# **Process Combustion Corporation - WHITE PAPER**

# METAL SHREDDING How to be in Compliance with EPA Regulations

**Metal shredding** has emerged as a crucial component of the recycling industry, transforming discarded metals into valuable materials for reuse. However, with the increasing scale of this industry comes a heightened responsibility to comply with environmental regulations, particularly those set by the Environmental Protection Agency (EPA). This paper delves into the significance of compliance for metal shredding companies, the relevant EPA mandates, and effective strategies to manage emissions in their operations.



**Understanding EPA Regulations & Their Importance** The Environmental Protection Agency plays a vital role in safeguarding public health and the environment from the adverse effects of pollution. With the rise in metal shredding activities, the EPA has implemented stringent regulations aimed at minimizing the release of harmful pollutants generated during these processes. These regulations are essential not only for protecting the environment but also for ensuring the safety of workers employed in metal shredding facilities.

Non-compliance with EPA standards can lead to severe repercussions, including hefty fines and legal action, which underscores the importance for metal shredding companies to remain informed about and adhere to these regulations. By doing so, they can contribute positively to the environment, which maintaining their operational integrity.

#### Key EPA Mandates for Metal Shredding Companies:

To ensure compliance and reduce environmental impact, metal shredding companies must pay close attention to several key EPA mandates. Among them are:

#### Air Quality Standards

The EPA has established specific air quality standards that metal shredding operations must satisfy. These standards dictate the allowable limits on emissions of volatile organic compounds (VOCs), particulate matter (PM), and other hazardous pollutants. Regular monitoring of emissions is vital for detecting any exceedance of these limits. Companies should invest in advanced fume capture technologies to control fumes effectively and minimize their atmospheric release.

*Resource conservation and Recovery Act (RCRA)* Under the RCRA, companies are prohibited from disposing of certain hazardous waste in landfills or via incineration. Any hazardous materials produced during metal shredding must be properly managed, stored, and disposed of according to the regulations. This not only helps the environment, but also prevents contamination of soil and groundwater resources.

# Occupational Safety and Health Administration (OSHA) Compliance:

Worker safety is paramount in any industrial operation. Metal shredding companies must comply with OSHA safety regulations, which include providing appropriate training for employees and ensuring they wear recommended safety gear. By fostering a culture of safety, companies can protect their workforce while avoiding costly accidents and injuries.



#### **Emission Control: Challenges and Solutions:**

Metal shredding operations can inadvertently produce various harmful emissions, such as VOCs, nitrogen oxides (NOx), and particulate matter. The challenge lies in effectively managing these emissions to comply with EPA standards and protect both human health and the environment.

## Understanding the Sources of Emissions

Emissions typically arise from several sources, including:

- Lubricants used in machinery
- Fuel combustion in equipment
- Dust and particles released during shredding processes

These emissions can pose significant health risks, including respiratory issues, headaches, and environmental contamination. Therefore, it's imperative to implement robust controls.

#### **Effective Emission Management Solutions:**

To combat the challenges posed by emissions, companies can adopt the following treatment strategies:



Particulate Removal Systems: Implementing a dust collection system, such as a fabric filter, is vital for removing particulate matter from the air before it is released. This initial step is

crucial, especially if significant dust is present.

### Thermal Oxidizer for VOC Destruction:

After particulate matter removal, the next step is treating gaseous contaminants. A regenerative thermal oxidizer (RTO) can breakdown VOCs into carbon dioxide (CO<sub>2</sub>) and water vapor, effectively minimizing their impact on air quality.

### Wet Scrubbing Systems:

For acid gases present in the waste stream, a wet scrubber can be deployed as a secondary treatment method to neutralize harmful emissions before discharge.

## Selective Catalytic Reduction (SCR):

If NOx emissions are a concern, adding an SCR system further reduce these pollutants, ensuring compliance with regulatory limits.

Through these strategies, metal shredding can achieve enhanced fume capture and effective emission reduction, demonstrating commitment to environmental stewardship.

# Conclusion: Embracing Compliance for a Sustainable Future

In summary, understanding and adhering to EPA regulations is not just a legal requirement for metal shredding companies; it is also a crucial step toward fostering a safer work environment and a healthier plant. By complying with air quality standards, managing hazardous waste, and ensuring employee safety through OSHA guidelines, businesses can operate responsibly within the industry.

With the implementation of effective emission control

strategies, metal shredding companies can successfully minimize their environmental footprint, protect their workforce, and avoid costly penalties. In doing so, they not only adhere to EPA



mandates but also embrace a sustainable future where metal recycling is conducted in harmony with environmental preservation.

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