use Micro-Freeze EU to cool components, to test them for stress fractures and for trouble-shooting intermittent failures on PCBs. This product is StatZAP™ compatible (#MCC-ZAP), for improved ESD control.

Precision Dusters

Big-Blast™ delivers reliable cleaning of dry contaminants. Dry and nonabrasive, Big-Blast quickly removes dust, lint, dirt and other dry material from electronics and mechanical devices. Each can is equipped with a high-flow valve which enables significantly more "pushing power" than traditional aerosols. This product is not StatZAP™ compatible.

Product Details

Chemical Family	Tetrafluoropropene HFO
	(CAS #1645-83-6; ELINCS #471-480-0)
Aroma	Slight, ethereal
Boiling Point	-19°C
Evaporation Rate	>>1
Vapor Pressure @ 20°C	4220 hPa

Micro-Freeze will deliver circuit chilling to as low as -40°C/-40°F under all conditions and as low as -60°C/-76°F under optimal conditions with a skilled operator.

Health, Safety & Environmental Data

Toxicity Rating (ppm, 8-hr. TWA, REL)	1000
	(Manufacturer specified)
Flashpoint (TCC)	None
Safety Rating	Nonflammable
	(ASTM ME-681, EU A-11)
NFPA Ratings	Health: 1; Fire: 0; Reactivity: 1
Ozone Impact	Zero
Non-Exempt Organic Content (g/L)	Zero
Global Warming Rating (100 yr)	6
REACH & ELINCS Compliant (See MSDS)	Yes
RoHS and WEEE Compliant	Yes
F-Gas Compliant	Yes

Packaging

Micro-Freeze™ Circuit Chiller	300 g MCC-FRZ107
Big-Blast™ Precision Duster	300 g MCC-AIR107

These two products replace all earlier versions of these products packaged with HFC-134a. Packaged in cases of twelve (12) cans per box. Shelf life is unlimited. The propellant in these aerosols is tetrafluoropropene, one of the first F-gas rule compliant propellants. Tetrafluoropropene is a drop-in replacement for HFC-134a (the industry standard for this class of products) and/or flammable HFC-152b. Tetrafluoropropene has a global warming impact of six (as opposed to a rating of 1,400 of HFC-134a) and does not contain smog-causing VOCs. The tetrafluoropropene formulation is protected under patent-pending status in the U.S.

Importantly, these products do not require the extra-strength high-pressure aerosol cans competing products use, and so are easier and less expensive to ship.

Micro-Freeze is compatible with the StatZAP™ dispenser, #MCC-ZAP, to minimize damage from static charges. Big-Blast is not StatZAP™ compatible.

Product Notes

AVAILABILITY. This product is available from MicroCare distributors across Europe. Contact your local distributor at www.MicroCare.com for details.

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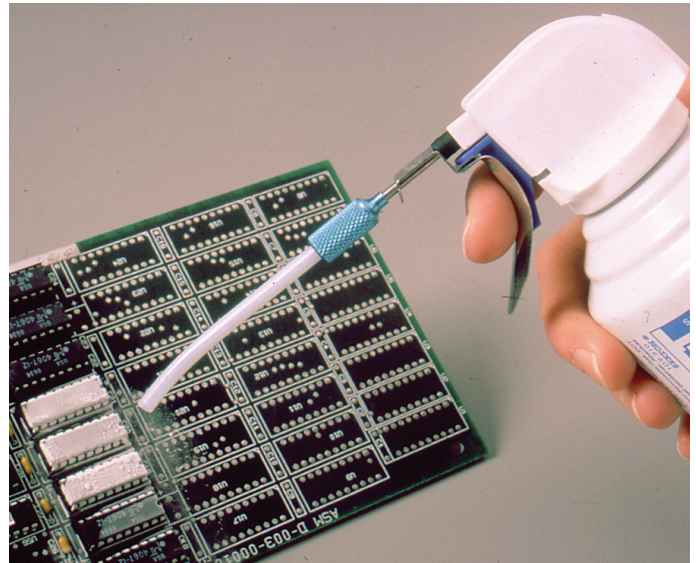
The StatZAP™ ESD Eliminator Kills Static; Saves PCBs and Avoids Repairs

If your company is using Micro•Freeze™ EU in static-sensitive environments, then the StatZAP™ ESD Eliminator is a tool you need.

Each StatZAP™ dissipates the dangerous static charges created by high-pressure aerosols, keeping your components safe from dangerous ESD. Ordinary aerosol sprays create up to 12,000 volts of chip-killed ESD as the liquid or gas races down the plastic spray tube inside the aerosol can. Since voltages as low as 150 volts can cause ESD damage, the StatZAP ESD Eliminator is engineered to continuously drain these charges before they reach dangerous levels.

Other important features include:

- Noncorrosive stainless steel construction for years of life.
- The comfortable knurled grip and the extra-long trigger activator minimize the potential for repetitive motion injuries.
- The angled tip can be rotated upward, making it easy to spray accurately in any direction.
- The ShockShield™ insulating sheath covers the tip of the StatZAP, protecting the board and the operator from accidentally touching an energized circuit.



**Contact MicroCare Today and See
How Easy It Can Be to Avoid ESD Damage!**

www.MicroCare.com

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