

Product Recovery (Pigging) Case Study: Croda Chemicals Singapore

How Pigging Systems and Valve Matrices Improve
Efficiency in Chemical Production



HPS Product Recovery Solutions

Quality • Innovation • Simplicity • Integrity

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Summary

- HPS designed, supplied and implemented single and double-pig systems plus piggable valve matrices for Croda Singapore
- The systems were for a 'greenfield' site
- They ensure highly efficient liquid transfer and processing, ensuring product waste and downtime are kept to a minimum.
- By minimising manual intervention, the systems also enhance safety
- By saving energy, chemicals and resources, pigging also helps towards Croda's environmental sustainability.

About Croda Singapore

Founded in 1925, Croda is a highly innovative company that produces speciality chemicals, ingredients and technologies for many well-known brands. With offices throughout the world, Croda works with a wide range of business sectors including coatings and polymers, home care, industrial chemicals, lubricants, personal care, polymer additives and others.

Project Background

Croda Singapore manufacture specialised products for the health and beauty care industries in the Pacific Rim. These products include specialised lanolin based surfactants, esters and other chemicals.

This was a "Green Field" project where a number of material transfers had to be accomplished, at up to 100°C, through the same pipelines.

Why Croda Chose HPS as their Pigging Systems Provider

HPS has a strong reputation as the world's leading hygienic and sanitary pigging systems specialist, and has worked with a wide variety of companies the produce homecare, lubricants, paint and coatings and other chemical products.

The Solution

Raw materials are taken from a number of tanks, routed through HPS Piggable Valve to three distribution lines. These 3-inch trace heated lines distribute the raw materials either by an HPS Single Pig System to an Ethylene Oxide Reactor or by HPS Double Pig Systems to two sets of Tank Farms. In the double pig systems, the first Pig selects the tank and the second pig pushes all the remaining product into the tank at completion of the transfer.

From the Reactor, an HPS Double Pig System transfers the product to anyone of three different Tank Farms. The Tank Farm is selected using HPS 120° Divert Valves, whereas the actual Tank is again

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selected by the first Pig whilst the second Pig pushes all the remaining product into the tank at completion of the transfer.

Finished products are taken from the Tank farms through HPS Piggable Valve Matrices, which give the flexibility to select any Tank to any of the Finished Product Packages. These include Tanker, Drum Filling or Pastillation to provide pellets. All of these lines are Piggaged at the end of a transfer.

In total, there are some 17 Launch Systems, serving 13 Receive Systems, interconnected with 10 HPS 120° Divert Valves, from 3 x 3" HPS Piggable Matrices operating at up to 100°C in both Safe and Zone 1 environments.

When commissioning was complete, HPS engineers ensured Croda staff fully understood how the systems worked and were fully trained to properly and safely operate and maintain the equipment.



The Results

Because this was a greenfield site, there are no 'before and after' statistics available. However, the pigging systems and valve matrices ensure highly efficient liquid transfer and minimisation of product waste. Pigging also helps ensure minimum downtime and enhances safety by reducing manual intervention and the risks of incorrect operation and error.

By saving energy, chemicals and resources, pigging also helps towards Croda's environmental sustainability.

Contact HPS

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