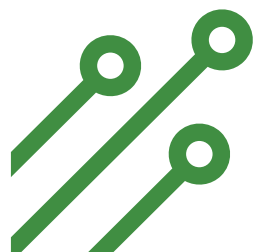




Discover Perfectly Clean



USA

**High Performance
Precision Cleaning
Fluids**



WE MAKE PRECISION CLEANING EASIER!

Since 1983, we've been helping businesses like yours improve **quality** and **productivity** with high-performance fluids used for **cleaning**, most commonly inside vapor degreasers. We will show you how easy it is to replace old style aqueous cleaners to save you time and money.

Our quality, innovation and service has earned the trust of companies around the globe. Find more details on the following pages or visit: **MicroCare.com**



Discover Perfectly Clean

Critical Cleaning Experts:

- ▶ Solvent Selection
- ▶ Process Improvement
- ▶ Onsite Support
- ▶ Health & Safety Support



SCAN QR CODES

Get quick access to product SDS, technical data sheets, videos and more.

1. Open the camera app on your mobile phone.
2. Center the QR code you want to scan on the screen and hold your phone steady for a couple of seconds.
3. Tap the notification that pops up to open the link. (You will need to be connected to the internet).

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VAPOR DEGREASING

TOUGH ON SOILS, GENTLE ON THE PLANET

SIMPLE & REPEATABLE

Vapor degreasing is a simple thermo-mechanical process that boils and condenses a specially-engineered low-boiling non-flammable cleaning fluid to remove contaminants like oils, greases, solder fluxes and wax. It cleans, rinses and dries parts in one machine making the entire process simple, repeatable and cost-effective.

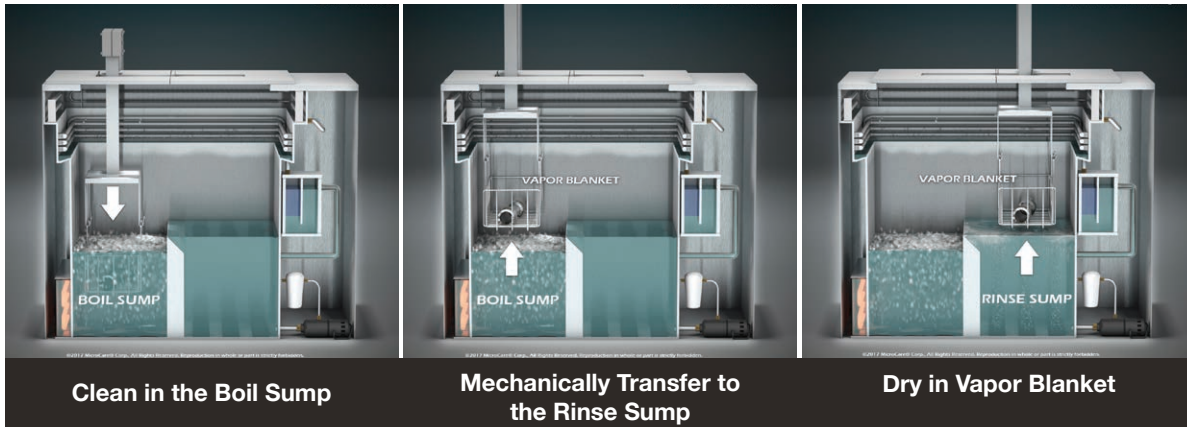
NPB & TCE REPLACEMENTS

MicroCare develops and manufactures modern nonflammable and environmentally sustainable cleaning fluids. These fluids replace traditional solvents like nPB and TCE to deliver consistent and effective cleaning with a very low GWP (low global warming potential). This helps reduce greenhouse gas effects and meet strict regional air quality regulations.

ENERGY SAVER

Many vapor degreasing fluids have a low boiling point and heat of vaporization. This translates to less energy use, less fossil fuel consumption, a lower carbon footprint and more energy cost savings.

HOW IT WORKS...



Vapor degreasing uses a closed-loop system with two chambers, the boil sump and the rinse sump. The boil sump holds a low-boiling, non-flammable cleaning fluid. Parts are immersed and cleaned inside the heated fluid. Once cleaned, the parts mechanically transfer and lower into the rinse sump where they are rinsed in more pure, uncontaminated fluid. Ultrasonics are frequently used to assist in the cleaning and rinsing. The parts then lift up and are held inside the vapor blanket for final rinsing and drying. In just 6-20 minutes parts are clean, dry, and spot-free.

RECYCLE & REUSE

Sustainable cleaning fluids are recycled and reused inside the vapor degreaser hundreds of times before they need replacing. The vapor degreaser simply concentrates the soils as it works, reducing waste generation and hazardous waste disposal costs.



Tergo™ High Performance Flux Remover (HPFR)

Excels at removing stubborn white residues and difficult no-clean fluxes



RINSE: Steel Pail
MCC-TFRHPEURIP

RINSE: Steel Drum
MCC-TFRHPEURID

BOIL: Steel Drum
MCC-TFRHPEUD

ADDITIVE: Glass Bottle
MCC-TFRHPEUAPT

NOTE:

MCC-TFRHPEUAPT is only sold with the purchase of MCC-TFRHPEURIP or MCC-TFRHPEURID.

APPLICATIONS

- Removes no-clean, lead-free, RMA, water-soluble flux residue and mixtures of different types of flux
- Cleans aged or polymerized (over-heated) fluxes and pastes
- Cleans SMT pallets and metal tools with slight oxidation and tarnishing

FEATURES

- Two-part, co-solvent/bi-solvent vapor degreasing cleaning fluid combines a low boiling, volatile cleaning fluid with a non-volatile rinsing additive
- Chemically stable; no need for acid acceptance testing and scavengers
- Low surface tension, low viscosity and high density - gets under low mounted circuitry and inside tight, complex spaces
- Very good compatibility with plastics and elastomers
- Nonflammable for facility safety
- Kb Value: >100
- 143 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)

Tergo™ Metal Cleaning Fluid (MCF)

Perfect for metal parts cleaning and debinding



Steel Pail
MCC-TMCFEUP

Steel Drum
MCC-TMCFEUD

APPLICATIONS

- Excellent replacement for nPB and traditional chlorinated fluids
- Use as a metal cleaner, debinding agent or carrier fluid
- Removes hardened greases, oils, caramelized flux residues, rosins, fingerprints and ionic contaminants

FEATURES

- An azeotrope for maximum stability, consistent performance and easier disposal
- Maintenance free – no need for acid acceptance testing and scavengers
- With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- Cleans the widest variety of metal alloys
- Nonflammable for facility safety
- Kb Value: >100
- <10 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- REACH, F-GAS and SNAP compliant



Use FLUID ADDITIVES for MORE CLEANING MUSCLE

LEARN MORE:
VIDEO



IN THE WORLD OF VAPOR DEGREASING,
THERE ARE 3 TYPES OF PARTS CLEANING METHODS:

MONO-SOLVENT CLEANING

The fastest and easiest method

CO-SOLVENT CLEANING

Delivers the speed and convenience of mono-solvent cleaning, but amplifies it with a second, high boiling temperature solvent for more cleaning muscle.

BI-SOLVENT CLEANING

To clean the most tenacious soils like thick waxes, heavy pitches and metal working fluids, use a bi-solvent system to dissolve or solubilize the contaminants for removal.

Tergo™ Performance Fluids

Tergo™ Chlorine Free Cleaning Fluid (CHFC)

High-temperature, high strength degreaser removes stubborn soils

APPLICATIONS

- ▶ Excellent cleaning on all types of insoluble contaminants
- ▶ Removes solder fluxes, oils, greases, waxes, pitch, particulates, paints, buffing compounds, anti-rust agents and other heavy hydrocarbons

FEATURES

- ▶ Non-chlorinated for long-term regulatory compliance
- ▶ Two-part, co-solvent/bi-solvent vapor degreasing cleaning fluid combines a non-volatile solvating additive with a hydrofluorocarbon rinsing agent
- ▶ Excellent replacement for nPB, TCE and PERC
- ▶ Compatible with most metals, plastics, elastomers and ceramics
- ▶ Maintenance free – no need for acid acceptance testing and scavengers
- ▶ Nonflammable for facility safety
- ▶ Kb Value: >120
- ▶ <580 GWP (Global Warming Potential for Rinse Agent), not a HAP (Hazardous Air Pollutant)
- ▶ REACH, F-Gas, and SNAP compliant



BOIL: Steel Pail
MCC-TCFCF01EU

RINSE: Steel Pail
M2S-TCFCFRIEUP

BOIL: Steel Drum
M2S-TCFCF01EUD

RINSE: Steel Drum
M2S-TCFCFRIEUD



MicroCare™ CMS Specialty Defluxing Fluid

Specialty defluxing fluid serves double duty as a medium-strength electronics cleaner and a mild degreaser



Steel Pail
MCC-CMSP

Steel Drum
MCC-CMSD



APPLICATIONS

- ▶ Suitable for removing rosin and OA flux from through-hole, SMT and BGA boards, flex circuits, cables and connectors
- ▶ Cleans light oils, greases and some inks from metal parts, ceramics and some plastics

FEATURES

- ▶ Low surface tension, low viscosity and high density, to permeate under tight-fitting circuitry and inside tight, complex spaces
- ▶ 100% Volatile – leaves no residue
- ▶ Broad materials compatibility profile – safe for most materials
- ▶ Nonflammable for facility safety
- ▶ Kb Value: 25
- ▶ 758 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)



MicroCare™ CCA Specialty Defluxing Fluid

Use in applications where maximum material compatibility is important



Steel Pail
MCC-CCAP

Steel Drum
MCC-CCAD



APPLICATIONS

- ▶ General purpose degreasing fluid
- ▶ Remove light to moderate organic residue
- ▶ Use in optical system and metal finishing and assembly operations

FEATURES

- ▶ Specifically engineered for fast, consistent and economical cleaning in vapor degreasers
- ▶ 100% Volatile – leaves no residue
- ▶ Thermally and chemically stable for long fluid life
- ▶ Broad materials compatibility profile – safe on most substrates including some soft plastics
- ▶ Kb Value: 22
- ▶ 764 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)



MicroCare™ Ink Remover Fluid

Sustainable fluid that delivers excellent cleaning of difficult to-remove high-solid inks



Steel Pail
MCC-MINKP

Steel Drum
MCC-MINKD



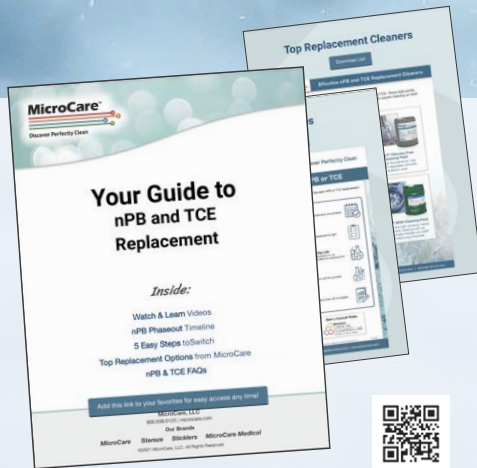
APPLICATIONS

- ▶ Cleans stubborn inks and coatings
- ▶ Removes dyes off substrates, leaving parts clean for subsequent work

FEATURES

- ▶ A 'co-solvent' or two-component system
- ▶ Sustainable and environmentally progressive
- ▶ Fast drying
- ▶ Nonflammable for facility safety
- ▶ Kb Value: 110
- ▶ <10 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)

IT'S TIME TO MAKE THE CHANGE TO A SAFER FLUID



E-GUIDE

It's unclear when a complete nPB or TCE ban will happen in the US, but many experts agree, the phaseout is definite and coming soon. Plan your transition to safer vapor degreasing fluid now. Learn how with the **"Your Guide to nPB and TCE Replacement" eGuide**.

This valuable resource includes a **phaseout timeline, replacement cleaning fluid suggestions**, and provides the **5 easy steps** you should follow to get the right nPB or TCE replacement for your precision cleaning applications.



MicroCare™ Heavy Duty Degreasing Fluid (HDS)

A versatile vapor degreasing fluid

APPLICATIONS

- ▶ Removes cutting oils, stamping oils, waxes, greases, gear and lubricating oils, hydraulic fluids, vacuum oils and mineral oils
- ▶ Cleans bearings, machined parts, stampings and precision assemblies
- ▶ Cleans GOx components
- ▶ Use as a carrier fluid for silicone and other materials of lubrication

FEATURES

- ▶ Ideal replacement for nPB, some HFEs, HCFC-225 and perfluorocarbons (PFCs) with minor modifications to existing vapor degreasers
- ▶ Ideal replacement for HFE-71DA, HFE-71DE and HFE-72DA and HFE-72DE
- ▶ Very good materials compatibility
- ▶ With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- ▶ Recyclable inside a vapor degreaser – reduces cost of ownership and environmental footprint
- ▶ Kb Value: 48
- ▶ 923 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)



Steel Pail
MCC-HDSP

Steel Drum
MCC-HDSD



SMOOTHING IT OUT FLUIDS FOR ONE-STEP CLEANING & SMOOTHING

Today over 80% of 3D printed parts are still made using thermoplastic or thermoset polymers. 3D printed polymer parts are manufactured using any variety of 3D printing methods, but all will typically require post-processing, including smoothing rough edges or corners. Choosing the correct smoothing and cleaning fluid plays a key role in the successful output of 3D printing components.

LEARN MORE:
TECH ARTICLE



MicroCare™ Smoothing Station Fluid (SSF)

Easily remove steps and terraces from plastic parts without grinding or sanding

APPLICATIONS

- ▶ Smooth stepped edges or terraces on 3D printed (Additive Manufactured) plastic parts
- ▶ Remove surface irregularities in thermoplastic components
- ▶ Approved by Stratasys™ for use in their 'Finishing Touch' Smoothing Station

FEATURES

- ▶ Slightly softens the surface of the plastic parts and smooths the irregularities
- ▶ Very fast drying – smoothing ceases immediately upon removal from vapors
- ▶ Nonflammable for facility safety
- ▶ 148 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- ▶ F-Gas compliant



Steel Pail
MCC-SSF01P





MicroCare™ XE Carrier Fluid and Degreaser

Versatile fluid for carrying, cleaning and drying

APPLICATIONS

- Carrying and dispensing coatings
- Light-duty cleaning and rinsing of particulate and light soils
- Solvent drying

FEATURES

- An azeotrope for maximum stability, consistent performance and easier disposal
- Uses Ethanol over IPA or methanol for polarity, regulatory compliance and worker safety
- Very good compatibility with metal, ceramic, plastic and glass parts
- Nonflammable for facility safety
- Kb Value: 20
- 1248 GWP, not a HAP (Hazardous Air Pollutant)



Steel Pail
MCC-XEP

Steel Drum
MCC-XED



MicroCare™ XH Cleaning Fluid

Ideal for light-duty cleaning and rinsing

APPLICATIONS

- Dissolves common lubricants including mineral oils and other hydrocarbons
- Clean and rinse optical devices, metals, ceramics, plastics and glass parts

FEATURES

- An azeotrope for maximum stability, consistent performance and easier disposal
- Broad materials compatibility - most plastic, ceramic and metal components
- Nonflammable for facility safety
- Kb Value: 9.7
- 1209 GWP, not a HAP (Hazardous Air Pollutant)



Steel Pail
MCC-XHP

Steel Drum
MCC-XHD



Opteon™ SF79 Specialty Fluid

An effective, yet environmentally sound cleaning fluid

APPLICATIONS

- Removes oil grease and buffing compounds
- Defluxing
- Silicone Removal
- Medical instrument cleaning

FEATURES

- An ideal replacement for nPB, TCE, PERC, Benzene and methylene chloride
- With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- Compatible with most plastics, elastomers and metals
- Hostile to pyrogens
- Nonflammable for facility safety
- Kb Value: 103
- <15 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- REACH, F-GAS and SNAP compliant



Steel Pail
MCC-SF79P

Steel Drum
MCC-SF79D

Opteon™ SF80 Specialty Fluid

Very low GWP makes this one of the most sustainable cleaning fluids on the market

APPLICATIONS

- Removes oil grease and buffing compounds
- Defluxing
- Silicone Removal

FEATURES

- An ideal replacement for nPB, TCE, PERC, Benzene and methylene chloride
- Maintenance free – no need for acid acceptance testing and scavengers
- With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- Compatible with most plastics, elastomers and metals
- Hostile to pyrogens
- Nonflammable for facility safety
- Kb Value: 99
- <2.5 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- REACH, F-GAS and SNAP compliant



Steel Pail
MCC-SF80P

Steel Drum
MCC-SF80D

Vertrel™ SMT Specialty Fluid

Ideal for medium duty PCB cleaning

APPLICATIONS

- PCB defluxing
- Removes ionic soils and organic flux residues from PCBs
- Removes greases, processing oils, mineral oils and light waxes from parts

FEATURES

- An azeotrope for maximum stability, consistent performance and easier disposal
- An ideal replacement for nPB, TCE and HCFCs
- Compatible with most plastics, elastomers and metals
- Nonflammable for facility safety
- Kb Value: 38
- 688 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- REACH, F-GAS and SNAP compliant



Steel Pail
MCC-SMTP

Steel Drum
MCC-SMTD



Vertrel™ MCA Specialty Fluid

Easily removes trapped contaminants in oxygen systems

APPLICATIONS

- ▶ Optimized for cleaning gaseous (GOX) and liquid oxygen (LOX) systems
- ▶ Removes fine particulate and trapped oils, greases and waxes without mechanical scrubbing
- ▶ Cleans complex tubes, gauges, pumps, filters and valves
- ▶ Replaces hydrochlorofluorocarbons (HCFCs) in many applications

FEATURES

- ▶ With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- ▶ Compatible with most plastics, elastomers and metals
- ▶ Nonflammable for facility safety
- ▶ Listed by ASTM and CGA (ASTM G93; CGA Directory of Cleaning Agents for Oxygen Service)
- ▶ Passes LOX Impact test (NF EN 1997; NHB 8060.1)
- ▶ Kb Value: 25
- ▶ 806 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- ▶ REACH, F-GAS and SNAP compliant



Steel Pail
MCC-MCAP

Steel Drum
MCC-MCAD

Vertrel™ MCA Plus Specialty Fluid

Particularly effective on difficult organic soils

APPLICATIONS

- ▶ Remove heavy greases, oils and other difficult soils
- ▶ Most popular as a cleaner for Krytox® fluorolubricants

FEATURES

- ▶ Safer to use than nPB, TCE and HCFCs
- ▶ With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- ▶ Compatible with most plastics, elastomers and metals
- ▶ Nonflammable for facility safety
- ▶ Kb Value: 25
- ▶ 650 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- ▶ REACH, F-GAS and SNAP compliant



Steel Pail
MCC-MCAPP

Steel Drum
MCC-MCAPD



Vertrel™ SFR Specialty Fluid

Effective at removing tough, high-temperature, lead-free, and no-clean flux residue

APPLICATIONS

- ▶ Defluxing PCBs
- ▶ Removing light to heavy organic and inorganic soils
- ▶ Dissolving white residue

FEATURES

- ▶ Safer to use than nPB, TCE and HCFCs
- ▶ With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- ▶ Compatible with most plastics, elastomers and metals
- ▶ Nonflammable for facility safety
- ▶ Kb Value: 101
- ▶ 264 (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- ▶ REACH, F-GAS and SNAP compliant



Steel Pail
MCC-SFRP

Steel Drum
MCC-SFRD

Vertrel™ SDG Specialty Fluid

When you need strong parts degreasing power

APPLICATIONS

- ▶ Removing organic soils from parts
- ▶ Removes oils, greases, waxes, hydraulic fluids and silicone residue

FEATURES

- ▶ Safer to use than nPB, TCE and HCFCs
- ▶ With a low surface tension, low viscosity and high density, it can displace soils inside tight, complex spaces
- ▶ Compatible with most plastics, elastomers and metals
- ▶ Nonflammable for facility safety
- ▶ Kb Value: 95
- ▶ 148 GWP (Global Warming Potential), not a HAP (Hazardous Air Pollutant)
- ▶ REACH, F-GAS and SNAP compliant



Steel Pail
MCC-SDGP

Steel Drum
MCC-SDGD



EXPERTISE YOU CAN TRUST



Cleaning application scientists answer your questions

The MicroCare application scientists are well-versed in critical cleaning methods and fluids. On-site regional sales managers and in-house chemists offer you the know-how to solve your critical cleaning problems.



Sustainable products for a better future

Let us help you establish a sustainable cleaning process with minimal volatile organic compound (VOC) and low global warming potential (GWP) cleaning fluids. Get reliable cleaning performance and meet stringent local, national and global environmental policies.



Stay informed at MicroCare.com

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