

RA 602 CA® Surpasses Three Years of Service in Vacuum Brazing Operation



Specifications

UNS: N06025 W. Nr./EN: 2.4633 ASTM: B 168, B 166 ASME: SB-168, SB-166, Code Case 2359

Chemical Composition, %

	Cr	Ni	Cu	P	S	Fe	C	Al	Ti	Y	Zr	Si	Mn
MIN	24.0	—	—	—	—	8.0	0.15	1.8	0.1	0.05	0.01	—	—
MAX	26.0	Balance	0.1	0.02	0.01	11.0	0.25	2.4	0.2	0.12	0.1	0.5	0.15

Case History

RA 602 CA alloy serpentine trays have now been in service over three years. These trays are used for copper brazing stainless steel heat exchangers at a southeastern Michigan company. Several trays made from RA 602 CA alloy are being used measuring from 36" x 48" (125 pounds) and 36" x 72" (180 pounds). Each tray holds between 600 and 630 pound loads during each cycle to 2045°F.

RA 602 CA has been successfully used as an upgrade to 600 in several vacuum furnace applications. RA 602 CA possesses properties which make it an excellent choice for vacuum furnace brazing and annealing operations. RA 602 CA offers significantly higher strength than 600. The table at right compares the 10,000 hour stress to rupture properties of alloy 600 and RA 602 CA. At 1800°F, RA 602 CA offers more than three times the strength of alloy 600.

10,000 hour Rupture Strength, psi

Temperature, °F	1400	1600	1800	2000	2200
600	6200	2350	450	—	—
RA 602 CA	11300	3200	1490	670	270

Case History, Continued

RA 602 CA has excellent resistance to grain growth. As a result, RA 602 CA fixtures retain their original properties better than 600 and provide more opportunity for straightening and repair welding. After three years in service, the tray pictured on the following page, was sent back to the fabricator for straightening and was then returned to service.

RA 602 CA is lower in density than 600 and molybdenum. As a result, each cycle requires less energy to bring the fixture up to heat along with the workload. This can improve cycle times and energy efficiency. Although RA 602 CA is more expensive per pound than 600 this 7% weight savings helps to reduce the price in relation to an equivalent fixture made of alloy 600.

RA 602 CA alloy is a 62Ni-25Cr-2.2Al-Y-Zr-Ti alloy. It is stocked by Rolled Alloys in plate, sheet, and welding consumables. A full data sheet (Bulleting 1602) on RA 602 CA is available by request from Rolled Alloys or can be downloaded at www.RolledAlloys.com

Alloy	Density, lb/in ³	Comparative Fixture Weight, lbs (36 x 48)	Comparative Fixture Weight, lbs (36 x 72)
RA 602 CA	0.285	125	180
600	0.306	134	193
Molybdenum	0.370	162	234



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