

Preheat Systems

SULPHURIC ACID TECHNOLOGY



Worley Chemetics' Preheat Systems bring state-of-the-art design, fabrication, reliability and superior performance to **significantly accelerate plant start-up times.**

CUSTOM PREHEAT SYSTEM DESIGNS TO MATCH YOUR PLANT NEEDS

- Worley Chemetics provides a complete vertically integrated preheater system to significantly increase plant ramp up times.
- Our preheater system designs allow for unlimited flexibility for integration into pre-existing plants reducing costs and schedule risks.
- Preheater systems are custom designed using proprietary knowledge that increase thermal/mechanical efficiency resulting in increased unit life and lower maintenance.
- Proprietary thermal designs allow for smaller units for the same process conditions as normal traditional designs.
- All heat exchanger tube to tubesheet joints are welded to ensure leak free operation.
- Worley Chemetics' preheat systems can include custom designed preheat furnaces utilizing all types of combustion fuels including heavy oils.

ABOUT US

Sustaining our world for generations to come through technological and environmental innovation, Worley delivers Chemetics® sulphuric acid solutions around the globe with a focus on site reliability, plant economics and workforce development.

Over the past 60 years, Worley Chemetics' full lifecycle solutions and equipment have enabled more than 800 plants to achieve higher capacities and availability, lower costs of operation, reduced emissions and greater safety. Leveraging our R&D lab and custom-built fabrication facility in Canada, global logistics management capabilities, specialized project teams and worldwide network of trusted suppliers, we deliver optimal solutions and equipment for your sulphuric acid facility, from greenfield projects to maintenance and turnarounds.



GET IN TOUCH

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Preheat Systems

FEATURES & BENEFITS

Combustion chamber

Integrally designed with the preheat exchanger.

Refractory lined mixing combustion chamber

Complete with valve trains, fans, and burner management system.

Radial flow design

Radial flow tube layout significantly improves thermal efficiency of the preheat exchanger resulting in overall smaller heat exchanger surfaces for given allowable gas pressure drop.

Disk and donut baffle arrangement

Minimizes thermal stresses across the bundle elimination circumferential temperature variation.

Tube to Tubesheet welding

GTAW automatic strength welded tube to tubesheet joints provide consistency during manufacturing process resulting in long and leak free life for preheat exchangers.

Metallurgy selection

Material is selected based on process conditions promoting life span and robustness of the preheat systems.

Vertical arrangement

Worley Chemetics' designs provide an innovative vertical arrangement of counter-current gas/air flows, reducing differential expansion and increasing longevity of units. Our design replaces co-current "piggyback style" designs provided by other firms, which are prone to failure because of extreme differential expansion, flame impingement and tube buckling.

Easy access

Worley Chemetics' designs allow full access to preheat furnace and bottom tube-tube sheet for inspection and maintenance purposes.

Insulation

Refractory and insulation system allow for quick heat up of the exchanger and process streams.

Expansion joints

Fabric or metallic expansions joints used to minimize thermal stresses and mechanical strains.

Quality

Maximized in shop fabrication for ultimate quality control and support during installation and operation.

Project support

Worley Chemetics provides experienced support starting from the initial installation to operation.



Preheat Exchangers fully fabricated and shippable to site



Preheat Exchanger being installed



Preheat System (heat exchanger and combustion chamber) as one unit