

# Unlock Hidden Profits

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## CASE STUDY

### Rotary Borings Dryers

#### Metalworking Companies Find Improved Safety, Operation, Efficiency

EnviroAir Rotary borings Dryers are specifically designed for drying metal chips and shavings. This technology plays a critical role in enhancing safety and efficiency in metal processing operations while reducing environmental impact and ensuring product quality.

#### The Challenge:

Metalworking operations face several critical challenges and risks when drying metal chips and shavings. For example, a common cause of industrial explosions often occurs due to the interaction between water/moisture and molten metal. These challenges include:

- **Explosion Hazard:** moisture-laden metal chips post a significant explosion risk, particularly when introduced into melting furnaces.
- **Contamination Issues:** Impurities contained in chips and shavings can compromise the integrity of the final product.
- **Corrosion Risk:** Metal chips are highly susceptible to oxidation, which can result in metal loss during the melting process
- **Health and Environment:** Improper handling and drying can result in respiratory issues, and environmental contamination.

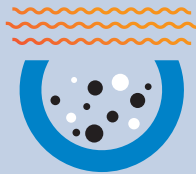
## The Solution:

EnviroAir Rotary Borings Dryers are highly effective for processing bulk solids such as chips, borings and drill cuttings. They are often used in metal working facilities to help manage the risks associated with drying metal chips. The dryers are extremely customizable, allowing operators to tailor the system to their specific material and process goals. They offer a high drying capacity as well as efficiency and can handle large volumes of materials, with throughput ranging from 5 cubic feet per hour to over 300 cubic feet of chips per hour.

### THE PROCESS



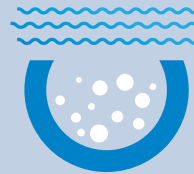
After feeding into a rotary retort, exhaust gases, smoke and dust particles are collected in the smoke hood and then discharged to the air quality control system



Chips are heated from 800 to 900°F inside the rotary retort evaporating the water and oil on the chips



Gas-fired burners heat the retort from the outside. This indirect heat prevents flame impingement on the chips that could cause surface oxidation



Bone-dry chips exit the rotary retort and enter the rotary cooling section where the chips are cooled

## Advantages:

EnviroAir's Rotary Borings Dryers are ideal for industrial scale production of dried borings. Due to their design and operation, they provide an exceptional level of drying efficiency.



Indirectly heated—no flame impingement on chips—prevents surface oxidation of metal chips



Efficient drying and de-oiling of metal chips



Improved safety in remelting operations



Reduced contamination in recycled materials



Large process volumes

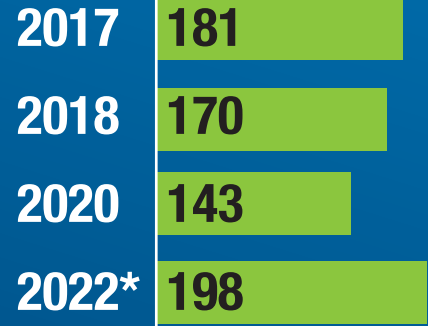


Long-term reliability, Minimal maintenance

To learn more about EnviroAir industrial rotary dryer solutions, and other air pollutions control system for your business, contact Dean Lesch, 262.594.5891, Ext. 105 – [dlesch@enviroair.net](mailto:dlesch@enviroair.net)

# WATER/ALUMINUM CHEMICAL EXPLOSIONS

Source: Aluminum Association



Chemical reactions involving aluminum and water are the industry's worst nightmare. These types of explosions can destroy a plant as well as injure and kill workers.

Rotary borings dryers offer a more reliable, efficient, and thorough method of reducing molten metal explosion risks compared to many alternative approaches. By incorporating rotary borings dryers into plant operations, foundries can significantly reduce the risk of molten metal explosions, creating a safer work environment and improving overall process efficiency.