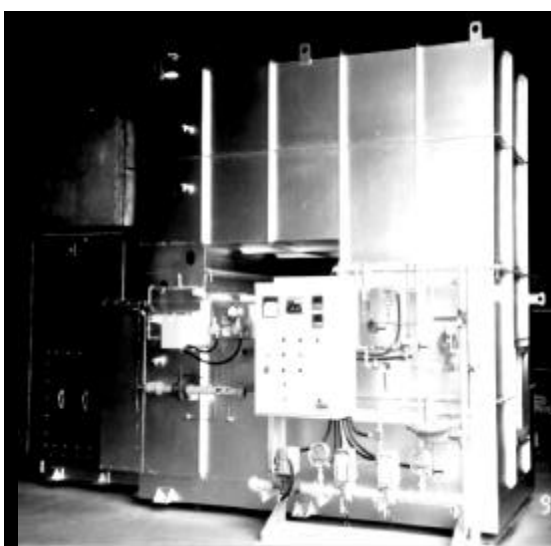


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OE Chlorinated Vapor Treatment

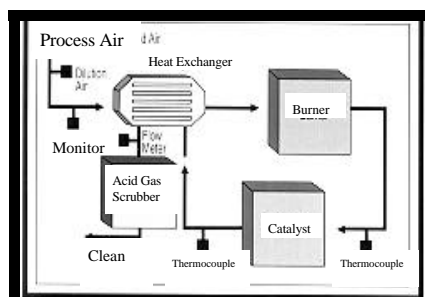
How the System Works



The air passes through the primary side of the heat exchanger and then into the burner. The catalytic oxidizer is direct fired using an auxiliary air burner to maintain at least 650° F combustion temperature, with at least 5% dry flue gas oxygen.. The heated VOC laden air passes through the Engelhard catalyst, where oxidation occurs, which is an exothermic reaction. The VOC's in the air stream are converted to water, carbon dioxide, inorganic acid and heat. The hot cleaned air is then passed through the secondary side of the heat exchanger where it is used to preheat the incoming air.

Preheating the air reduces the overall fuel demand of the system. The 300 - 400°F air exiting the Catalytic Oxidizer in

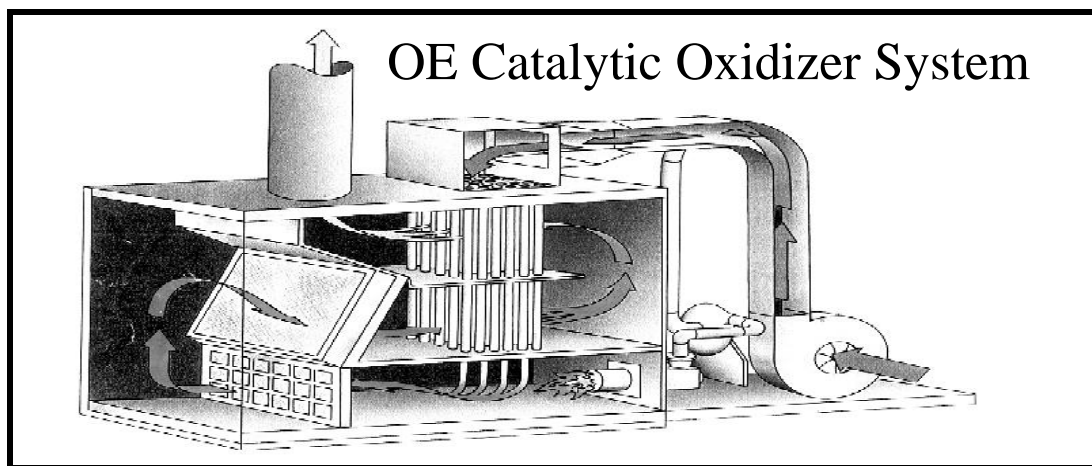
the quench chamber is sprayed onto the air stream where temperature is lowered below 150°F so that conventional acid resistant scrubber technology can be used. The scrubber system will consist of several components including a packed tower, caustic feed system with storage tank, and recirculation pump.



OE System Schematic

Chlorinated Vapor Treatment

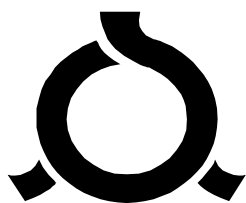
Onion Enterprises has cost effective designs for the most difficult process streams. OE provides systems with greater than 99.999% percent destruction. Call the OE VOC expert at 925-855-0905



OE Catalytic Oxidizer Gas System

The Onion Advantage

<i>FEATURES</i>	<i>BENEFITS</i>
CATALYTIC OXIDIZER	
Reactor has fully welded, with high density insulation.	Our QA/QC testing provides safe and reliable long term operations
60 % heat recovery, Stainless steel plate a heat exchanger.	Provides cost effective operation without the high risk leak potential of the tube and shell exchanger.(typically have 0.1% losses).
FM approved burner that runs on either natural gas or propane	Offers fuel flexibility
Thermocouple, controller and modulating maintains proper air temperature to maximize destruction efficiencies	Hydrocarbon destruction up to 99%
Engelhard Catalyst-Specially designed for halogen destruction	Provides the highest destruction efficiencies, 99%+ that meet CARB regs.
Control Panel Has UL labeled components	Added assurance in quality and reliability
HCL QUENCH AND SCRUBBER	
Quench Chamber	Quickly drops temperature of gas and reduces the risk of dioxins and furons
pH control system automatically monitors and adjusts the system acidity	Maintains an efficient neutralization system
Automatically adjusted blow down valve purges solution from the sump	No salt build up
Conductivity controls	Regulates discharge from scrubber
Temperature Safety shut down at 150°F	Safe Operation
Inspection Port	Ease of operation



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