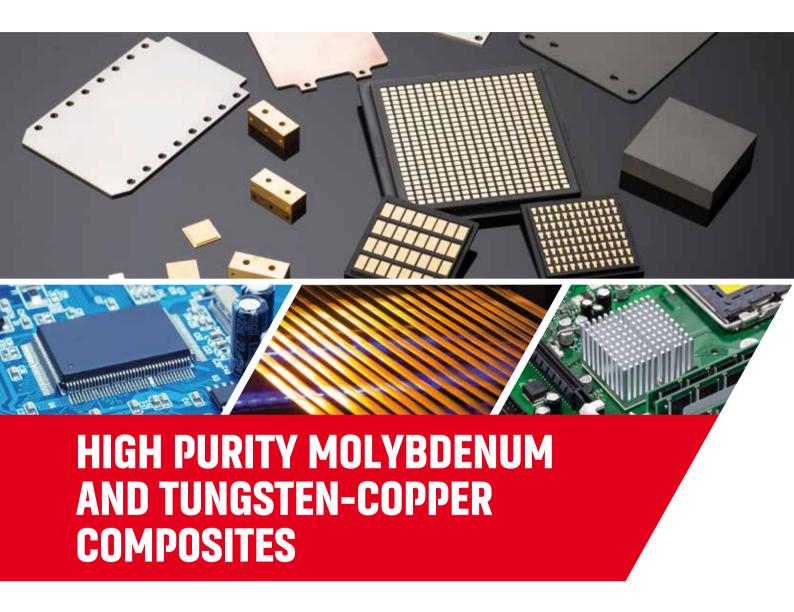
WALLINGFORD / AMETEK®



Molybdenum-Copper and Tungsten-Copper composites -

developed by AMETEK Specialty Metal Products using its wrought powder metallurgy technology, has unique properties for use in heat sinks, substrates, thermal spreaders and electronic packages.



PROPERTIES AND BENEFITS

This series of composites – **Molybdenum-Copper** and **Tungsten-Copper** – developed by AMETEK using its wrought powder metallurgy technology, has unique properties for use in: heat sinks, substrates, and thermal spreaders.

SPECIFICATIONS AND APPLICATIONS

The material is available as finished parts with the following maximum dimensions depending on overall size:

Width:	4 inches	(102 mm)
Thickness:	3 inches	(76 mm)
Length:	24 inches	(610 mm)

MOLYBDENUM-COPPER COMPOSITES (AMC SERIES)

COMPOSITIONS			
AMC 6040	60% molybdenum - 40% copper		
AMC 6535	65% molybdenum - 35% copper		
AMC 7525	75% molybdenum - 25% copper		
AMC 8020	80% molybdenum - 20% copper		
AMC 8515	85% molybdenum - 15% copper		

Other compositions can be produced upon request

DENSITY		
	g/cm³	lb./in.³
AMC 6040	9.68	0.349
AMC 6535	9.74	0.352
AMC 7525	9.87	0.356
AMC 8020	9.94	0.359
AMC 8515	10.01	0.361

THERMAL CONDUCTIVITY			
	W/mK³	BTU/hr. ft.°F	
AMC 6040	215	125	
AMC 6535	205	119	
AMC 7525	185	108	
AMC 8020	175	102	
AMC 8515	165	96	

THERMAL EXPANSION (in./in. x 10-6/°C)			
	30-150° C	30-400° C	30-800° C
AMC 6040	9.5	10.2	10.5
AMC 6535	9.0	9.4	9.8
AMC 7525	7.8	8.0	8.4
AMC 8020	7.2	7.5	7.9
AMC 8515	6.8	7.0	7.4

ADVANCED THERMAL MANAGEMENT PRODUCTS



These composites of molybdenum-copper and tungsten-copper have many applications in electronic devices. The excellent thermal conductivity and low thermal expansion makes them ideal for:

- · Chip mounting
- Heat sinks
- Circuit board cores
- Lids or covers
- Thermal spreaders
- Electronic packages

The material can be machined into shapes and readily plated if required.

AMETEK's wrought powder metallurgy composites have superior through-thick-ness thermal conductivity versus other products.

TUNGSTEN-COPPER COMPOSITES (AWC SERIES)

COMPOSITIONS			
AWC 7525	75% tungsten - 25% copper		
AWC 8020	80% tungsten - 20% copper		
AWC 8515	85% tungsten - 15% copper		
AWC 8812	88% tungsten - 12% copper		
AWC 9010	90% tungsten - 10% copper		

Other compositions can be produced upon request

DENSITY		
	g/cm³	lb./in. ³
AWC 7525	14.98	0.541
AWC 8020	15.68	0.567
AWC 8515	16.45	0.594
AWC 8812	16.95	0.612
AWC 9010	17.3	0.625

THERMAL CONDUCTIVITY			
	W/mK³	BTU/hr. ft.°F	
AWC 7525	186	107	
AWC 8020	175	101	
AWC 8515	162	93	
AWC 8812	155	90	
AWC 9010	150	86	

THERMAL EXPANSION (in./in. x 10 ⁻⁶ /°C)			
	30-150° C	30-400° C	30-800° C
AWC 7525	9.06	9.55	9.68
AWC 8020	8.21	8.60	8.63
AWC 8515	7.36	7.65	7.58
AWC 8812	6.78	7.00	6.86
AWC 9010	6.51	6.70	6.53

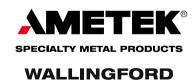
ADVANCED THERMAL MANAGEMENT PRODUCTS



WE ARE KNOWN FOR HIGH-TECH MATERIALS

AMETEK Specialty Metals Products (SMP) is a world leader in metal powders, high purity strip, ultra thin metal foil, specialty wire, metal matrix composites, engineered shaped components and clad metal products with numerous patents in technically advanced metallurgical materials.

AMETEK SMP manufactures or consolidates a variety of metal alloys including stainless steels, nickel-based alloys, cobalt-based alloys, titanium and titanium alloys and master alloys. For over 50 years, it has developed innovative, proprietary products tailored to specific customer applications.



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