

# Foundry & Metal Casting Safety

## Overview Of Metal Casting Safety

The internet is filled with a lot of useful information pertaining to metal casting, but it is also filled, with a lot of unsafe information. Your safety is of the utmost importance to Porta-Melt, and to help ensure your safety, we provide these metal casting safety tips.

## Key Aspects Of Metal Casting Safety

- Always wear the proper protective gear for metal casting.
- Know the hazards of the metal that you will be working with.
- Make your work environment as safe as possible.
- Become well acquainted with the metal casting process, materials, and tools, before starting a project.
- Always inspect a crucible for defects, before each use.
- Always preheat your casting material and tools.
- Become familiar with and always follow OSHA guidelines when casting any metal.

## Minimal Protective Gear For Metal Casting

This is a difficult topic to discuss, because each metal is different and each has a different melting temperature, therefore no solution fits all requirements. Please review OSHA safety regulations governing metal casting, for more detailed information. When working with metals that have a low melting temperature, Porta-Melt recommends the following gear as a bare minimum (once again, please refer to OSHA regulations pertaining to the process being performed, the material being used, and the melting temperature):

- Full face shield to protect your eyes, face, neck, and head.
- Leather jacket, bib, overalls, apron, etc..., to protect the chest, torso, and legs.
- Leather gloves to protect the hands.
- Leather leggings to protect your legs.
- Leather spats to protect your feet.

## A Safe Metal Casting Environment

Accidents do happen, but that doesn't necessarily mean that they have to result in bodily injury or death. One way to help ensure your safety and the safety of others, is to maintain a safe metal casting environment.

- Keep the metal casting area free from explosives, flammables, and other liquids.
- Keep the metal casting area free from children, pets, and unprotected individuals.
- Perform metal casting work on substantially level ground, preferably dry sand.
- Remove all tripping hazards from the metal casting area.
- Ensure that all walkways are wide and clear.

- Provide an obstacle free, safety zone, with enough room to escape from hazards.

## **Additional Safety Information Concerning The Casting Of Aluminum**

Our main area of research is the casting of aluminum. When casting aluminum, moisture must be avoided!

Several powerful explosions have occurred, due to the presence of just a little water. To help ensure your safety and the safety of others, you should always preheat any metal going into the crucible to remove any moisture, such as ingots or scrap. Additionally, you should also preheat foundry tools, such as stirring rods and dross skimmers.

## **External Sources Pertaining To Foundry Safety**

The American Foundry Society has published a fourth edition of "Personal Protective Equipment Guide For Metal Casting Operations". This (PDF) booklet contains 54 pages of useful information, pertaining to the selection and use of personal protective equipment, for the metal casting industry, and it is essential information, for anyone seriously involved with metal casting.

This (PDF) booklet can be found here: [https://hub.afsinc.org/apex/nc\\_\\_Product?id=a2Z1a000000ACoyEAG](https://hub.afsinc.org/apex/nc__Product?id=a2Z1a000000ACoyEAG)