

Micro•Freeze Circuit Cooler

Anti-Stat Micro•Freeze Circuit Cooler

Micro•Blast Dry Circuit Cleaner

Technical Summary

General Information

Micro•Freeze and Micro•Blast are ozone-safe "drop-in" replacements for old-style freeze sprays and canned air. Employees like the traditional cooling and cleaning performance. Engineers like the ergonomic applicator on each dispenser and appreciate the products' cost-effectiveness. These are excellent choices for testing and repairing electronics in an ozone-safe environment.

Micro•Freeze

The two Micro•Freeze products are new benchtop circuit chillers that eliminate ozone-depleting emissions while boosting benchtop productivity.

Both Micro•Freeze blends deliver instant chilling without CFCs, HCFCs, compressed air or venturi systems. Both exceed the mil specs of $-40^{\circ}\text{C}/-40^{\circ}\text{F}$ and may chill to as low as -60°C in some circumstances, speeding both diagnostic and repair processes. Neither choice will leave residues, attack soft plastics or generate the component-shattering thermal shock that can occur with HCFC-based chillers.

Anti-Stat Micro•Freeze is a static-dissipative spray is for use in ESD-sensitive environments; regular Micro•Freeze is for-use on energized circuits or where static is not a concern.

Micro•Blast

Micro•Blast is the latest in ozone-safe technology for benchtop "canned air." Based on HFC-134a, Micro•Blast delivers between 70 and 140 psi of pressure directly to the component or board. Micro•Blast also can be used to remove slow-evaporating ozone-safe circuit cleaners from electronics. This convenience and power simplifies repair processes.

Highly Effective and Ozone Safe, Micro•Freeze and Micro•Blast Are Great Choices for the Workbench

Zero Ozone Impact

Non-flammable

Instant Cooling to Lower Than $-40^{\circ}\text{C} / -40^{\circ}\text{F}$

"Drop-In" Convenience



Compatibility

Both versions of Micro•Freeze and Micro•Blast are inert chemically. Non-corrosive and plastic-safe, they can be used on or near the components, cables and connectors found on all standard electronic assemblies.

Health & Safety

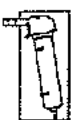
Both Micro•Freeze products and Micro•Blast have TLV Values of 1000 ppm. None are flammable. None of the ingredients are listed as known or suspected carcinogens. See the Material Safety Data Sheet for details.

The dispensers are highly pressurized. Each canister is equipped with a trigger-style valve so technicians can precisely control the spray, which minimizes worker exposures. Avoid exposing the containers to open flames or excessive heat, including prolonged exposures to tropical sunlight. As always, good chemical management requires that all users be properly trained in the safe and efficient handling of these products.

Environmental

Micro•Freeze and Micro•Blast are based on HFC-134a. Chlorine-free, both are completely ozone-safe. Anti-Stat Micro•Freeze contains a trace amount of alcohol, which is the only Volatile Organic Compound (VOC) in any of these three products. None of the materials in these products are subject to environmental warning labels (U.S. Clean Air Act, 1990, Section 611).

When local regulations permit, recycle the canisters and their packaging for maximum environmental protection.



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Selected Technical Data

General Product Data

Products	Micro•Freeze	Non-conductive Freeze Spray	MCC-FRZ
	Anti-Stat Micro•Freeze	Static-Dissipative Freeze Spray	MCC-FRZA
	Micro•Blast	Dry Circuit Cleaner and Duster	MCC-DST
Chemical Family	Hydrofluorocarbon		
Appearance	Liquified Gas		
Odor	None		

Solvency & Performance Data

K _v Value	Not Applicable	pH	Neutral
Percent Volatile	100%	Water Solubility	Slight
Vapor Pressure	96 PSIA @ 20°C	Vapor Density	3.18 (Air = 1)
Evaporation Rate	Instant	Boiling Point	-26°C / -15°F

Micro•Freeze will deliver circuit chilling to as low as -40°C/-40°F under all conditions and has delivered as low as -60°C/-76°F under optimal conditions with a skilled operator. Micro Care recommends testing before deployment.

Health, Safety & Environmental Data

Flashpoint (TCC)	None	Flammability Rating	Nonflammable
PEL	1000 ppm	NFPA Ratings: Health:	1
Ozone Impact	Zero	Fire:	0
Propellant	HFC-134a	Reactivity:	1
Ozone Depleting Substance Classification	Not an ODS	Organic Content (MCC-FRZ, MCC-DST)	0 g/l
TSCA Listed	Yes	Organic Content (MCC-FRZA)	12 g/l

General Compatibility with Plastics and Elastomers

While comprehensive testing has found no common components or elastomers which have impaired performance due to chemical reaction with any of these products, some combinations of physical shapes and materials, such as very thin pieces of very brittle plastics, may — in rare situations — suffer stress fractures from thermal shock. Test before widespread deployment.

Micro•Freeze and Micro•Blast Packaging and Shipping

PART #	PACKAGING	WEIGHT (K)	WEIGHT (#)
MCC-FRZ	Aerosol	0.28 k	0.63 #
MCC-FRZA	Aerosol	0.28	0.63
MCC-DST	Aerosol	0.28	0.63

Availability

Distributed Locally by

SHIPPING: All three products are shipped twelve (12) cans per carton. Packing instructions for ground shipments are "Refrigerant Gas N.O.S. (Tetrafluoroethane), Class 2.2, P.G. DOT E 10232, UN-1078." Air shipments are "Refrigerant Gas N.O.S. (Tetrafluoroethane), Class 2.2, P.G. DOT E 10232, UN-1078, Packing Instructions 200, Cargo Aircraft Only, Exemption Copy Required." The "Nonflammable Gas" label is required in both cases. Bulk quantities are not available from Micro Care.

NOTES: Micro Care publishes this information from sources believed to be accurate. This data is intended for persons having the technical skills to evaluate and use the data properly. Micro Care does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred using it. Micro Care's liability is limited to the replacement of this product. Product specifications are subject to change without notice.

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