

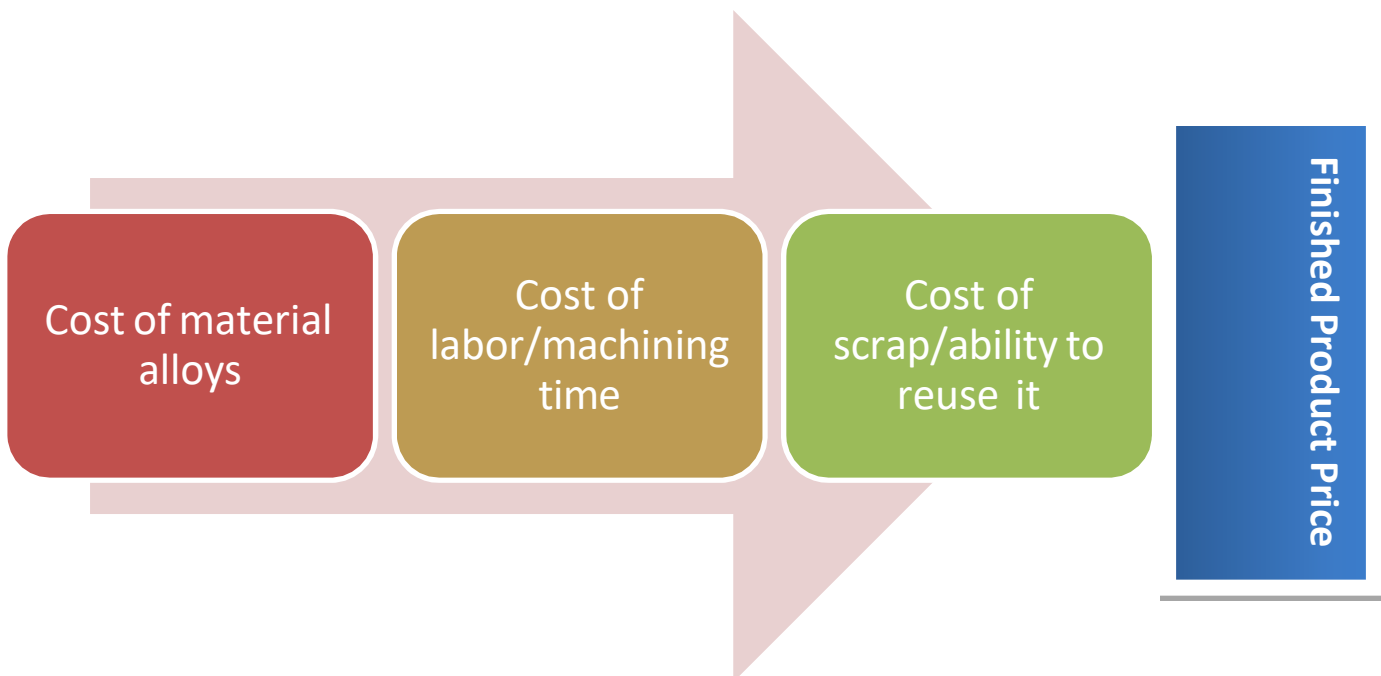


Lead Free Products

THE PRICING IMPLICATIONS

The United States Federal Government is making it illegal to install brass and bronze products that contain more than 0.25% lead in drinking water applications after January 4, 2014. Prices for certain products like red brass pipe and nipples and wrought copper fittings will remain stable since they don't contain lead and already meet the new federal metal content requirements. But the "Reduction of Lead in Drinking Water Act," increases the alloy and production costs for manufacturers of "no lead" brass and bronze valves and fittings. Depending on the specific item, the price differential between finished products that contain lead and those considered "lead free" ranges between 25% and 50%.

The factors listed below are driving the substantial cost increases of "lead free" products against their current "leaded" counterparts.

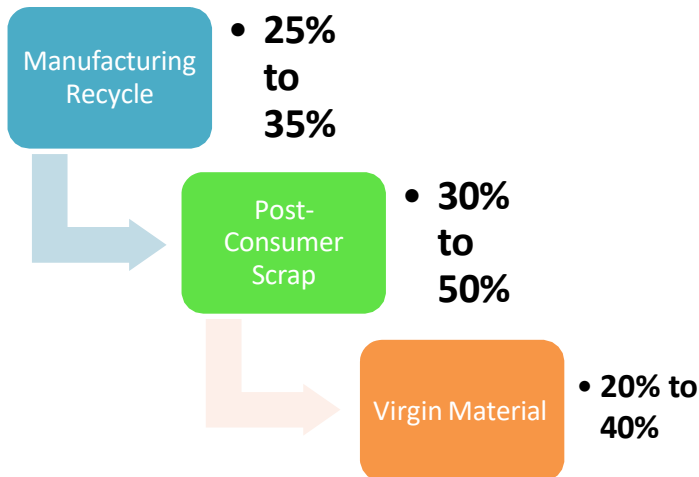


Cost of Material Alloys – Brass and Bronze

STANDARD BRASS AND BRONZE MATERIALS

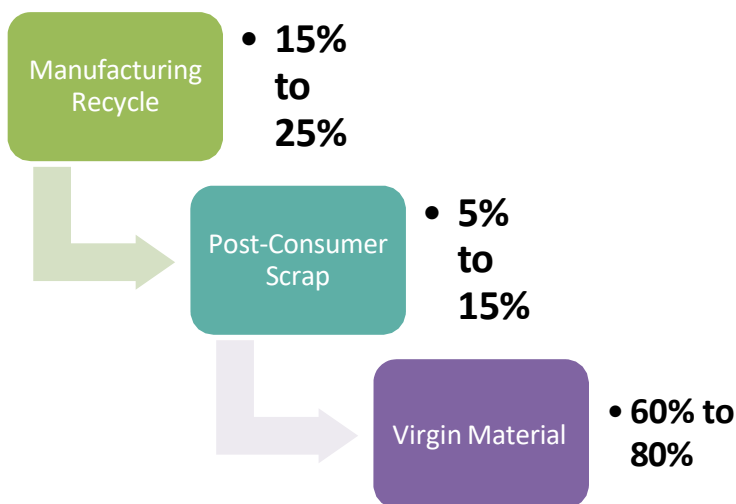
There are 3 material sources when ingots are cast or rods are formed with **standard** brass and bronze materials:

- Manufacturing recycle (scrap)
- Post-consumer scrap (least expensive)
- Virgin material



LEAD FREE/NO LEAD BRASS AND BRONZE MATERIALS

To prevent contamination from standard brass process chips containing lead, the manufacturing chip material (scrap from machining or cutting) must be isolated and handled separately. The limitations on the manufacturing chip material occurs because there is no current process known to remove lead from brass or bronze alloys which means that manufacturing recycle and post-consumer scrap cannot be used. This also eliminates all but pure copper sources such as copper wire and copper pipe, for post-consumer scrap. No other brass/bronze sources may be used.



In making “no lead/lead free” brass and bronze ingots or rods, two to three times as much virgin material is used versus recycled and scrap material. Of the three materials, virgin material is the most expensive; therefore, it is typical for the alloy costs to the manufacturer to **increase by 25% - 45%**.

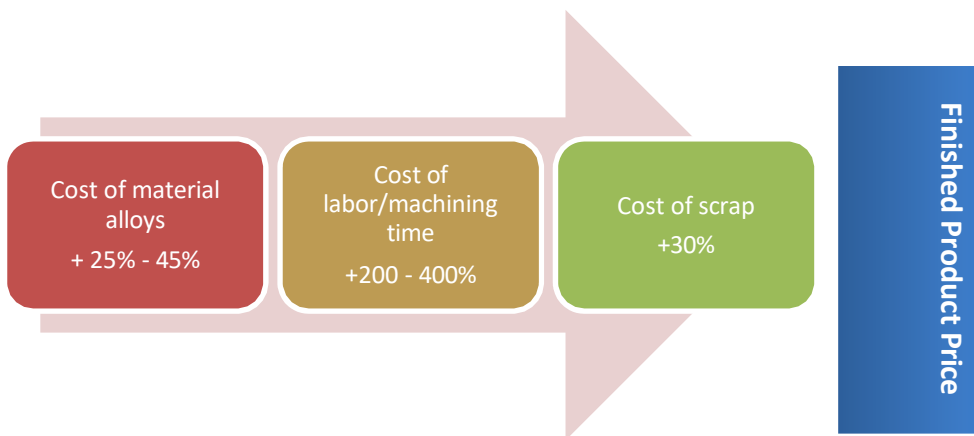
Cost of Labor/Machining Time

Decades ago, lead was introduced to brass and bronze alloys to aid in manufacturing; lead has served as the “glue” in castings, economically and effectively filling cavities of porosity. It has also significantly enhanced the machinability. Currently, over 90% of brasses and bronzes contain lead. When “no lead” brass and bronze alloys are used, the manufacturing and production costs rise dramatically.

The absence of lead in the alloy forces manufacturers to change out tooling 2 to 3 times as often due to wear, despite the fact that the machines are run one-quarter to one-half the standard speed. To illustrate this, imagine a manufacturing facility where **100 parts in an hour** are threaded **for standard** brass or bronze products, but now is only able to produce **25 to 50 parts** in that same hour **for lead free/no lead** brass or bronze products. As a result, machining costs **double or quadruple (200% - 400%)**.

Cost of Scrap

Based on the adoption of a “recycle” program, the price paid for brass and bronze alloys was discounted by 30% - 40% for decades. The initial purchase price was reduced based on the typical material return rate as long as all the manufacturing recycled material was returned to the material supplier after the manufacturing process. Today, manufacturers are forced to pay full price for the more expensive “no lead” materials because most suppliers are not offering a “no lead” brass/bronze alloy buy-back program. This results in **increased costs** to manufacturers of **approximately 30%**.



Due to the above 3 factors (cost of: material alloys, labor/machining time and scrap), the “no lead/lead free” brass/bronze alloy valves and fitting range from 25% to 50% higher in price as compared to the standard “leaded” products. In addition to our lines of domestic and import “lead free” brass threaded fittings, we will continue to stock a complete offering of “leaded” standard brass (125lb. and 250lb.), brass bar stock and chrome-plated threaded fittings for non-potable water applications. For more information, please contact us at 800.726.9800 or complete our [contact form](#) for specific questions you may have regarding Merit Brass products.