

## SYGEF Plus PVDF-HP

# Ending corrosion worries in semiconductor wafer cleaning

Reference: ASE Co. Ltd.

Korean semiconductor wafer cleaning  
business trusts one-solution provider  
and PVDF-HP piping system

# Saving time and ending corrosion worries: PVDF-HP piping

Korean equipment manufacturer ASE Co. Ltd. successfully transitioned from metal to the corrosion-free PVDF piping system solution SYGEF Plus with the help of one-solution provider GF Piping Systems Engineering Services to ensure high purity of the box cleaning process in their semiconductor wafer cleaning business.

## Project background

Korean semiconductor wafer equipment manufacturer ASE Co., Ltd. trusts GF Piping Systems Korea to supply products and services for building high purity box cleaning systems that are used to wash semiconductor wafers. In highly sensitive systems such as box cleaning, lowest contamination of all involved components is key to ensuring the quality of wafers. To maintain the high purity of wafers, the baskets, they are cleaned in, need to be washed before and after every use. Previously ASE Co. Ltd. used stainless steel 316 pipes for applications in their box cleaning system such as hydrochloric acid, and cold and hot ultrapure water (UPW/HUPW), and learned that occurring corrosion, particle leach-out and issues with the inner surface finish did not meet its expectations of high purity.

## Chosen technical solution

SYGEF Plus PVDF-HP, the high purity piping system from GF Piping Systems, met the high needs of ASE Co. Ltd. as they decided to replace stainless steel 316 with a PVDF-HP piping system. With the new system ASE avoids corrosion issues in their box cleaning system, part of their semiconductor wafer cleaning business, dealing with hydrochloric acid and ultrapure water (UPW). In SYGEF Plus, all components are corrosion free and offer a dead-leg free system design. It is produced in a German, most advanced ISO Class 5 (100) clean-room production facility. The outstanding physical and chemical resistance of the PVDF pipes makes them ideal for use in cold and hot ultrapure water systems or high-purity chemicals in the microelectronics industry.

## Improvements achieved

During the installation process several Specialized Solutions from GF Piping Systems were applied, such as ProSite and Engineering, providing relevant expertise. The customer received support with the expertise and building up of a plastic piping module in a limited space, while maintaining the high purity level of all components. Apart from receiving a suitable, sustainable solution based on their needs for high purity and chemical resistance, ASE saved 10% of working hours in comparison to former projects by relying on GF Piping Systems as a one-solution provider, rather than coordinating with several suppliers. In the long-term, the light and very durable corrosion-free piping system will reduce repair needs and overall costs in the Korean wafer cleaning business.

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The SYGEF Plus PVDF-HP piping system at ASE Co. Ltd.



PVDF-HP components avoid corrosion in ultrapure water systems.

## Customer benefits

- No more corrosion worries in high purity business with a PVDF-HP piping system
- 10% less working hours, relying on one-solution provider

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