

### UNIBRAZE<sup>®</sup> EM12K

Specifications: AWS A5.17

Classification: EM12K

**Description:**

UNIBRAZE EM12K is a low carbon, medium manganese, low silicon general purpose wire for submerged arc welding. It is a versatile, single or multi pass product suitable for joining a wide range of non-alloyed steels with a wide variety of fluxes. Use the UNIBRAZE EM12K wire with precaution when combined with high Manganese alloying fluxes. In certain applications the Mn content in the weld metal could reach critical levels, leading to hot cracking.

**Typical Chemistry Analysis**

C	Mn	Si	S	P	Cu
0.09	1.12	0.22	0.015	0.01	0.05

**Mechanical Properties**

Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.

Flux suitability is dependent on the application.

### UNIBRAZE<sup>®</sup> EM13K

Specifications: AWS A5.17

Classification: EM13K

**Description:**

UNIBRAZE EM12K is a low carbon, medium manganese, medium silicon wire that allows faster welding travel speeds, resistance to porosity, and improved mechanical properties. UNIBRAZE EM13K can be used in single and multiple-pass welding of non-alloyed and fine-grain steels, general fabrication, structural components, heavy equipment components, railcar frames, wheel fabrication, storage tanks, boilers, pressure vessels, ship panels, pipe double jointing, wind towers.

**Typical Chemistry Analysis**

C	Mn	Si	S	P	Cu
0.09	1.10	0.57	0.015	0.01	0.05

**Mechanical Properties**

Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.

Flux suitability is dependent on the application.

### UNIBRAZE<sup>®</sup> EB2

Specifications: AWS A5.23 / ASME SFA5.23

Classification: EB2

**Description:**

UNIBRAZE EB2 is a copper coated submerged arc wire recommended for welding 1¼Cr - ½Mo creep resistant steels. It is used in the chemical industry and in the ammonia synthesis process, for heat exchangers, boilers, piping and pressure vessels for temperature service up to 1100°F (550°C). UNIBRAZE EB2 is also used in the petro-chemical industry, and is suitable for facing on casting and for casting repairs.

Materials to be welded: A182 F11 & F12, A199 T11, A200 T11, A213 T11 & T12, A217 WC6 & WC11, A234 WP11 & WP12, A335 P11 & P12, and A387 Grade 11 & 12.

**Typical Chemistry Analysis**

C	Cr	Mo	Cu	Mn	Si
0.10	1.10	0.50	0.15	0.80	0.15
S	P				
0.01	0.01				

**Mechanical Properties**

Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.

Flux suitability is dependent on the application.



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### UNIBRAZE<sup>®</sup> EB3

Specifications: AWS A5.23 / ASME SFA5.23

Classification: EB3

**Description:**

UNIBRAZE EB3 is a copper coated submerged arc welding wire used for welding 2¼%Cr-1%Mo creep resistant steels. It is used in the chemical industry and in the ammonia synthesis process for heat exchangers, boilers, piping and pressure vessels for services temperatures up to 1110°F (600°C). UNIBRAZE EB3 is also used in petro-chemical applications and is suitable for facing on castings and casting repairs. Materials to be welded: A182 F22, A199 T21 & T22, A 200 T21 & T22, A213 T22, A217 WC9, A234 WP22, A335 P22, and A387 Grade 21 & 22.

Typical Chemistry Analysis					
C	Cr	Mo	Cu	Mn	Si
0.12	2.50	1.00	0.15	0.60	0.15
S	P				
0.01	0.01				

Mechanical Properties	
Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.	

Flux suitability is dependent on the application.

### UNIBRAZE<sup>®</sup> EB6

Specifications: AWS A5.23 / ASME SFA5.23

Classification: EB6

**Description:**

UNIBRAZE EB6 is a copper coated submerged arc welding wire used for welding 5½%Cr - ½%Mo high temperature creep resistant steels. UNIBRAZE EB6 is primarily used in the petro-chemical and refinery industries. It provides corrosion resistance against steam, hot hydrogen gas and high sulfur crude oils at service temperatures up to 1110°F (600°C). Materials to be welded: A182 Grade F5, A199 Grade T5, A213 Grade T5, A217 Grade C5, A234 Grade WP5, A335 Grade P5, A336 Grade F5, and A387 Grade 5.

Typical Chemistry Analysis					
C	Cr	Mo	Cu	Mn	Si
0.07	5.50	0.55	0.15	0.50	0.40
S	P				
0.01	0.01				

Mechanical Properties	
Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.	

Flux suitability is dependent on the application.

### UNIBRAZE<sup>®</sup> EB8

Specifications: AWS A5.23 / ASME SFA5.23

Classification: EB8

**Description:**

UNIBRAZE EB8 is a copper coated submerged arc welding wire used for welding 9%Cr - 1%Mo creep resistant, corrosion resistant steels. UNIBRAZE EB8 is primarily used in the power plants, chemical or petro-chemical industry and in the ammonia synthesis process. It is also used for heat exchangers, boilers, piping and pressure vessels for service temperatures up to 1110°F (600°C). Materials to be welded: A182 F9, A199 T9, A213 T9, A217 C12, A234 WP9, A335 Gr 9, and A387 Gr 9.

Typical Chemistry Analysis					
C	Cr	Mo	Cu	Mn	Si
0.07	9.00	1.00	0.15	0.50	0.20
S	P				
0.01	0.01				

Mechanical Properties	
Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.	

Flux suitability is dependent on the application.



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**UNIBRAZE® EB9**

Specifications: AWS A5.23 / ASME SFA5.23

Classification: EB9

**Description:**

UNIBRAZE EB9 is a non-copper coated submerged arc welding wire used for welding 9%Cr - 1%Mo creep resistant, corrosion resistant steels. UNIBRAZE EB9 is primarily used in the petro-chemical industry and for welding P91 and other 9% Cr steels. Long term creep properties are improved by the addition of Nb, V and N. The wire is designed for elevated service temperatures up to 1200°F (650°C). It is used for welding headers, steam piping and turbine casings in fossil fuel power plants.

Materials to be welded: A182 F91, A199 T91, A200 T91, A213 T91, A217 C12A, A234 WP91, A335 P91, A336 F91, A369 FP91, and A387 Gr 91.

**Typical Chemistry Analysis**

C	Cr	Mo	Cu	Mn	Si
0.10	8.80	0.95	0.04	0.60	0.20
S	P	Ni	V	Nb	N
0.003	0.005	0.60	0.20	0.06	0.045

**Mechanical Properties**

Typicals can not be provided as mechanical property results are based on wire/flux combinations and weld procedures as per AWS.

Flux suitability is dependent on the application.

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Data contained in this catalog are typical of the products described, but are not suitable for specifications.



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