

# VOC CONTROL

Thermal Oxidizer & Catalytic Thermal Oxidizer



ISO9001&14001



OHSAS18001



S E M I S 2

**ACTIVE**

www.ATEI8.com

The spirits of "Innovation", "Integrity & Credit" and "Service" are our team members' focus on providing our customers professional services in environmental projects. We pursue the respect of natural environment, and execute effectively the energy economization & waste reduction operation, in order to reduce the pollution and impact to the environment.

#### **THERMAL OXIDIZER (TO)**

ACTIVE Thermal Oxidizer converts harmful air pollutants to carbon dioxide and water at temperature ranging from 730 to 760°C. Thermal oxidation is achieved when process exhaust are passed through the burner flame, mixed, and held at elevated temperatures in the combustion chamber above 0.5 sec. ACTIVE Thermal Oxidizers utilize a multi-pass shell and tube or plate type heat exchanger to preheat the incoming exhaust. In most cases ACTIVE can guarantee a VOCs destruction removal efficiency (DRE) above 99%.

#### **CATALYTIC THERMAL OXIDIZER (CTO)**

ACTIVE Catalytic Thermal Oxidizer converts harmful air pollutants to carbon dioxide and water at temperature ranging from 350~400C. A precious metal industrial grade catalyst is used to promote oxidation when process exhaust fumes are passed through the catalytic chamber. ACTIVE Catalytic Thermal Oxidizers utilize a heat exchanger to preheat the incoming exhaust, thus reducing operating costs. In most cases ACTIVE can guarantee a VOC destruction removal efficiency (DRE) above 99%.

#### **PATENT**

- Structure to prevent gas leakage of oxidizer system, patent NO.M347222
- Temperature-controlled fuel supply device of burner, patent NO.M350608
- Air-tight structure for inlet and outlet air stream, patent NO.M348203

#### **ACTIVE THERMAL OXIDIZER & CATALYTIC THERMAL OXIDIZER**

##### **□ COMBUSTION CHAMBER**

ACTIVE combustion chamber is designed as an integral part of the unit and is manufactured of a heavy gauge steel. The internal components are fully welded and insulated using ceramic fiber block. The shell is provided with a full diameter access door, allowing easy maintenance for the chamber.

##### **□ CATALYST**

ACTIVE catalyst has been used commercially for air pollution control. It is active and stable under industrial conditions. The precious metals are deposited on monolith substrate. To notice some contaminants are catalyst deactivators and contribute to shortened catalyst life, ex. phosphorous, silicones, lead, iron, mercury, nickel, arsenic, chrome, antimony, copper, zinc, tin...etc. It can tolerate trace amounts of impurities under 0.3% by weight such as sulfur without activity decline. Please check details with our engineers.

##### **□ COMBUSTION COMPONENTS**

Burner is used to provide the necessary heat to insure complete oxidation. Many types of burner can be chosen, including single/dual fuel, In-line/Pre-mix, Low NOx Burner. Maximum burner capacity is used for start-up only before being automatically modulated to a low fire setting to maximize efficiency. The fuel train will meet IRI/FM requirement. ACTIVE provide energy saving alternatives for patented temperature controlled type fuel supplied system.

##### **□ HEAT EXCHANGER**

The heat exchanger is shell and tube or plate type design, the tubes usually use stainless steel. The heat exchanger is fabricated of a heavy duty stainless steel and designed as an integral part of the system. It is fully welded and includes the special stainless steel expansion joints. It is insulated with ceramic fiber.

##### **□ AUTOMATIC CONTROL**

ACTIVE electrical engineers design automatic controls to meet virtually any customer requirement, including interface with production processes. The control panel includes the fan motor starter, control relay, burner controller, high temperature safety switch, flame safeguard control relays with remote reset, fuses and terminals, etc...

##### **□ BYPASS DUCTWORK**

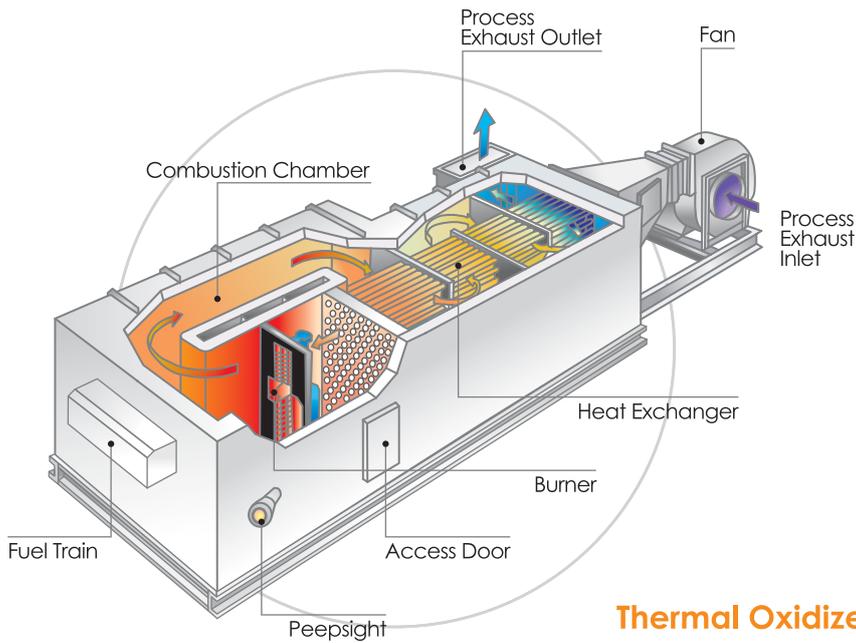
When required by design, the bypass system will utilize automatic temperature controlled dampers to provide a safe route for the process exhaust air stream in the unlikely event of a solvent overload condition.

##### **□ FAN**

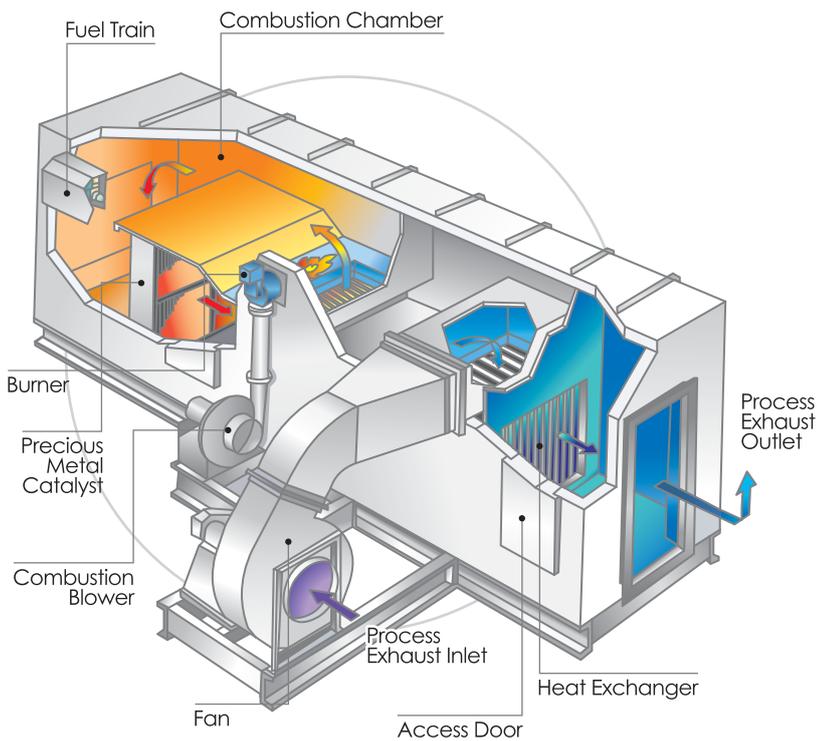
The industrial grade fan is used to convey the exhaust from the process to and through the oxidizer. The air-tight housing will be fabricated of continuously welded, heavy gauge steel with AMCA C spark resistant construction. The fan is mounted on a spring isolated unitary base.

##### **□ STACK**

The stack is furnished to discharge the cleaned exhaust at a specified elevation. The stack is fabricated of carbon or stainless steel with outer insulation.



**Thermal Oxidizer**



**Catalytic Thermal Oxidizer**

**CHARACTERISTICS**

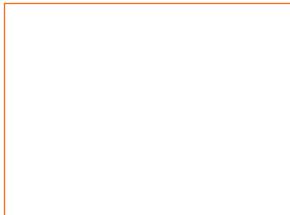
- ❑ Unique oxidizer system supplier with ISO9001 & 14001, OHSAS18001 and SEMI-S2 certification.
- ❑ Excellent R&D group have numbers of design patents about oxidizer and energy-saving.
- ❑ Skid-mounted design.
- ❑ Up to 8:1 system turn-down ratio for airflow volume.
- ❑ Base & precious metal catalyst available.
- ❑ Highly operating and system integration experience for supply oxidizer, fan, gas train(FM/UL/ IRI), ductwork, stack and control.
- ❑ Highly-experienced design team provide assessment services of safety(ex. L.E.L), function, system pressure balance, seismic sestraints( 0.5G ), operating cost, etc.
- ❑ Standard 6 interlocks for system safety, like oxidizer air pressure, oxidizer and combustion fan & flame status, fuel pressure, high system temperature.
- ❑ Supply custom-design for different VOCs exhaust industry.
- ❑ Automatic system monitoring, easy operation like one-button start. Man-machine interface touch panel could completely monitor important operating parameters.
- ❑ Turnkey service for installation, start-up, regulation-compliance test, operation and maintenance training.

**OPTIONS**

- ❑ Pre-process fan
- ❑ Customer process pressure control
- ❑ Remote monitoring
- ❑ Human-machine interface
- ❑ UPS for fans and control
- ❑ Continuous emission monitor(THC FID)
- ❑ Vibration isolation(G2.5)
- ❑ Structural support
- ❑ Control room
- ❑ Silencer
- ❑ FM sprinkler
- ❑ Utility hook up



# **I**NDUSTRIAL APPLICATIONS



Surface Coating  
Wood Finishing  
Semiconductor  
Electronics  
Printing  
Flexible Packaging  
Paint  
Chemical Processing  
Pharmaceutical  
Investment Casting  
Pulp & Paper  
Petrochemical  
Basic Chemistry  
Synthetic Resin & Plastic  
Plastic Leather/Board/Pipe  
Oil and Coal  
Wire and Cable  
Food Processing  
Leather Tanning  
Tire Manufacturing  
Metal Heat-Treatment  
PCB Manufacturing  
Waste Processing  
Waste Water Processing  
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Can Making  
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