

## WHY CHOOSE ELECTRIC HEAT?

- Consistent pricing
- Clean-running operation
- No pollution
- Quiet operation
- Reduced footprint and envelope size
- Minimal maintenance
- Low operating cost
- Safety
- Large turndown / precise control

### Freeze Protection and Heat-Loss Protection

Heat trace counteracts the heat loss from process equipment and piping through its insulation, to prevent solution precipitation and the increase of viscosity or solidification of product, and to provide freeze prevention on water lines.

### Storage Tanks

Storage tank facilities for products such as sodium hydroxide and DI water are heated with hazardous-duty flanged immersion heaters to ensure precise temperatures needed for process conditions.

### Lubricating Oils for Turbines and Compressors

Immersion heaters provide direct heating of lubricants for turbines and compressors.

### Auxiliary Steam Generator

Compact, low-pressure electric steam boilers provide on-demand steam supplies for super critical times during start up and peak demands.

### Fuel-Gas Conditioning and Dew Point Heaters

Electric inline circulation heaters capable of preheating supply gas streams up to 1,400°F prevent corrosive condensation from forming and damaging expensive turbine blades.

### Exhaust Stack and Accessory Modules

Hazardous-duty convection and blower air heating units provide safe heating in places like turbine and vent fan enclosures, exhaust stacks, and accessory modules.

### High-Pressure Steam Piping

High-temperature metal-sheathed heating cable is used for freeze protection on high-pressure steam piping in hazardous-rated area locations such as the Heat Recovery Steam Generator (HRSG).

### Motor and Enclosure Heaters

Component strip heaters for medium to large size motors and enclosures prevent condensation agents to increase life and performance.

### Temperature Controls, Sensors, and Control Panels

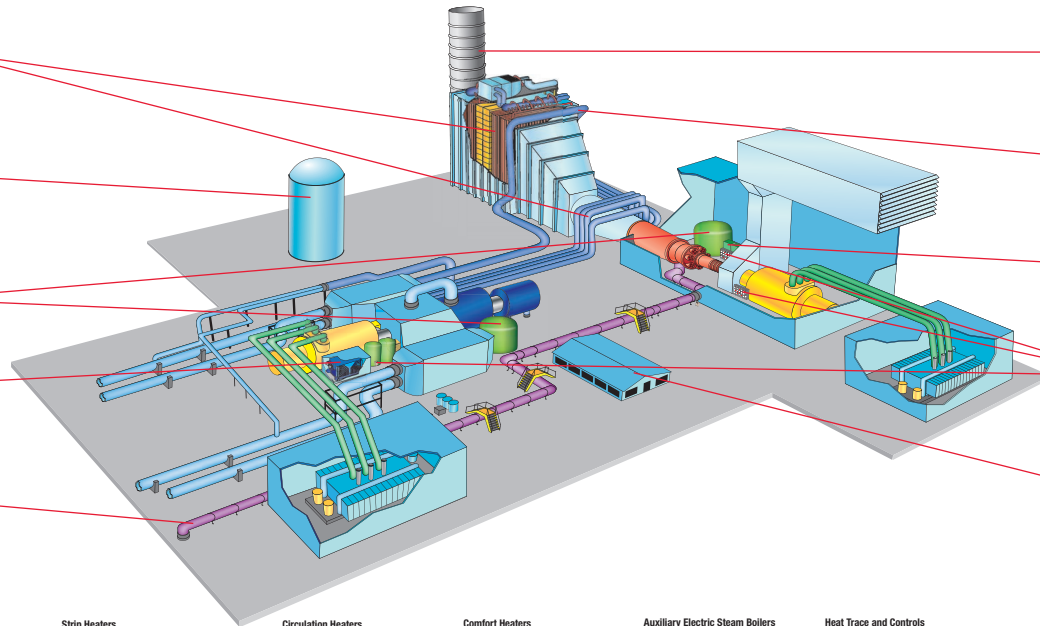
Thermocouple and RTD sensors, electronic PID DIN temperature control units, and SCR power switching panels minimize temperature swings to increase life of the heaters and tighter control.

### Maintenance Facilities and Wash Water Skids

Convection- and blower-type heating units heat enclosed spaces for warming both equipment and personnel.

## WHY CHOOSE CHROMALOX?

- Broadest product line and experience unmatched in the industry
- Precision-engineered heat and control systems for more alternative fuels processes throughout the world than anyone
- Full design and engineering for virtually any electric process heat and control application
- Vertical integration in manufacturing capabilities
- Customized service ranging from start-up and training, to ongoing maintenance diagnostics, to emergency response—all based on complete knowledge of your components parts and systems.



### Large-Tank Heating Systems

Chromalox large tank heaters employ metal-sheath tubular or ceramic-insulated, open-coil pipe insert heating components for use in 2- and 3-inch nominal pipe sizes. This unique construction allows heating elements to be changed or field-serviced without draining the tank. Strategically located sensors monitor tank temperatures and energize the heaters, while timers and controllers fully automate the heating operation for a complete tank heating system. Options include special ratings, lengths to 40 feet, replacement parts, and back-up controls. Separate insert heaters are also available.



### Immersion Heaters

Chromalox immersion heaters apply heat directly at virtually 100 percent efficiency. Basic mounting options include threaded, flanged, and over-the-side designs. Various temperature control options permit very tight process temperature control. These direct-heating units feature carbon/INCOLOY/stainless steel sheathed elements and thermowells, integral controls, and moisture- and explosion-resistant terminal enclosures.



### Strip Heaters

Chromalox offers a variety of strip heaters ruggedly constructed for efficient heat transfer and long, dependable service. High-quality, coiled, alloy resistor wire, embedded in specially formulated, high-grade refractory material, is uniformly spaced over the width and length of the heater for even heat distribution. A variety of sheath materials is available, including rust-resisting iron, MONEL®, chrome steel, and INCOLOY®—all with a high-emissivity black oxide finish for maximum heat transfer. Many choices of terminal locations simplify layout between elements and power lines. Special ratings and sizes can be readily manufactured.



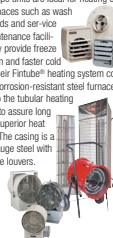
### Circulation Heaters

Our circulation heaters are designed to heat a flowing medium using in-line or side-arm piping configurations. A wide selection of kilowatt ratings, materials, vessel sizes, terminal enclosures, control features, and mounting methods are available. INCOLOY® sheath elements, stainless steel vessels, and high-pressure ASME ratings enhance safety and the service life of turbines.



### Comfort Heaters

Chromalox general-purpose convection- and blower-type units are ideal for heating enclosed spaces such as wash water skids and service and maintenance facilities. They provide freeze protection and faster cold starts. Their Fintube® heating system consists of corrosion-resistant steel furnace-traced to the tubular heating element to assure long life and superior heat transfer. The casing is a heavy-gauge steel with adjustable louvers.



### Auxiliary Electric Steam Boilers

Constructed of carbon or stainless steel with fiberglass insulation to ASME or PED code, Chromalox steam boilers and steam generators are safe, versatile, and efficient energy management systems that provide low- or high-pressure hot water or steam. They are packaged units that are completely assembled and ready to install, needing only a water feed-source and electric power hook-up to operate from existing distribution voltage, making installation simple.



### Heat Trace and Controls

Heat trace is used to counteract the heat loss from process equipment and piping through its insulation, to prevent solution precipitation and the increase of viscosity or solidification of product, and to provide freeze protection. Chromalox offers a variety of heat trace cables, temperature control, monitoring, and management in one, modular package; and all of the necessary components needed to complete the installation.



### Mineral-Insulated Cable

Ideal for the most demanding pipe tracing applications, Chromalox mineral-insulated cable can generate heat up to 900°F. Its INCOLOY® sheath is fire-resistant, does not support combustion, and provides a reliable ground for safe operation. It can be used in Division 1 and 2 hazardous areas. Custom configurations are available with single- or dual-conductor cable.



### Controls and Control Systems

From basic, low-cost temperature and process controllers, to monitors and over-temperature controls, to more sophisticated control systems like the Chromalox® IntelliPANEL™ 3-phase SCR power control panel featuring unique color touchscreen technology, Chromalox can design the right system for your plant's needs. We are the only heating element supplier offering a complete line of controls, control panels, and accessories.



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