

Fume Incinerators-Controlling Odors

In 2008 the Lubrizol Painesville facility significantly upgraded our two fume incinerators. What is a fume incinerator? If you could compare it to something in your home, it would be most like your furnace. The purpose of Lubrizol's incinerators is to destroy Volatile Organic Compounds (VOCs) through combustion. This combustion turns VOCs into carbon dioxide and water.

What are VOCs?

Volatile Organic Compounds are a group of carbon-based chemicals that easily evaporate at room temperature. While most people can smell high levels of some VOCs, other VOCs have no odor. Odor does not indicate the level of risk from inhalation of this group of chemicals. There are thousands of different VOCs produced and used in our daily lives.

VOCs in our homes:

Many products we have in our homes release or "off-gas" VOCs. Some examples of sources of VOCs are:



- Carpets and adhesives
- Composite wood products
- Paints
- Sealers and caulks
- Air fresheners
- Cleaning and disinfecting chemicals
- Cosmetics
- Fuel oil, gasoline
- Dry cleaning
- Newspapers

Why did Lubrizol upgrade?

In 2008 with replacement parts getting harder to find and to take advantage of newer technology and the need for greater capacity, Lubrizol decided to replace the fume incinerators at a cost of \$4.7 million. Important features we built into these new units included:

- Both fume incinerators are redundant – each is fully capable of handling the entire load of the plant independently. The two new incinerators can each burn 15,000,000 BTU/Hr. (Our previous incinerators ran at 3,000,000 and 8,000,000 BTU/Hr.)
- As a comparison, 1,000,000 BTU/Hr is equivalent to 10-20 household furnaces.
- The incinerators are run in parallel. Both receive vapors and if one goes down, the other remains on-line.
- Material of construction is stainless steel to minimize corrosion.
- Design includes Safety Instrumented Systems – safety emphasis on personnel, environment and equipment.



Why is this important to you?

- VOCs have been tested in the incinerators at a destruction efficiency of 99.96%, well within EPA guidelines. With the majority of our systems venting to these new fume incinerators, this is important to our environment and the health of our employees and neighbors.
- Control of these incinerators is automated using state-of-the-art instrumentation and control systems.
- In addition to eliminating VOCs, an added benefit of incineration is efficient destruction of odors. The increased reliability and efficiency of the incinerators reduces odors significantly – especially odorous sulfur compounds (mercaptans). Our fume incinerators are kept at 1650°F because it takes one second at 1650°F to destroy mercaptan odors.
An incredible benefit!