

## CASE STUDY



**CUSTOMER:** NOVA Chemical

**INDUSTRY:** Chemical Production

**LOCATION:** Ontario Canada

**YEAR BUILT:**

**PROJECT DESCRIPTION:** Two-stage filtration system for removal of entrained liquids for olefins production facility.



### The Situation

An olefins production facility needed to add a separation system to remove entrained hydrocarbon liquids from hydrogen “charge” gas.

### The Challenge

The customer needed extremely high-efficiency removal of entrained benzene and toluene so that the hydrogen process gas contained less than 1 ppb (part per billion) of liquid. The design case was based on a 30% incoming moisture level & required >99% removal of 0.3-micron liquids and solids. The mechanical design of the pressure vessel and internals had to take into account both Hydrogen service and low-temperature process conditions.

### The Solution

A CECO Peerless two-stage filtration system, consisting of a vane-type separator followed by high efficiency coalescing filters proved to be the ideal solution for this challenge. The first stage vanes were used to provide bulk removal to extend the life of the coalescing filters.

### The CECO Advantage

In addition to the high-efficiency filtration internals, Peerless offers decades of experience designing and building low-temperature ASME pressure vessels.

### The Operational Results

- Value 1: High-efficiency filtration to 0.3 microns
- Value 2: Corrosion resistant materials
- Value 3: Extended run time between filter changes
- Value 4: CFD

### The Environmental Benefits

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**CECO Peerless**