ALUMINUM-COPPER 208.0

ANSI AA NUMBER	208.0		
Common Name (Not recommended)			
UNS Designation	A02080		
COMPOSITION PERCENT	**Min**		**Max**
Silicon (Si)	2.5		3.5
Iron (Fe)			1.2
Copper (Cu)	3.5		4.5
Manganese (Mn)			0.5
Magnesium (Mg)			0.1
Chromium (Cr)			0.25
Nickel (Ni)	1.7		2.3
Zinc (Zn)			0.35
Titanium (Ti)			0.25
Tin (Sn)			
Beryllium (Be)			
Silver (Ag)			
Other (Total)			0.5
NEAREST APPLICABLE CASTING STANDARDS			
ASTM (B Series)	B26		
AMS			
Federal (QQ-C- Series)	601e		
Military (Mil-C- Series)	21180c		
TYPICAL PROPERTIES	**F**		
Tensile Strength (ksi)	21		
Yield Strength (.5% extension under load) (ksi)	14		
Elongation (2 inch gauge length) (%)	2.5		
Compressive Yield Strength (ksi)	15		
Hardness (Brinell) (HB @ 500kg)	55		
Shear Strength (ksi)	17		
Endurance Limit (K ksi)	11		
Modulus of Elasticity (K ksi)			
Density (lb/cu.in. @ 68F)	0.101		
Electrical Conductivity (% IACS @ 68F)	31		
Thermal Conductivity (cal/sec/sq cm/cm/C @ 25C)	0.3		
Coefficient of Thermal Expansion (per F @ 68-212F)	12.4		
Coefficient of Thermal Expansion (per F @ 68-572F)	13.4		
Melting Range (Liquidus-Solidus)(F)	970-1160		
Resistance to Hot Cracking	VG		
Pressure Tightness	VG		
Fluidity	VG		
Solidification Shrinkage Tendency	VG		
Strength at Elevated Temperatures	G		
Corrosion Resistance	F		
Machinability	G		
Polishing	G		
Gas Welding	E		
Arc Welding	E		
Brazing	No		
Normally Heat Treated	No		
Annodizing Appearance	Gray Brown		
Electroplating	VG		

Applications: 208.0: Valve bodies, manifolds and other pressure castings.

Always use the design principles outlined on page two of this information sheet or at our website.
Consult your foundry early in the design process.
St. Paul Brass and Aluminum does not currently pour this alloy, but will consider it if purchased volumes justify the inventory.

St. Paul
Brass and Aluminum
Foundry
954 Minnehaha Ave West, St. Paul, MN 55104 (651) 488-5567 Fax: (651) 488-0908 www.spba.net sales@spba.net

Use Good Design Principles

1. St. Paul Brass and Aluminum Foundry is providing this information on metal characteristics for informational purposes only. Before making a final decision on alloy selection consider the following and all other appropriate design and specification principles. Please note that this is not an exhaustive list.
2. Consult the appropriate specification from an accredited specifying body (ASTM, SAE, Federal or Military) to determine current minimum values of this alloy.
3. Use appropriate design safety factors.
4. Use Failure Modes and Effects Analysis to help identify possible weaknesses in designs and specifications.
5. Use computerized stress analysis tools.
6. Use appropriate certification requirements for your casting suppliers. These may include test bars, chemical certifications, radiography, dye penetrant or other non-destructive testing methods.
7. Test your design to failure in a controlled environment. Then test it to failure in a simulation of its end use.
8. You and you alone are responsible for the suitability of your design and the materials that you select.
9. **Disclaimer.** While every effort is made by St. Paul Brass and Aluminum Foundry (SPBAF) to ensure accuracy, this information is provided for general information purposes only and not for any other purpose. By accessing this information, you agree that it may be revised at any time, it is provided "as is" and without any express or implied warranty, that no warranty or representation is made about its content or suitability for any purpose, and that SPBAF expressly disclaims warranties of merchantability and fitness. You assume all risk and liability for any loss, damage, claim, or expense resulting from your review, use, or possession of this information.