

WHY -196°C IS SO IMPORTANT

Today's rapidly advancing technological world requires high tech alloys to meet the demands of these newer complex applications. Some of the older alloys such as ASTM F15 Alloy (Kovar), has stood the test of time and is still widely used in both old and new technologies.

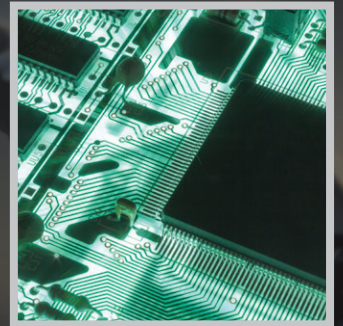
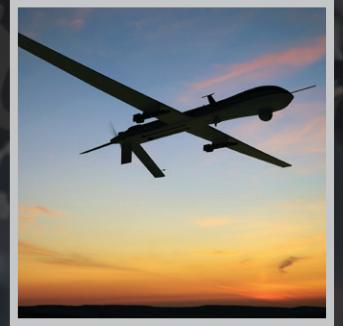
The AMS I 23011 and ASTM F15 are the standards that define the parameters of testing for ASTM F15 alloy. Coefficient of Thermal Expansion and Phase Transformation are two important characteristics that are tested under these standards. The Coefficient of Thermal Expansion defines the rate of expansion for a specific material in a range of temperatures. Phase Transformation, on the other hand, involves monitoring changes in the metal's microstructure that can occur due to exposure to a wide range of temperatures. This is a key factor in establishing a highly stable alloy. "No Phase Transformation" @ -78.5°C and -80°C are the current minimal parameters set in these standards.

NEA has privately researched and defined an extension to far exceed these parameters, certifying our ASTM F15 Alloy to allow "No Phase Transformation" down to -196°C .

So why does it matter?

-196°C is the temperature of liquid nitrogen and what is used in this extended testing. This extreme temperature mimics the colder temperatures in space making it useful in testing for Aerospace engineering and design. Material that meets these extended parameters provides a more stable material and, therefore, a more stable and reliable part.

Understanding today's needs for Controlled and Low Expansion Alloys and striving to achieve the maximum capability will continue to prove the value of these time-tested Alloys.



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NATIONAL ELECTRONIC ALLOYS
www.nealloys.com

EAST COAST

3 Fir Court, Oakland, NJ 07436
201-337-9400 • Fax: 201-337-9698
Toll Free: 800-524-4309
Email: Sales@nealloys.com

WEST COAST

1847 W. Business Center Dr., Orange, CA 92867
714-556-5561 • Fax: 714-556-5562
Toll Free: 877-632-9378
Email: Sales@nealloyswest.com