



PRODECON® CHEMICAL CLEANING AND DECONTAMINATION SOLUTIONS

SAFETY. QUALITY. SCHEDULE.



ProDecon® WORKS WITH REFINERS, POWER GENERATORS AND PETROCHEMICAL MANUFACTURERS TO DELIVER FASTER TURNAROUND TIMES, RESTORE EQUIPMENT PERFORMANCE AND DEFER SHUTDOWNS.

REFINER



POWER GENERATOR



PETROCHEMICAL MANUFACTURER



At ProDecon®, our relentless focus on safety, quality and schedule helps to keep your processes operating efficiently with longer run times and shorter turnaround times. We draw on our extensive experience, broad range of chemicals and services, and in-house research and development capabilities to select the best existing options and/or develop bespoke solutions to meet your needs.



OUR COMPANY

ProDecon® was formed in 2009 by a group of experts with 50 years' collective experience in chemical cleaning and refinery decontamination services. We created a strategy, built around this experience, that focused on meeting customers' needs by safely delivering the highest quality of service.

This led to the creation of our market-leading Decon-88™ chemistry. Based on this outstanding formulation we went on to develop a family of internationally acclaimed products to meet a range of demands for online, in situ and shutdown cleaning.

While maintaining our focus on safety, quality and schedule, we have continued to grow and innovate.

Through research and development, we have engineered a broad range of speciality chemicals and a purpose built fleet of liquid and vapour-phase equipment that can be mobilised quickly and adapted to the needs of any system, from single columns to full units and speciality work. Our services meet stringent environmental standards and are available internationally through strategic partnerships.

LIVES AND LIVELIHOODS ARE OUR TOP PRIORITY. WE CARE ABOUT THE HEALTH AND SAFETY OF EACH OTHER, OUR CUSTOMERS AND ALL OTHERS AFFECTED BY OUR WORK.

OUR SERVICES

We offer a broad range of chemical cleaning and decontamination services, from project design through execution to effluent handling. Working closely with you to understand each issue helps us to apply the best solution from our wide range of REACH-compliant proprietary chemicals.

Because we are not tied to a single chemistry or specialist service, we can select the best end-to-end solutions for your needs. And, for unique issues, we have the research and development capabilities to develop innovative chemistries.

In addition to helping to reduce turnaround times in refineries and petrochemical plants, we offer online and in situ services that can help to restore performance and defer shutdowns. Our specialist services are widely used to improve process efficiency across all sectors, including energy and industrial.

Refinery decontamination

We specialise in delivering hydrocarbon-free units, including fluidised catalytic crackers, crude distillers, vacuum distillers, cokers, hydrocrackers, vis-breakers, and amine, sour-water and vapour-recovery systems.

To reduce turnaround times, we use our engineering expertise to integrate our hydrocarbon decontamination services into your shutdown programmes. A high standard of cleaning and safe entry with zero LEL, H₂S and pyrophoric materials can be achieved in less than 10 hours.

In addition to specialty chemicals for heavy hydrocarbon fouling, we offer online and in situ chemical cleaning for scaling and corrosion deposits.

Vapour and liquid-phase decontamination

Our V-Purge™ and Decon-88™ chemicals offer highly effective vapour-phase decontamination. The chemistry is introduced into the steam flow to free and remove the hydrocarbon contaminants. Our engineered process integrates with normal refinery steam-out procedures to accelerate degassing and significantly improve hydrocarbon deposit removal. V-Purge™ chemistry oxidises pyrophoric iron sulphide, thereby leaving the columns and vessels safe for people to enter with zero LEL, H₂S and benzene in 8–12 hours. With a minimally invasive setup and little effluent generation, our vapour-phase decontamination is a cost-effective and rapid option for all fractionation columns.

For heavier circuits and fouling, we provide a full liquid-phase decontamination service, including circuit design, temporary piping, pumps and effluent handling. The service helps to minimise and often eliminate the need for subsequent mechanical cleaning.



SAFE ENTRY WITH ZERO LEL, H₂S AND PYROPHORIC MATERIALS CAN BE ACHIEVED IN LESS THAN 10 HOURS.

Liquid and vapour-phase decontamination are commonly combined to provide rapid vessel cleaning and gas-free conditions, thereby enabling maintenance to proceed immediately on handover and reducing the overall turnaround schedule.

Heavy residue and slurry circuits

Asphaltene, wax and tar fouling in vis-breakers, vacuum residue distillers, cokers and slurry circuits can develop into hard deposits that cause efficiency losses and present mechanical-cleaning challenges. Our Pro-Flow™ range and Pro-Solve™ products are designed to alleviate this issue. Working in the wash-oil phase during a turnaround, Pro-Flow™, which also has online applications, breaks down heavy asphaltenes, thereby improving sludge removal and accelerating handover. Both products can be applied to heat exchangers in situ to help restore performance and thus save energy and increase productivity.

Ammonia salt treatment

Ammonia salt deposits can damage refinery systems, cause energy losses and foul systems thus restricting flows and inhibiting valve and PSV operation.

ACF™ is an online treatment that helps to prevent salt fouling and corrosion for stable feed rates, higher productivity and increased reliability. Importantly, the reaction is irreversible and the salts are transported safely out of the system without being deposited elsewhere. It is environmentally friendly and can also be used to treat chloride fouling in fractionators, compressors, heat exchangers and fuel gas and flare systems.

H₂S and sulphide treatment

We supply a range of sulphide treatment solutions for different applications, including downhole injection, clean flaring, sour-water treatment and odour control. The ProDecon®-216™ range offers rapid H₂S removal from oil, water and gas in an irreversible reaction without the formation of elemental sulphur.

Heat exchanger performance restoration

We offer a range of services to restore and maintain heat exchanger performance, including the ability to perform online fouling removal and prevention. These services help to minimise downtime by removing fouling in shell-and-tube exchangers caused by heavy hydrocarbons, asphaltenes, scaling and corrosion deposits.

We use our wide range of proprietary chemicals to specifically target different sets of foulants for in situ removal of heavy hydrocarbon deposits without the need to pull the bundle. All the required temporary pumps, piping and temporary heat exchangers are provided to meet refinery specifications.

OUR SERVICES



Fractionator redistributor following decontamination

Fin-fan performance restoration

We provide nonabrasive media blasting that helps to restore fin-fan and air-cooled-condenser performance to maintain production and minimise energy costs.

Pro-XL™, our specialist dry, soluble, crystal medium, enables us to decontaminate the externals of the most challenging overhead air cooled systems. Critically, we can do this without using aggressive methods such as hydrojetting that may damage the equipment and without needing scaffolding or access to the plenum chamber.

Boiler performance restoration

Through our expertise and experience, and using our fleet of specialised chemical cleaning equipment, we provide full in situ chemical cleaning to restore boilers to the manufacturers' operational efficiency and reliability performance standards. This service typically includes

- mechanical cleaning and water flushing to remove loose scale and other debris
- alkaline treatment to remove oil, grease and other organic compounds accumulated during construction, installation or repair
- where required, copper removal from contaminants contained in the boiler feedwater system
- solvent cleaning, a process in which inhibited acid removes mill scale and other iron oxide deposits
- neutralisation and passivation, which is essential after acid cleaning.

Our team of engineers design and execute cleaning procedures that achieve targeted results, based on initial system metallurgy assessments, scale analyses, water treatment and historical data, and that include chemical processes, flow paths and temperature and pressure requirements. For further efficiency improvements, we provide an online cleaning service.

Online fireside furnace and boiler performance restoration

Incomplete combustion is inevitable and leads to fouling of heat transfer surfaces and the formation of carbon deposits, sulphates and vanadates.

ProDecon® provides cutting-edge Polarchem® fireside furnace and boiler cleaning products, which are injected while the furnace is online into the periphery of the flame. They react with most deposit types, thereby making them friable, dry and easy to remove. The reaction also prevents sulphuric acid formation and thus reduces corrosion risk. The process does not affect the combustion process and does not damage the refractory or thermocouples.

Cleaning quickly improves efficiency and can significantly extend run times and eliminate the need for water washing during shutdowns. Whether it is a one-off performance restoration solution or part of a continuous preventive maintenance programme, the process can reduce fuel consumption, corrosion, air pollution and soot blowing, and extend the intervals between shutdowns.

Pre-commissioning cleaning

We combine our expertise across a range of services to offer pre-commissioning cleaning that helps to ensure smooth plant start-ups. Corrosion and mill scale removal for boilers and piping are designed and executed using our own pumps, temporary piping, heat exchangers and tanks to provide a comprehensive service. Our steam blowing service includes full engineering design and flow modelling along with targeted and silenced execution services.

SPECIAL PROJECTS AND UNIQUE SOLUTIONS

We combine our extensive expertise across a full range of industrial services to engage in special projects and provide unique solutions, such as

- **Wastewater treatment**, including chemical treatment to meet discharge requirements, oil-water separation, solids separation and sludge dewatering
- **Non-man entry tank cleaning** with combined physical and chemical solutions tailored to the given product and tank size, from large diameter crude tanks to small storage tanks and rail cars
- **Gas plant and slug catcher cleaning** for high H₂S and pyrophoric materials
- **Pipeline cleaning**, including high-velocity flushing, pigging and line drying
- **Decommissioning and facility cleaning** and mothballing.

CASE STUDIES

V-Purge™ vapour-phase hydrocracker decontamination

A South American refiner needed to minimise its hydrocracker turnaround time by rapidly decontaminating the unit and quickly creating safe working conditions.

We worked closely with the customer to integrate V-Purge™ vapour-phase decontamination into the shutdown programme to remove hydrocarbon deposits, and eliminate LEL, H₂S, benzene and other hazardous gases, and oxidise pyrophoric iron sulphide deposits in a single step.

Chemical injection lasted 10–12 hours. Simultaneous decontamination of the entire unit, including all the pipelines, heat exchangers and vessels, was completed within 24 hours.



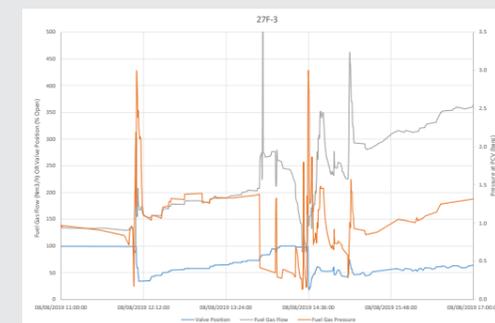
Fractionator column internals

ACF™ online ammonia salt treatment

A UK refiner was considering a costly shutdown to remediate a poorly performing furnace. To avoid this, the company wanted to decontaminate the fuel gas header feeding the furnaces that had become partially blocked by ammonia salt deposits.

Our experienced personnel completed the decontamination in a single shift, including rigging the injection equipment, by introducing ACF™ chemistry into the main fuel gas header. Immediate improvements in flow and pressure were recorded. Shutdown was avoided and the furnace was kept online during the decontamination process with no impact on its performance. The customer confirmed that the system had been restored to its full operating capacity.

To see our latest case studies, please visit www.prodecon.com.



Fuel gas flow improvement immediately after ACF™ treatment



STRATEGIC PARTNERSHIPS

ProDecon® is aligned with selected technology partners and international distributors to ensure that it provides its wide range of specialist solutions internationally, at competitive rates and without compromising on safety and quality. Directly, and through our partners, we operate in Europe, the Middle East, India, the Far East and South America.



CONTACT US

Have you got a decontamination or chemical cleaning challenge? Would you like to improve efficiency and reduce turnaround times without compromising on safety? Are you interested in becoming a technology partner or agent?

Let us connect today to discuss your needs.

+44 (0)1270 446601 | sales@prodecon.com | [LinkedIn](#)

www.prodecon.com