

FEDERATED No. 2 BEARING ALLOY

NOMINAL COMPOSITION

Tin.....89.0%
Antimony..... 7.5%
Copper..... 3.5%

MANUFACTURING LIMITS

Tin.....88.0 –90.0%
Antimony..... 6.75– 8.25%
Copper..... 3.0 – 4.0%
Lead..... 0.35% Max.
Iron..... 0.08% Max.
Arsenic..... 0.10% Max.
Zinc..... None*
Aluminum..... None*

Small amounts of Nickel and Tellurium may be added.

* Defined as 0.005% as determined on a 10 gram sample.

PROPERTIES

Solidus Temperature..... 241°C. 466°F.
Liquidus Temperature..... 354°C. 669°F.
Approx. Pouring Temperature... 425–510°C. 800–950°F.
Specific Gravity..... 7.39
Weight per cubic inch... 0.267 lbs.

BRINELL HARDNESS (B.H.N.)

Tested with a 10 mm. ball and a 500 kg. load applied for 30 sec.

As Cast	At 86°F.		At 302°F.		
	After 7 days at 302°F.	After 46 days at 302°F.	After 17 hours at 302°F.	After 7 days at 302°F.	After 46 days at 302°F.
24	22	19.5	9.3	9.2	8.2

TENSILE STRENGTH (in Psi.)

ELONGATION (in 2" in percent)

At	77°F.	212°F.	302°F.	392°F.
T. S.	10,900	5,900	3,400	1,700
E.	8	27	33	50

COMPRESSIVE STRENGTH

At room temperature at 10% reduction in height under load... 13,625 psi.

FATIGUE STRENGTH, Rotating Beam Test

20,000,000 cycles at 2000 cycles per minute..... 3,400 psi.

This alloy is similar to the following specifications:

A.S.T.M. B 23-26 Grade 2

U. S. Navy Dept. Spec. 46M2 Grade 2

Federal Spec. QQM161 Grade 2

SAE 110