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A Look Into The Process, Structure, Properties, and Performance of Inconel 690

Reed McNeal

Mississippi State University, ram788@msstate.edu

Patrick Camacho

Mississippi State University, Psc112@msstate.edu

Haley Petersen

Mississippi State University, hep171@msstate.edu

Mary Watson

Mississippi State University, mw2525@msstate.edu

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WHAT IS INCONEL 690?

Inconel 690 is a Nickel based alloy that has properties that are great for high temperature as well as high corrosion resistance

1. NEW GENERATION ALLOY

- Nuclear power generation is an excellent example of the conditions suited for the use of Inconel 690. Conditions of nuclear power can reach temperatures over 650°F and pressures over 2230psi. Such conditions also impose a stressful and corrosive environment. Inconel 690 has shown to noticeably outperform other alloys in such extreme conditions.

2. PROPERTIES

- Holds strength and durability in high temperatures
- Corrosion resistant even in super corrosive environments
- Resistance to stress corrosion cracking

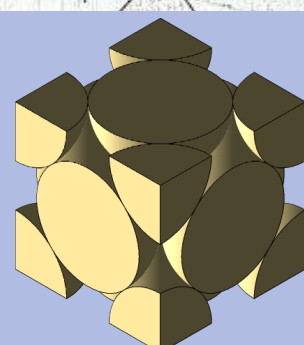
[HTTPS://THEUNPROJECT.COM/TERM/CORROSIVE/3326458/](https://thenounproject.com/term/corrosive/3326458/)



3. STRUCTURE

- Has Face Center Cubic structure on the atomic level
- Inconel 690 has a more favorable structure compared to other Inconel alloys

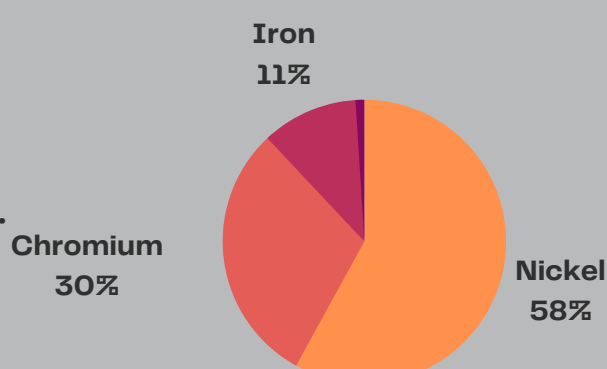
[HTTPS://GRABCAD.COM/LIBRARY/FCC-CRYSTAL-STRUCTURE-1](https://grabcad.com/library/fcc-crystal-structure-1)



Face Center Cubic (FCC)
Unit Cell

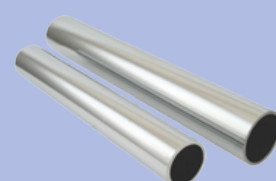
4. PROCESS

- 99% of the composition is nickel, chromium, and iron. While the remaining 1% is made of carbon, silicon, manganese, sulfur and copper



NEAT FACTS:

- The name Inconel 690 is trademarked by the group Special Metals Corporation
- Inconel 690 is being used in 3D printing



[HTTPS://WWW.JAIMANMETALLOYS.COM/INCONEL-690-PIPES-TUBES-SUPPLIER-STOCKIST-EXPORTER/](https://www.jaimanmetalloys.com/inconel-690-pipes-tubes-supplier-stockist-exporter/)

Haley Petersen, Mary Watson, Patrick Camacho, Reed McNeal