

Metglas® Brazing Foil & Preforms

Components with rigid dimensional tolerances and high strength/stiffness-to-weight ratios are needed to handle the stresses inherent in aerospace applications. Metglas® Brazing Foil (MBF) from Metglas®, Inc. is produced as thin as 18 µm (0.7 mil) to satisfy these requirements. It gives consistently reliable and strong joints.

MBF Benefits

Unique foil form combined with outstanding ductility - MBF bends 180° without fracturing to comply with complex joint geometries to ease fixturing; ductile enough to be mechanically stamped and shaped to 3-D configurations.

Ease of automation - for enhanced manufacturing efficiency.

Consistent performance - a virtually reject-free brazing operation in one heating cycle.

Precise metering - eliminates waste and creates high quality joints.

Unlimited shelf life

Contaminant free - for prolonged brazing furnace life.

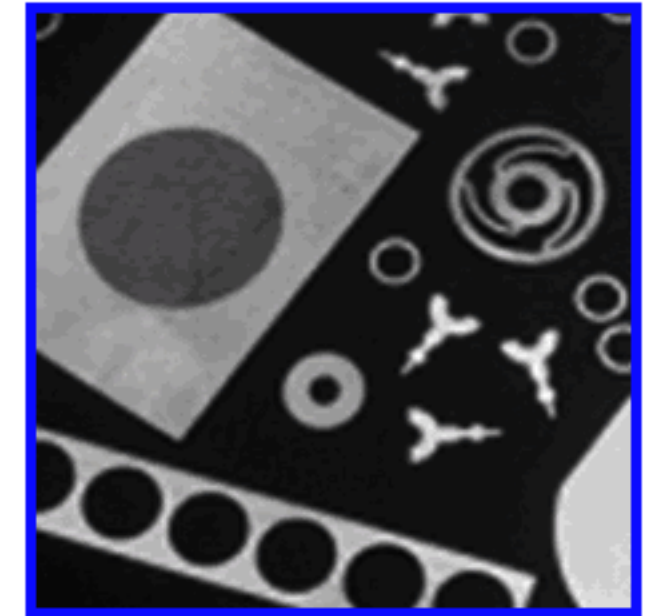
Fast melting and outstanding wetting and flow - for void free, optimum strength joints.

Wide range of products - covering melting temperatures from 830°C (1526°F) to 1160°C (2120°F).

Wide range of widths - for easy brazing of small and large areas.

Range of thicknesses available - for optimized joint gaps, including very thin foil, 18-20 µm (0.7-0.8 mil) for decreased erosion of base metal.

MBF provides extensive manufacturing and performance advantages over conventional metal joining methods.



Advantages of brazing with MBF

vs. Mechanically-fastened joints

MBF provides higher strength, leak tightness, and superior resistance to shock and vibration. Lighter gauge base metals may be used for substantial weight savings since MBF provides continuous, uniform joints.

vs. Adhesive bonding and soldering

MBF offers superior strength, flexibility and temperature resistance.

vs. Welding

MBF provides much higher processing efficiency. The lower melting temperature of MBF eliminates melting of base metals. No cleaning or finishing is required.

vs. Powder, paste and tape forms of brazing

MBF contains no organic binders, thus eliminating contaminating residues and reducing furnace cycle times. Completely homogeneous, 100% metal MBF alloy optimizes brazed joint formation and performance. Reliable melting and flow reduces rework and rejects too.

MBF Alloy	AWS & AMS Classifications	Nominal Composition, wt. %									Melting Temp. °C (°F)		Braze Temp. (Approx.) °C (°F)	Density g/cm ³ (lbm/in ³)
		Cr	Fe	Si	C*	B	P	W	Co	Ni	Solidus	Liquidus		
15		13	4.2	4.5	0.03	2.8			1.0*	Bal	965(1769)	1103(2017)	1135(2075)	7.82(0.283)
20	AWS BNi2/AMS 4777	7.0	3.0	4.5	0.06	3.2				Bal	969(1776)	1024(1875)	1055(1931)	7.88(0.285)
30	AWS BNi3/AMS 4778			4.5	0.06	3.2				Bal	984(1803)	1054(1929)	1085(1985)	8.07(0.291)
50	AWS BNi-5a	19		7.3	0.08	1.5				Bal	1052(1924)	1144(2091)	1170(2138)	7.70(0.278)
51	AWS BNi-5b	15		7.3	0.06	1.4				Bal	1030(1886)	1126(2058)	1195(2183)	7.73(0.278)
55		5.3		7.3	0.08	1.4				Bal	950(1742)	1040(1904)	1070(1958)	7.72(0.279)
60	AWS BNi6				0.10		11			Bal	883(1621)	921(1688)	950(1742)	8.14(0.294)
80		15			0.06	4				Bal	1048(1918)	1091(1996)	1120(2045)	7.94(0.278)

Foils are available with more rigid dimensional tolerances as specialty or "A" grades

* Maximum concentration

