

MT-CuSn

2.1006

Copper MIG/TIG wire for welding pure copper.

Standard designation

EN ISO 24373	S Cu 1898
Material No.	2.1006
AWS/ASME SFA-5.7	ER Cu

Main fields of application

Weldable copper grades, e.g. SE - Cu (2.0070), SW - Cu (2.0076), SF - Cu (2.0090), OF - Cu (2.0040)

Physical properties (typical values)

El. Conductivity at 20°C [S · m/mm ²]	Thermal conductivity at 20°C [W/(m · K)]	Linear thermal expansion coefficient [1/K]
15 - 20	120 - 145	18 · 10 ⁻⁶

Mechanical properties of all-weld-metal (typical values)

Welding process Gas shield Thermal treatment Test temperature	[°C]	TIG I1 untreated +20°C	MIG I1 untreated +20°C
0,2 %-yield strength R _{p0,2}	MPa	100	100
Tensile strength R _m	MPa	220	220
Elongation A ₅	[%]	30	30
Impact strength A _v	[J]	80	70
Brinell-hardness HB 10/1000		60	60

Average chemical composition of all-weld-metal (%)

Cu	Sn	Si	Mn
Bal.	0,8	0,3	0,3

Gas types applicable TIG Gas types applicable MIG

I 1
I 1

Diameters available, welding current, unit weights

Diameter [mm]	Length [mm]	kgs per box [kg]
1,60	1000	10,0
2,00	1000	10,0
2,40	1000	10,0
3,00	1000	10,0
4,00	1000	10,0

MIG welding wire

Diameter 1,0mm 1,2mm 1,6mm

Welding positions MIG acc.to EN ISO 6947

PA, PB, PF

Welding positions TIG acc.to EN ISO 6947

PA, PB, PC, PE, PF

Current/Polarity TIG

= -

Current/Polarity MIG

= +

MT-CuSi 3

2.1461

Copper silicon alloy MIG/TIG welding wire.

Standard designation

EN ISO 24373	S Cu 6560
Material No.	2.1461
AWS/ASME SFA-5.7	ER CuSi - A

Main fields of application

Copper, low-alloy copper and copper zinc alloys; build-up welds on mild and low-alloy steels and cast iron.

Physical properties (typical values)

El. conductivity at 20°C [S · m/mm ²]	Thermal conductivity at 20°C [W/(m · K)]	Linear thermal Expansions coefficient (+20°C-+300°C) [1/K]
3 - 4	35	$18 \cdot 10^{-6}$

Mechanical properties of all-weld-metal (typical values)

Welding process Gas shield Thermal treatment Test temperature		TIG I1 untreated +20°C	MIG I1 untreated +20°C
0,2 %-yield strength R _{p0,2}	[MPa]	120	120
Tensile strength R _m	[MPa]	350	350
Elongation A ₅	[%]	40	40
Impact strength A _v	[J]	60	60
Brinell-hardness HB 10/1000		80	80

Average chemical composition of all-weld-metal (%)

Cu	Si	Mn	Sn	Fe	Zn
Bal.	3	1	0,1	0,07	0,1

Gas types applicable TIG Gas types applicable MIG

I 1
I 1

Diameters available, welding current, unit weights

Diameter [mm]	Length [mm]	kgs per box [kg]
1,60	1000	10,0
2,00	1000	10,0
2,40	1000	10,0
3,00	1000	10,0
4,00	1000	10,0

MIG welding wire

Diameter 0,8mm 1,0mm 1,2mm 1,6mm

Welding positions MIG acc.to EN ISO 6947 Welding positions TIG acc.to EN ISO 6947

PA, PB, PF
PA, PB, PC, PE, PF

Current/Polarity TIG Current/Polarity MIG

= -
= +

MT-CuSn 6

2.1022

Copper tin MIG/TIG welding wire.

Standard designation

EN ISO 24373	S Cu 5180
Material No.	2.1022
AWS/ASME SFA-5.7	ER CuSn - A

Main fields of application

Copper tin alloys, e.g. bronzes containing 4-8%, copper tin alloys (brass), and copper tin zinc lead cast alloys; build-up welds on cast iron.

Physical properties (typical values)

El. conductivity at 20°C [S · m/mm ²]	Thermal conductivity at 20°C [W/(m · K)]	Linear thermal expansions coefficient (20-300°C) [1/K]
7 - 9	75	18 · 10 ⁻⁶

Mechanical properties of all-weld-metal (typical values)

Welding process Gas shield Thermal treatment Test temperature	[°C]	TIG I1 untreated +20°C	MIG I1 untreated +20°C
0,2 %-yield strength R _{p0,2}	MPa	150	140
Tensile strength R _m	MPa	260	300
Elongation A ₅	[%]	20	20
Brinell-hardness HB 10/1000		80	80

Average chemical composition of all-weld-metal (%)

Cu	Sn	P
Bal.	6	0,2

Gas types applicable TIG Gas types applicable MIG

I 1
I 1

Diameters available, welding current, unit weights

Diameter [mm]	Length [mm]	kgs per box [kg]
1,60	1000	10,0
2,00	1000	10,0
2,40	1000	10,0
3,00	1000	10,0

MIG welding wire

Diameter 0,8mm 1,0mm 1,2mm

Welding positions MIG acc.to EN ISO 6947 Welding positions TIG acc.to EN ISO 6947

PA, PB, PF
PA, PB, PC, PE, PF

Current/Polarity TIG

= -

Current/Polarity MIG

= +

MT- Zibro 6 T

2.1025

Special basic coated electrode for welding brass and tin bronzes. Tin bronze welding deposit containing 6% tin.

Standard designation

Material No.	2.1025
AWS/ASME SFA-5.6	E CuSn-A

Main fields of application

Welding copper tin alloys, e.g. bronze containing 4 – 8% Sn, copper zinc alloys (brass), and copper tin zinc cast alloys; surface welding on cast iron.

Physical properties (typical values)

El.conductivity at 20°C [S · m/mm ²]	Thermal conductivity at 20°C [W/(m · K)]	Linear thermal expansions coefficient (20-300°C) [1/K]
7	75	18,5 · 10 ⁻⁶

Mechanical properties of all-weld-metal (typical values)

Thermal treatment Test temperature	[°C]	untreated + 20°C
0,2 %-yield strength R _{p0,2}	MPa	180
Tensile strength R _m	MPa	295
Elongation A ₅	[%]	25
Brinell-hardness HB 10/1000		100

Average chemical composition of all-weld-metal (%)

Cu	Sn
Bal.	6

Redrying

1h at +200°C.

Diameters, welding current,

Unit weights

Diameter [mm]	Length [mm]	Current [A]	Average weight kg/1000 pcs.	Pieces per box	Kg per box
2,50	350	55 - 80	19,4	258	5,0
3,25	350	80 - 100	32,0	156	5,0
4,00	450	90 - 130	63,1	95	6,0

Welding positions acc.to EN ISO 6947

PA, PB, PC, PE, PF

Current/Polarity MIG

= +/~

CuSn 12

2.1027

MIG/TIG wire for welding tin bronzes, multi-alloy tin bronzes and cast red bronze. Tin bronze welding deposit containing 12% tin.

Standard designation

EN ISO 24373	S Cu 5410
Material No.	2.1056

Main fields of application

Copper tin alloys, e.g. bronze containing 10-12 % Sn, copper zinc alloys (brass), copper tin zinc lead cast alloys (red bronze: Rg5, Rg7); build-up welds on cast iron.

Physical properties (typical values)

El.conductivity at +20°C [S · m/mm ²]	Thermal conductivity at +20°C [W/(m · K)]	Linear thermal expansions coefficient (+20°C-+300°C) [1/K]
3 - 5	40 - 50	18.5 · 10 ⁻⁶

Mechanical properties of all-weld-metal (typical values)

Thermal treatment Test temperature	[°C]	untreated + 20°C
0,2 %-yield strength R _{p0,2}	MPa	200
Tensile strength R _m	MPa	350
Elongation A ₅	[%]	15
Brinell-hardness		120

Average chemical composition of all-weld-metal (%)

Cu	Sn
Bal.	12

Application notes

Preheating to +250°C is required for sections thicker than 6 mm.
TIG: When resurfacing iron materials, introduce as much filler rod as possible into the arc.
MIG: Pulsed arc welding is recommended for build-up welds on iron materials.

Gas types applicable TIG Gas types applicable MIG

I 1
I 1

Diameters available, welding current, unit weights

Diameter [mm]	Length [mm]	kgs per box [kg]
1,60	1000	10,0
2,00	1000	10,0
2,40	1000	10,0
3,00	1000	10,0
4,00	1000	10,0

MIG welding wire

Diameter 1,0mm 1,2mm

Welding positions MIG acc.to EN ISO 6947 Welding positions TIG acc.to EN ISO 6947

PA, PB, PF
PA, PB, PC, PE, PF

Current/Polarity TIG

= -

Current/Polarity MIG

= +