

Personal Protective Equipment

## Which Gloves to Wear When Working With Certain Metals

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Do certain metals require different gloves than others? Simply put, the answer is not exactly. Holding a piece of steel, a piece of aluminum, and a piece of lead in your hand all have the same level of danger. The main exception to this is when the metal is rusted, which we will discuss later.

For the most part, the danger in working with metals is not in which metals are being used, but in how they are being used. Here are some scenarios:

- Heavy loads of metals? You will see sprains and strains from improper lifting techniques. Plus, you can easily get cut if the metal is jagged or sharp.
- Bulky, awkward loads of metals? You are more likely to drop something on your feet or bang your *hands*.
- Cutting, stamping, or welding metals? There are all kinds of opportunities for cuts and burns.

So while no metal is inherently more dangerous than any other, it is important to use metal types in a broader context.

Below are some guidelines for choosing the right gloves for working with different types of metals in different ways.

### General Descriptions of Different Metals

Here is an overview of some of the most common types of metals:

- **Aluminum** – It is known for being corrosion-resistant, flexible, and lightweight. This metal is also very easy to machine, meaning you can shape many things with it. Check out our page devoted to working with *aluminum*.
- **Carbon Steel** – This is steel in which carbon is the main alloying element. Carbon steel is affordable, durable and versatile.
- **Copper** - Copper is a metal known for being soft, malleable, and ductile. You will find this used in bathtubs and sink fixtures.
- **Iron** – It is strong and inexpensive, as well as the most used metal on the planet. Be sure to check out our primary metals industry page on *iron*.
- **Stainless Steel** – This is an alloy made of iron and carbon that does not rust, so industries needing non-corrosive metals are likely purchasers of this metal. *Fabricated structural metal* is where you will find a lot of this, along with many welders needing welding gear.

Now that we have covered the main types of metals, let us dive into the different categories and corresponding recommended gloves.

### Highly Conductive Metals

Copper and aluminum conduct energy very well, which means they heat up very quickly. If you are working with metals near heat sources, you will want a glove that offers thermal protection to avoid burns. **DuPont™ Kevlar®** is an excellent material for thermal protection and we offer a number of

gloves made with it.

## Sheet Metals

Many metals can be processed into sheets, including steel, aluminum, brass, and others. What makes sheet metal challenging is its sharp edges, which require wearing excellent cut protection gloves. The ANSI (American National Standards Institute) score is used to determine the level of cut protection a glove provides. For a more in-depth look at how to choose gloves with cut protection, see *our handy guide on cut resistant materials*.

## Metals That Melt

Any metal will melt at some point. *Gallium will melt* from the warmth of your hands, while tungsten melts at 6192°F. A worker will not be concerned with either extreme, only that they are wearing proper safety gear.

You will definitely need safety gear when deliberately melting metal. This is especially true when working around molten metal, which has been heated into a liquid.



Face shields and heavy leather are must haves when working around molten metal.

For soldering, there are *dozens of solder alloys* and it is not worth covering all of them here, but any drop of solder can leave a burn on your hand. Since soldering often requires very fine manipulation and the temperatures are relatively low, many people choose not to wear gloves for this kind of work. No matter your choice, we always recommend having a lightweight **DuPont™ Kevlar® glove nearby**.

Welding, on the other hand, can be extremely hazardous, no matter what metals are being used. The heat levels involved in welding can not only damage the skin, but they can burn away deeper tissue and leave your hands with permanent damage. Fortunately, there are *gloves designed specifically with welding protection in mind*.

One more thing to consider is that over 10 percent of all eye injuries are the result of welding.

## Rusted Metal

Rust is an iron oxide formed when iron and oxygen react in the presence of water or moisture in the air.

Workers that handle rusted metal need highly abrasive and cut resistant gloves. MCR's **N9676DT** gloves made with **Breathable Nitrile Foam** (BNF) offer high levels of abrasion and cut resistance.

## Metals Covered in Lubricants

When you cannot grasp metal or materials, accidents and injuries occur. Wearing gloves with a good grip is important when you need excellent control over slippery metals. There are also **a number of additional safety factors to consider** when working with and around industrial lubricants.

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