

SULPHUR TAIL GAS THERMAL OXIDIZER

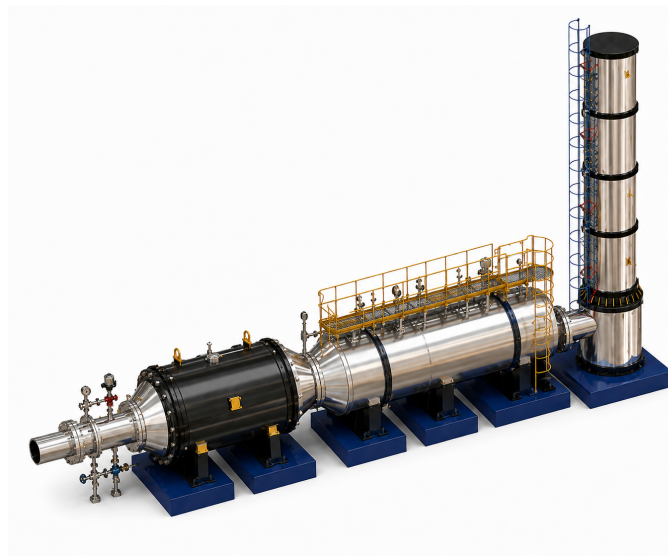


SULPHUR CONTROL WITHOUT COMPROMISE FOR CLAUS UNIT AND SRU TAIL GAS

Claus tail gas still carries H₂S, COS, and CS₂ after the SRU's reaction stages have finished extracting elemental sulphur, and none of it can be discharged directly to atmosphere. SRU upsets, start-ups, and shutdowns swing that load further, right when the downstream equipment is least tolerant of instability.

CRA's Sulphur Tail Gas Thermal Oxidizer burns tail gas at a temperature between 650°C and 1,480°C, set according to sulphur load and process design, with residence time engineered to fully oxidize H₂S, COS, CS₂, and mercaptans into SO₂ before the gas exits the chamber. Corrosion-resistant materials and high-integrity refractory linings hold up under the sulphur load, while optional heat recovery, pre-combustion scrubbing, or post-combustion scrubbing stages integrate downstream to manage the converted SO₂ and meet site-specific emission limits. The system is engineered to absorb load swings from SRU upsets, start-ups, or shutdowns with stable combustion, reaching greater than 99.9% destruction efficiency across variable process loads.

CRA brings over 30 years of combustion design experience to extreme sulphur service, with thermal modelling, materials R&D, and fabrication under one roof, built to the same ISO 9001 quality system that governs every CRA skid.



CRA ADVANTAGE

+ >99.9% Destruction Efficiency (Total oxidation of sulphur-bearing compounds, including H ₂ S, COS, and mercaptans)	+ Optimal Design & Performance + Accomodate Special Requirements
+ Designed For High Temperature (Operates at 1,200-2,700°F, 650-1,480°C, depending on sulphur load and process design)	+ On-Time Delivery + Responsive & Organized Team
+ Handles Variable Load Conditions (Engineered to absorb load swings from SRU upsets, start-ups, or shutdowns with stable combustion)	+ Stringent Quality Management + Fast Turnaround
+ Pre And Post Combustion Scrubbing (Advanced pre- and post-combustion scrubbing technologies engineered to meet the specific needs of each application)	+ Cost Effective Maintenance Packages + Long-Term CRA Support

APPLICATIONS

Supplied for destruction of residual reduced sulphur compounds from Claus SRU tail gas and sulphur recovery processes

- + SRU Tail Gas
- + Amine Unit Off-Gas
- + Claus Plant Off-Gas
- + Sulphur-Rich Off-Gas From Petrochemical Units
- + Thermal Reactors (Reaction Furnace Exhaust)
- + Acid Gas From Gas Treating

CRA
7, Sector 140A
Noida, UP, 201304

Learn more at www.cra.energy

✉ contact@cra.energy

☎ 0120 415 6787 • +91 85060 09433



©Combustion Research Associates

WORKING & PERFORMANCE



CORROSION-RESISTANT CONSTRUCTION HOLDS UP ACROSS SWINGING SULPHUR LOADS

WORKING

- + Tail gas enters the combustion chamber and burns at a temperature between 650°C and 1,480°C, set according to sulphur load and process design
- + Residence time is engineered to fully oxidize H₂S, COS, CS₂, and mercaptans into SO₂ before the gas exits the chamber
- + Corrosion-resistant materials and high-integrity refractory linings hold up under sustained sulphur exposure
- + Optional heat recovery, pre-combustion scrubbing, or post-combustion scrubbing stages integrate downstream to manage converted SO₂ and meet site-specific limits
- + Combustion stability is engineered to absorb load swings from SRU upsets, start-ups, or shutdowns without loss of destruction efficiency

SULPHUR SERVICE AT A GLANCE

- + DRE: >99.9%
- + Operating Temp: 650-1,480°C
- + Target Compounds: H₂S, COS, CS₂
- + Application: SRU Tail Gas
- + Downstream Control: Heat Recovery, Pre/Post Scrubbing (Optional)

Thermal cycling during SRU start-up and shutdown is more damaging to refractory and waste heat equipment than years of steady operation, so materials and control logic are sized against transient swings, not just steady-state load.^L

TYPICAL DESIGN & PERFORMANCE PARAMETERS

Destruction efficiency	>99.9%
Operating temperature	650-1,480°C (1,200-2,700°F), sulphur-load dependent
Target compounds	H ₂ S, COS, CS ₂ , mercaptans
Primary application	Claus SRU tail gas
Downstream control (optional)	Heat recovery, pre-combustion scrubbing, post-combustion scrubbing
Construction	Corrosion-resistant materials, high-integrity refractory lining
Regulatory basis	Designed to meet SO ₂ , NO _x , CO, and unburnt hydrocarbon limits
Thermal cycling consideration	Start-up/shutdown transients drive more equipment stress than steady-state operation, informing refractory and waste-heat-boiler design margins ^L

Figures per CRA published product data; items marked with a superscript L are drawn from published industry literature.

CRA
7, Sector 140A
Noida, UP, 201304

Learn more at www.cra.energy

✉ contact@cra.energy

☎ 0120 415 6787 • +91 85060 09433



©Combustion Research Associates