

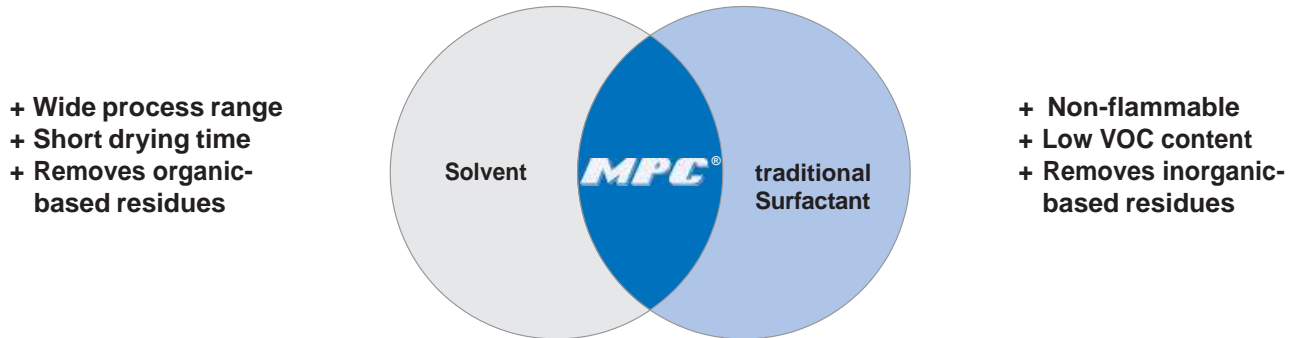
# MPC<sup>®</sup> TECHNOLOGY

## Water-based cleaning technology combining the advantages of solvent and surfactant technologies

“Micro Phase Cleaning” (MPC<sup>®</sup>) is an innovative water-based cleaning technology developed and patented by ZESTRON. MPC<sup>®</sup> Technology’s cleaning properties allow a wide application range and power the complete removal of all contaminants from electronic substrate surfaces.

### MPC<sup>®</sup> Technology combines the advantages of conventional cleaning agents

The two conventional cleaning technologies, solvent and surfactant, are characterized below by their advantages:



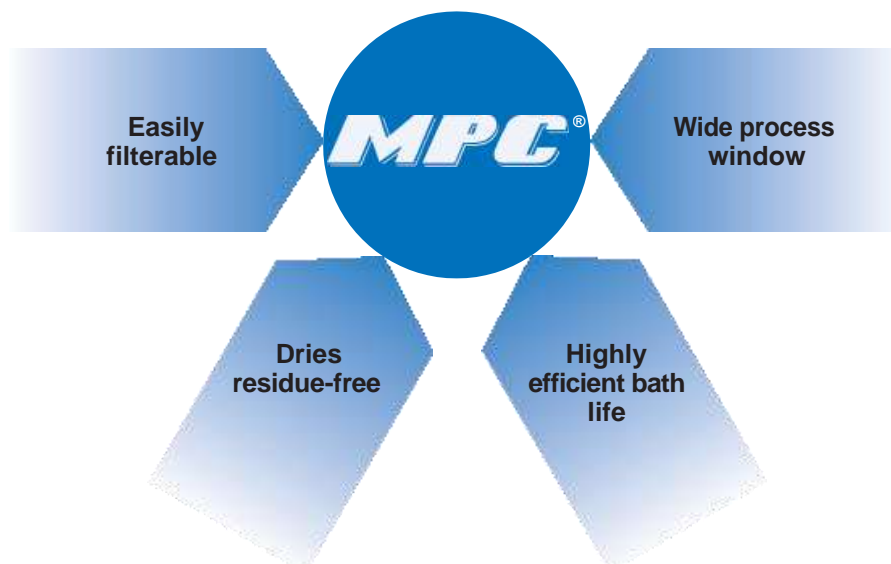
The unique feature of MPC<sup>®</sup> Technology is that it combines the advantages of traditional solvents and surfactants without their drawbacks.

MPC<sup>®</sup> Technology is characterized by a **wide process window**. The combination of polar and non-polar compounds allow MPC<sup>®</sup> cleaning agents to clean various organic and inorganic residues such as **fluxes**, **solder paste** and **SMT adhesives**.

All MPC<sup>®</sup> cleaning agents are **highly efficient and filterable**. While surfactant cleaners bond to contaminants, MPC<sup>®</sup> cleaning agents precipitate the residues. The micro phases remove the contaminants from the substrate surfaces and transfer them to the surrounding aqueous phase. The particles can easily be filtered out of the cleaning bath. This ensures an **extremely long bath life** and significantly reduces operating costs. All MPC<sup>®</sup> cleaners are water-based and therefore **non-flammable**. Additionally all MPC<sup>®</sup> cleaning agents have low VOC content and thus are environmentally friendly.

MPC<sup>®</sup> Technology’s **surfactant-free and solid-free formulation** leaves no residues on the substrate surfaces. This leads to stable processes.

### The advantages of MPC<sup>®</sup> Technology:



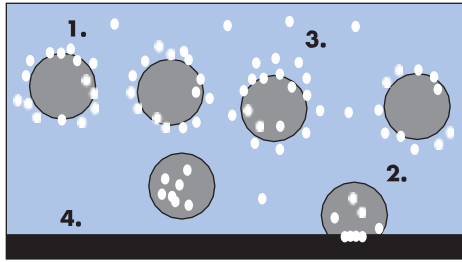
**Do you have additional questions about our MPC<sup>®</sup> cleaning agents?**

Our process engineers will be happy to assist you. Call +49-841-635-140 or email [TechSupport@zestron.com](mailto:TechSupport@zestron.com)

# MPC<sup>®</sup> TECHNOLOGY

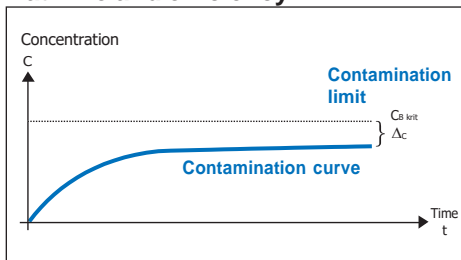
## Effectiveness of MPC<sup>®</sup> Cleaning Agents

### Effectiveness:



1. Heat and/or agitation (e.g. spray-in-air) forms the micro phases.
2. The micro phases remove the contaminants from the substrate surface and transfer them to the surrounding solution (micro phase transfer).
3. The contaminants can easily be filtered out of the cleaning bath, thereby ensuring that the bath has an extremely long service life.
4. Surfactant-free and solid-free formulation does not leave residues on the substrate.

### Bath life and efficiency:

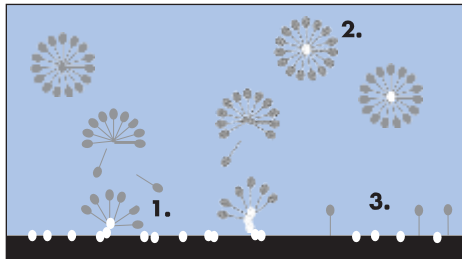


The contaminants can be removed from the bath by simple filtration. Consequently the bath does not become progressively depleted of active agents. The service life is considerably lengthened resulting in the following benefits:

- The critical bath limit, "CB crit," is not reached, thereby providing the most stable process window for the user.
- The long service life of the cleaner results in a lower consumption rate that significantly increases efficiency.
- Disposal costs are significantly reduced.

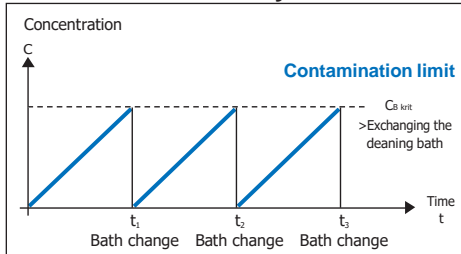
## Conventional surfactant cleaning agents:

### Effectiveness:



1. Surfactants permanently bond to the contaminants.
2. Unlike MPC<sup>®</sup> Technology cleaning agents, filtration is not possible. Consequently the service life is shorter.
3. Traditional surfactants also remain on the substrate's surface. This causes complications during subsequent manufacturing processes such as wire bonding, coating and gluing.
4. Unlike MPC<sup>®</sup> Technology cleaning agents, surfactants cannot remove SMT adhesives.

### Bath life and efficiency:



The permanent bonding of the surfactants to contaminants results in a progressive depletion of active ingredients, creating a shorter bath lifetime. This limitation on bath loading, "CB crit," can only be counteracted by chemistry replenishment or a complete bath change ( $t_1, t_2, t_3 \dots t_n$ ). This is associated with:

- Higher costs for the cleaning medium and intensive labor
- Higher costs for the disposal of the used cleaner
- Higher costs for bath maintenance and process control

## RoHS & WEEE Compliant

All MPC<sup>®</sup> cleaning agents are 100 % RoHS & WEEE compliant. MPC<sup>®</sup> cleaning agent formulations are free of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.



### Authorized Distributor

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