

Nichem[®] One MP

Mid-phosphorus electroless nickel



General Metal Finishing

Wear resistant coatings

atotech.com



LEAD and
CADMIUM-
free

ELV, RoHS and
WEEE-
compliant

The unique single-component mid-phosphorus electroless nickel process

Simplified control, maintenance, and logistics

Nichem[®] One MP is a single-component mid-phosphorus electroless nickel process designed to simplify bath control, maintenance, and logistics. It is the perfect choice for job shops that seek efficiency, offering streamlined inventory management, simpler logistics, and reduced documentation. The process uses a single product for bath make-up and replenishment, requiring only one dosing pump, ensuring easy maintenance and a lower risk of imbalance. The process reduces the risks of operator mistakes, resulting in long-term cost savings and superior quality.

Enhanced sustainability and efficiency

The Nichem[®] One MP process is sustainable, free from harmful substances, and compliant with industry standards. The long bath life of the process, coupled with only one dosing pump requirement, contributes to cost savings and efficiency. The electroless nickel process delivers robust performance and a consistent deposition rate. It is compatible with rack and barrel applications.

Features and benefits

- One additive, general-purpose process
- Ideal for job shops
- Easy inventory maintenance, less documentation
- Simpler logistics, less space requirements
- Easy process maintenance
- Lower risk of imbalance
- Pb and Cd-free
- ELV, RoHS and WEEE-compliant
- Lower drag-out
- Long bath life (up to 12 MTO)
- Fully bright appearance

Unmatched bath performance and excellent deposit properties



Images 1 - 3:
Components plated with the Nichem® One MP process exhibiting uniform shiny bright surfaces

Unmatched brilliance and deposit performance

The Nichem® One MP process has been specially engineered to deposit bright nickel-phosphorus coatings with a phosphorus content of 6 to 9% while maintaining excellent ductility. With a deposition rate ranging from 14 to 22 $\mu\text{m}/\text{h}$ throughout the entire bath life, the process delivers consistent and efficient plating results. The hardness of the deposited coating ranges from 525 to 600 $\text{HV}_{0.1}$ as plated but can be further enhanced to 850 to 1,000 $\text{HV}_{0.1}$ after a heat treatment of one hour at 400 °C. The Nichem® One MP process delivers excellent quality and performance for a wide range of applications and substrates, ensuring excellent durability and aesthetic appeal.

Outstanding bath stability and extended bath life

The Nichem® One MP process exhibits exceptional bath stability and extended bath life. Depending on the base material and specific plant conditions, the advanced electroless nickel-plating process can achieve 10 – 12 MTO with steel and 4 – 7 MTO when applied to aluminum alloys. The wide operating window, longevity, and bath stability allow for higher efficiencies and cost-effective operations.

Versatility for a multitude of application

The Nichem® One MP process offers versatility, compatible with rack and barrel applications, and can process a wide variety of substrates. Whether producing complex components or working on larger-scale projects, our process delivers consistent and reliable results to meet industry-specific plating requirements.

Consistent hardness over the bath life

The Nichem® One MP deposits of samples taken at different stages of the plating bath life cycle exhibit a narrow range of hardness values, with the highest hardness as plated at 6 MTOs. After heat treatment at 400 °C, the highest deposit hardness occurred at a bath age of 4 MTOs.

