

ETHANOL FUELS PRODUCTION

Chromalox®

Chromalox®
PRECISION HEAT AND CONTROL

**Precision Heat and Control Systems
For Ethanol Fuels Production**



ETHANOL PRODUCTION

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

Mash Slurry Tanks

Replaceable-element immersion and direct-immersion heaters are used to maintain the element mixtures at elevated temperature prior to being used in production. Sizes range from 5 to 500 kW, with integral control systems.

Comfort Heating

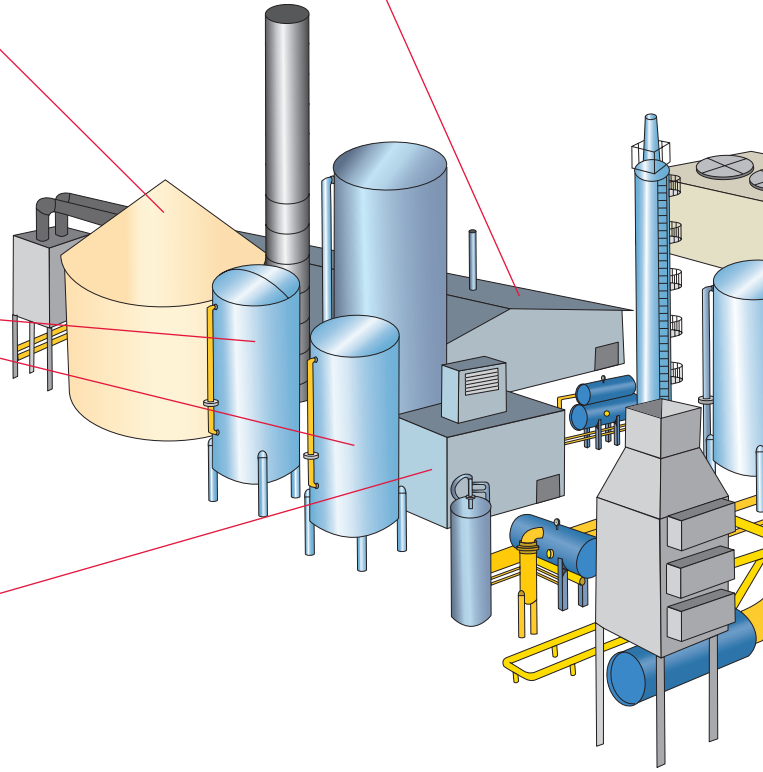
General-purpose convection- and blower-type units are ideal for heating enclosed spaces, preventing freeze-up of equipment, and enabling faster cold starts. The heating system contains corrosion-resistant elements with heavy-gauge steel casing and adjustable louvers.

Syrup Tanks

Replaceable-element immersion and direct-immersion heaters are used to elevate temperatures for higher viscosities prior to pumping. They can also be used to help prevent solidification during winter months. Sizes range from 5 to 500 kW, with integral control systems.

Hazardous Area Heating

Ruggedly designed for use in areas where the possibility of explosion or fire exists. UL-listed, CSA, CE, and ATEX models are available for wall or ceiling mounting. Ratings range from 1.8 to 39 kW.



Large-Tank Heating Systems

Chromalox offers four uniquely designed electric heating systems for large storage tanks. Complete with Chromalox® controls, these large-tank heating systems can be operated to maintain materials at the proper temperatures with little or no manual attention. Strategically located sensors monitor tank temperatures and energize the heaters, while timers and controllers fully automate the heating operation.



Process 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. 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.



Comfort Heaters

Chromalox electric comfort heaters provide efficient, economical heat for warehouse, shipping/receiving, distribution, and manufacturing areas. Convection, forced-air, and radiant heaters provide safe, clean, fast heat. Heavy-duty construction affords long, dependable service.



Cooling Tower

Easy, point-of-use screwplug-style heaters can be used for temperature maintenance of cooling water. Connections range from 1/4-in. to 2 1/2-in. NPT with a power rating of 1 to 40 kW.

Fire Protection Tanks

Replaceable-element immersion and direct-immersion heaters are used to prevent fire protection water from freezing during winter months. Sizes range from 5 to 500 kW, with integral control systems.

Process Lines

Electric heat trace is used for pipe temperature maintenance and freeze protection of process lines. Self-regulating cable and control systems are used for general-purpose and hazardous locations. Mineral-insulated and constant-wattage cables are also available.

Distribution Lines

Electric heat trace is used for pipe temperature maintenance and freeze protection of distribution lines that load the finished products onto transportation.

Hazardous-Duty Convection and Forced-Air Heaters

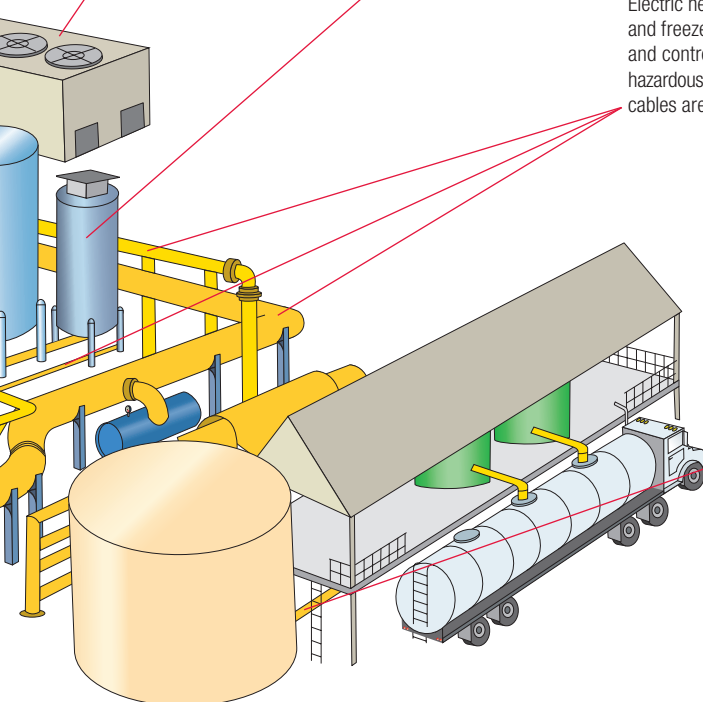
Hazardous-duty convection and forced-air blower-type heaters are designed for rugged industrial use in the presence of potentially flammable or explosive gases, vapors, or dusts. Numerous control options are available. Units are UL-listed, and CSA-, CE-, and ATEX-certified models are available for wall or ceiling mounting.

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 cable; temperature control, monitoring, and management in one, modular package; and all of the necessary components needed to complete the installation, including splices, power connection boxes, and water-resistant end-seal terminations.

Control Systems

From basic, low-cost temperature and process controllers, to monitors and overtemperature 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.



ETHANOL
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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
- Vertical integration in manufacturing capabilities
- Full design and engineering for virtually any electric process heat and control application

Chromalox Value-Added Products and Services Are Available Worldwide



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