



Precision Cleaning Products

**for Surface Finishing,
Electronics, Aerospace,
Medical Devices
and Photonics**

MicroCare



MicroCare precision cleaners lead the industry in reliability, safety and cost-effectiveness

MicroCare is a leader in the high-performance world of cleaning, coating and lubricating. For metal finishing, optics, electronics, aerospace, medical devices and related industries, MicroCare offers three different technologies. The Vertrel® specialty solvents from DuPont™ offer exceptional versatility as solvents, drying agents and carrier fluids. The Bromothane™ cleaners from Chemtura replace most chlorinated solvents while proprietary formulations from MicroCare add unique capabilities. All three classes of products offer exceptional performance and value.



Vertrel® Solvents, Only from DuPont™

Vertrel® specialty fluids were developed by DuPont to provide safe, effective and environmentally acceptable alternatives to old-style, ozone-depleting solvents. Based on nonflammable HFC chemistries, the unique physical properties of the Vertrel fluids make these materials ideal replacements for CFC-113, HCFC-225, HCFC-141b, nPB, TCE, most aqueous-based cleaning products and many hydrocarbon choices. The most popular Vertrel choices include:

Vertrel® MCA Degreaser

This is a powerful precision degreaser for difficult soils. It is often used to flush high-purity oxygen systems, such as in hospitals and military vehicles, because it removes combustible residues without adding any additional risks of flammability. It also offers excellent results on Krytox-like greases, oils and insoluble particulate.

M2S-MCAP	50 lb. (22.6 kg) Pails	5 gal. (19 L)
M2S-MCAD	550 lb. (248.9 kg) Drums	55 gal. (200 L)

Vertrel® SMT Defluxer

This is a powerful defluxer and the best-selling Vertrel cleaner. It delivers excellent solvency on both ionic (inorganic) and organic soils found on circuit boards today. This high density, low surface tension cleaner easily goes under tight-fitting components for exceptional cleaning results.

M2S-SMTP	50 lb. (22.6 kg) Pails	5 gal. (19 L)
M2S-SMTD	550 lb. (248.9 kg) Drums	55 gal. (200 L)

Vertrel® SFR Defluxer

This is the newest Vertrel electronics cleaner, featuring a new HFC formulation with reduced global warming impact. This industrial-strength defluxer is the best

choice for the high-temperature fluxes and pastes found on lead-free electronics. It delivers excellent solvency for both ionics and organics. Users prefer this product when dealing with stubborn contamination or tight spacings, and durable materials of construction.

M2S-SFRP	45 lb. (20.3 kg) Pails	5 gal. (19 L)
M2S-SFRD	500 lb. (226 kg) Drums	55 gal. (200 L)

Vertrel® SDG Degreaser

Also using new HFC technology from DuPont, this is the best degreaser for the toughest cleaning applications. It is a drop-in replacement for the ozone-depleting HCFC-225, and also can replace chlorinated and brominated solvents. It is most commonly used in metal cleaning.

M2S-SDGP	45 lb. (20.3 kg) Pails	5 gal. (19 L)
M2S-SDGD	500 lb. (226 kg) Drums	55 gal. (200 L)

Vertrel® XF Carrier Fluid

The mildest Vertrel solvent is Vertrel XF. This clear, plastic-safe liquid is ideally suited for use in vapor degreasers, hand-wiping applications such as flat-panel televisions, plus more typical flushing and rinsing applications. Since the cleaner has very low solvency (it lifts contamination rather than dissolves it) it is widely used during the pre-cleaning of disks and head stack assemblies and then used as a carrier to coat those disks with silicone. It also is often used to deposit PTFE lubricants.

M2S-XFP	60 lb. (29.9 kg) Pails	5 gal. (19 L)
M2S-XFD	660 lb. (298 kg) Drums	55 gal. (200 L)

Vertrel® XP Particulate Rinse

Vertrel XP is a mild, affordable rinsing fluid and ultra-mild precision cleaner targeted on removing fine particulate from metal and nonmetal parts. With more ability

to dissipate static bonds than XF, it can remove contaminants such as dust particles, skin flakes, fibers and other process contaminants. It also can dissolve light layers of oils.

M2S-XPP	55 lb. (24.9 kg) Pails	5 gal. (19 L)
M2S-XPD	600 lb. (272.2 kg) Drums	55 gal. (200 L)

Vertrel® Drying Agents

Solvent drying, or dewatering, uses the fundamental traits of the solvent — high density, low surface tension and immiscible in water — to instantly remove water from precision parts without expensive blowers, heaters or labor. “Displacement drying” lifts the water off the parts because the solvent is heavier than water and doesn’t mix with it. “Absorption drying” absorbs the water into the solvent, where it is removed in subsequent reprocessing. Absorption drying is preferred when the quantity of water to be removed is small.

Vertrel® XDA

Vertrel XDA is the mildest of the dewatering agents, for plastic parts or optical components with delicate coatings.

M2S-XDAP	60 lb. (27.1 kg) Pails	5 gal. (19 L)
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Vertrel® XDF

This is the agent of choice for metal parts and heavily contaminated applications.

M2S-XDFP	60 lb. (27.1 kg) Pails	5 gal. (19 L)
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Vertrel® XP10

Vertrel XP10 uses “absorption drying” to remove water and simultaneously provide a gentle final cleaning.

M2S-XP10P	55 lb. (24.9 kg) Pails	5 gal. (19 L)
M2S-XP10D	600 lb. (271 kg) Drums	55 gal. (200 L)

NOTE: The Vertrel family of solvents is quite large, with other packaging sizes, other cleaners, other lubricants and specialty products optimized for a wide array of applications. Contact MicroCare for more details on these other choices.

Bromothane™ Solvents

Bromothane™ precision cleaners are a family of solvents based on n-propyl bromide (nPB). Developed by Chemtura Corp., the world's largest producer of brominated intermediates, and marketed by MicroCare, these cleaners dissolve lubricating oils, cutting oils, adhesives, resins and even heavy greases. Bromothane solvents also are an ideal choice for hard-to-remove contamination such as waxes and buffing compounds.

Most of the world's nPB is produced in either the Middle East or China, regions not noted for domestic tranquility or product stewardship. Bromothane products are exclusively made in the U.S. by Chemtura, the only producer of nPB in North America.

These solvents are SNAP-accepted as replacements for CFC-113, HCFC-141b, HCFC-225, trichloroethylene (TCE), 1,1,1-trichloroethane (TCA) and other cleaners.

Bromothane™ Solvents

Bromothane™ S

This is the cleaning standard of the nPB product line; the "neat" stabilized solvent without any alcohol additives. It is a popular choice that is strong, versatile and easy to handle. This cleaner is used as a metal cleaner and degreaser.

M2S-BNG	11 lb. (5 kg) Minipails	1 gal. (3.8 L)
M2S-BNP	55 lb. (24.9 kg) Pails	5 gal. (19 L)
M2S-BND	600 lb. (271 kg) Drums	55 gal. (200 L)

Bromothane™ R

The flagship product of the Bromothane family, Bromothane R uses the popular 7.5% alcohol formulation. This polar formulation out-cleans older technologies and delivers superior cleaning of both ionics, organics and particulate. By



NOTE: MicroCare solvents are sold by weight, not volume. Volume measurements are provided merely as a convenient approximation.

switching to Bromothane R, users can benefit from Bromothane quality without costly re-qualification. This cleaner is most often used for defluxing electronics, and is popular among customers switching from other brands of nPB solvents.

M2S-BRG	10 lb. (4.5 kg) Minipails	1 gal. (3.8 L)
M2S-BRP	50 lb. (22.6 kg) Pails	5 gal. (19 L)
M2S-BRD	550 lb. (248.9 kg) Drums	55 gal. (200 L)

Bromothane™ E

This is a proprietary high-performance product using 15% alcohol. It is used primarily for insoluble particulates, especially when strong static bonds are locking the particulate to the substrates.

M2S-BEG	10 lb. (4.5 kg) Minipails	1 gal. (3.8 L)
M2S-BEP	50 lb. (22.6 kg) Pails	5 gal. (19 L)
M2S-BED	550 lb. (248.9 kg) Drums	55 gal. (200 L)

BromoTest™ Acid Kit

The stabilizers in all nPB-based solvents are consumed in the presence of water or reactive metals. This simple test kit ensures the system is properly balanced and solvent is used for the maximum life.

M2S-BA	One Each Kit
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BromoBooster™ Stabilizer

The life of the solvent can be extended by adding this product to the degreaser.

M2S-BBG	8 lb. (3.6 kg) Minipails	1 gal. (3.8 L)
M2S-BBP	40 lb. (18.1 kg) Pails	5 gal. (19 L)

Air Sampling Monitors

These badges are worn for one day and then sent to a lab for processing. This process ensures the cleaning system is operating properly and that safety procedures are being followed.

M2S-BQ	Each Badge; includes lab processing
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MicroCare®

In response to customers' requirements, MicroCare has developed (and in some instances, patented) proprietary materials, packaging and coatings. The most popular choices include...

Dry Film Lubricants

MicroCare has a unique family of sophisticated chemistries specifically for the nonflammable, non-migrating lubrication of metal, plastic and ceramic parts. These materials use a proprietary PTFE microdispersion technology, packaged in either aerosol or bulk. They deposit a thin, smooth, dry, nonmigrating lubricant on medical devices, catheters, cutting



tools, staplers, hypotubes, and complex assemblies where metal or plastic components slide against each other. They enable ultra-low "break-away" actuation forces and minimize the "stiction" problems in low speed, light load applications. This improves the feel of the device, delivering a silky, almost effortless actuation that can not be obtained any other way.

MicroCare CMS Defluxer

Nonflammable MicroCare CMS is an ideal choice for cleaning electronics in vapor degreasers. It is the industry's most affordable, nonflammable, ozone-safe, low aroma defluxer that is effective on almost any flux or solder paste residue. Also available in aerosol.

M2S-CMSP	45 lb. (20.3 kg) Pails	5 gal. (19 L)
M2S-CMSD	500 lb. (226 kg) Drums	55 gal. (200 L)

MicroCare Degreasers

MicroCare HDS is a azeotropic degreaser engineered for organic residues. It is an ideal choice for cleaning electronics in vapor degreasers and is more affordable than many competing formulations. A related product, MicroCare ACF2, is an ozone-safe, nonflammable option for both military and commercial applications. It removes hydraulic fluids, oils and grease without damaging painted surfaces, elastomers or tubing. Speedy drying and good toxicity ratings make both of these cleaners stand-out choices for assembly operations, repair depots and field service centers.

M2S-HDSP	45 lb. (20.3 kg) Pails	5 gal. (19 L)
M2S-HDSD	500 lb. (226 kg) Drums	55 gal. (200 L)
M2S-ACF2P	45 lb. (20.3 kg) Pails	5 gal. (19 L)
M2S-ACF2D	500 lb. (226 kg) Drums	55 gal. (200 L)

The Important Advantages of MicroCare

Innovation

Since 1983, MicroCare has been helping customers improve their products and processes while reducing their costs. To accomplish this task, MicroCare has developed a world-class portfolio of cleaners, additives, processes and packaging that is unsurpassed. For example, MicroCare offers packaging ranging from 14mL pens to tank trucks. MicroCare offers ultra-high purity products and packaging not available elsewhere. MicroCare offers ready-to-use formulations, eliminating time-wasting (and error-prone) mixing steps. Only MicroCare has developed TravelSAFE™ packaging, which can be shipped by air without hazmat fees. The list of innovations is long, and that means customers can obtain the latest technology in the most cost-effective package.

Breadth of Products

Solvents and chemicals are the tools of the trade at MicroCare, and our understanding of these materials is impressive and unique. MicroCare offers cleaners and lubricants in virtually every class: fluorinated, brominated, hydrocarbons, alcohols and siloxanes, to name a few. Because of this expertise customers can be assured they will get the best answer for their needs, not just the answer that's in our warehouse.

Product Stewardship

Using any industrial chemical carries certain risks. To minimize these risks, MicroCare has a rigorous product stewardship program that pervades the company. For example, most MicroCare aerosols can be used with the Trigger Grip™ dispenser, which reduces solvent consumption and enhances worker safety. Other MicroCare solvents are restricted to being used only in engineered cleaning systems such as vapor degreasers. MicroCare's "first fill" training program for vapor degreasers includes a comprehensive checklist, procedures training and an annual validation program. MicroCare's experts assist companies in developing the proper procedures for ordering, handling, shipping, storing and disposing or recycling these materials. MicroCare works hard to make sure your people are safe and your processes are efficient.

Sterling Service

MicroCare customers enjoy extraordinary customer service. Products are shipped promptly and correctly. Generous inventories accommodate unexpected demands. State-of-the-art computers track orders and shipments. And every phone call is answered by a friendly person, not a computerized voice-mail system.

Environmental Issues

For many years, MicroCare has been recognized as a leader in efforts to protect the environment. MicroCare has made extraordinary efforts to help reduce VOC emissions and minimize the impact of these products on global warming. For example, most MicroCare cleaners are not listed in the SARA Title III Section 313, nor on the NESHAP or RCRA lists (but certain additives and/or stabilizers may require SARA reporting if usage is high).

Availability

All of the MicroCare®, Bromothane™ and Vertrel® solvent products are made in the United States (although certain ingredients may come from other countries) and are available for immediate delivery from MicroCare's factory in New Britain, CT. Many MicroCare products also are available locally, from selected premium industrial distributors. Contact MicroCare for pricing and delivery details.



About MicroCare

MicroCare is a leader in the high-speed, high-performance world of cleaning, coating and lubricating. With products for industries as diverse as electronics, transportation, photonics, medical devices and aerospace, MicroCare is a catalyst for change, lowering costs and improving quality. MicroCare is an ISO 9001:2000 registered company.

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