SAFRA

COPPER ALLOY FILLERS

MIG wire and TIG rods for brazing, joining, repair and wear-resistant surfacing.

MADE IN ITALY · EU MANUFACTURE



Choose By Application

Application or requirement	Safra grades / reference	Page
Galvanised steel brazing, copper welding and bronze repairs	SF-CuSi3, SF-CuSn, SF-CuSn6	02
Aluminium bronze joining and surfacing	SF-CuAl8, SF-CuAl9Fe	03
Marine castings, repair and wear-resistant overlays	SF-CuAl8Ni2, SF-CuAl8Ni6, SF-CuMn13Al7	04
TIG welding and arc brazing rods	Rod sizes and carton weights	05
Spools, drums and coils	Formats and dimensions	06
Pay-off, guides and drum accessories	Safra part numbers	07







How To Order

Give the Safra grade, process, wire or rod diameter, pack format and quantity. Include the parent alloy and any certificate or approval requirements. Each grade links to the manufacturer's datasheet.

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COPPER ALLOY GRADES

Copper & Bronze Joining

Identify whether the joint calls for MIG brazing, copper fusion welding or a tin-bronze repair.

SF-CuSi3 AWS ERCuSi-A · S Cu 6560 (CuSi3Mn1)



Silicon bronze for specified MIG brazing of galvanised steel and for joining compatible copper alloys. Also used for foundry repair and qualified bronze overlays on steel.

Rm 330–370 MPa · A 40% · 80–90 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	0.8, 0.9, 1.0, 1.2, 1.6, 2.0, 2.4	D300 / K300 / KS300 · 12.5 or 15 kg
TIG	1.6, 2.0, 2.4, 3.2, 4.0	1,000mm rods · 10 or 25 kg carton

Technical datasheet

SF-CuSn AWS ERCu · S Cu 1898A (CuSn1MnSi)



Deoxidised copper filler for MIG and TIG fusion welding of compatible copper. Specify the full grade and ISO number on the order to distinguish it from CuSn6.

Rm 210–245 MPa · 60–80 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	0.8, 0.9, 1.0, 1.2, 1.6, 2.0, 2.4	D300 / K300 / KS300 · 12.5 or 15 kg
TIG	1.6, 2.0, 2.4, 3.2, 4.0	1,000mm rods · 10 or 25 kg carton

Technical datasheet

SF-CuSn6 AWS ERCuSn-A · S Cu 5180A (CuSn6P)



Tin bronze for repair of compatible bronze castings and for wear surfaces where the deposit can work-harden. Suitable for specified MIG or TIG repairs.

Rm 320–360 MPa · A 25% · 80–90 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	0.8, 0.9, 1.0, 1.2, 1.6, 2.0, 2.4	D300 / K300 / KS300 · 12.5 or 15 kg
TIG	1.6, 2.0, 2.4, 3.2, 4.0	1,000mm rods · 10 or 25 kg carton

Technical datasheet

Typical deposit values from Safra. Rm = tensile strength, A = elongation, HB = Brinell hardness. Grade sheets specify I1 (argon).

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COPPER ALLOY GRADES

Aluminium Bronze

Match the aluminium bronze grade to the substrate and to the service conditions for joining or surfacing.

SF-CuAl8 AWS ERCuAl-A1 · S Cu 6100 (CuAl7)



Aluminium bronze for compatible copper alloys and for specified surfacing on steel, steel castings or nickel alloys. Typical work includes marine wear surfaces and foundry repair.

Rm 390–450 MPa · A 45% · 80–110 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	0.8, 0.9, 1.0, 1.2, 1.6, 2.0, 2.4	D300 / K300 / KS300 · 12.5 or 15 kg
TIG	1.6, 2.0, 2.4, 3.2, 4.0	1,000mm rods · 10 or 25 kg carton

Technical datasheet

SF-CuAl9Fe AWS ERCuAl-A2 · S Cu 6180 (CuAl10Fe)



Iron-bearing aluminium bronze for joining compatible bronze parts and surfacing components exposed to seawater. Confirm the exact grade for marine repair and overlays.

Rm 390–500 MPa · A 45% · 90–120 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	0.8, 0.9, 1.0, 1.2, 1.6, 2.0, 2.4	D300 / K300 / KS300 · 12.5 or 15 kg
TIG	1.6, 2.0, 2.4, 3.2, 4.0	1,000mm rods · 10 or 25 kg carton

Technical datasheet

Specify The Base Metal And Service

For overlays, include the substrate, finished deposit thickness and exposure to seawater, wear or erosion. For joining, identify both parent alloys and the governing procedure.

Typical deposit values from Safra. Rm = tensile strength, A = elongation, HB = Brinell hardness. Grade sheets specify I1 (argon).

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COPPER ALLOY GRADES

Nickel & Manganese Bronzes

Specialist grades for castings, seawater service and wear-resistant overlays. Match by full designation.

SF-CuAl8Ni2

S Cu 6327 (CuAl8Ni2Fe2Mn2)



Nickel aluminium bronze for wear- and chloride-resistant overlays on steel and specified cast-iron work. Assess preheat requirements for large parts in the repair procedure.

Rm 430–540 MPa · A 30% · 130–150 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	1.0, 1.2, 1.6	D300 / K300 / KS300 · 15 kg

Technical datasheet

SF-CuAl8Ni6

AWS ERCuNiAl · S Cu 6328 (CuAl9Ni5Fe3Mn2)



Nickel aluminium bronze for matching marine castings and fittings. Use for specified propeller, pump or seawater repairs and corrosion-resistant overlays.

Rm 450–560 MPa · A 10% · 150–170 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	1.0, 1.2, 1.6	D300 / K300 / KS300 · 15 kg

Technical datasheet

SF-CuMn13Al7

AWS ERCuMnNiAl · S Cu 6338 (CuMn13Al8Fe3Ni2)



High-strength manganese-nickel aluminium bronze for compatible castings and cavitation- or erosion-resistant surfacing. Typical work includes pumps and propellers.

Rm 800–900 MPa · A 10% · 180–220 HB

FORM	DIAMETER (mm)	FORMAT / NET PACK
MIG	1.2, 1.6	D300 / K300 / KS300 · 12.5 or 15 kg

Technical datasheet

Typical deposit values from Safra. Rm = tensile strength, A = elongation, HB = Brinell hardness. Grade sheets specify I1 (argon).

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CUT-LENGTH FILLER RODS

TIG & Brazing Rods

Choose the alloy to suit the parent metal and process, then specify the rod diameter, length and net carton weight.

1,000mm Straight Rods

Ø 1.6 / 2.0 / 2.4 / 3.2 / 4.0mm

10 kg or 25 kg net cartons



Grade / datasheet	EN ISO 24373	Typical rod application
SF-CuSi3	S Cu 6560	Silicon bronze for compatible copper alloys and specified TIG arc-brazed joints.
SF-CuSn	S Cu 1898A	Deoxidised copper for TIG fusion welding of compatible copper.
SF-CuSn6	S Cu 5180A	Tin bronze for repairs to compatible bronze castings and wear surfaces.
SF-CuAl8	S Cu 6100	Aluminium bronze for joining copper alloys and specified overlays.
SF-CuAl9Fe	S Cu 6180	Iron-bearing aluminium bronze for compatible marine repairs and overlays.

All five grade datasheets list the diameters, length and carton weights above. Confirm smaller packs or other lengths on enquiry.

SF-CuAl8Ni2, SF-CuAl8Ni6 and SF-CuMn13Al7 appear under TIG rods on Safra's website. Ask for rod dimensions and carton weight when ordering. Their grade sheets specify MIG spool sizes.

Specify The Brazing Process

For TIG arc brazing, specify the cut rod and confirm the alloy against the joint procedure. For MIG brazing, specify spool wire. For flame brazing, give the parent metals and required filler specification so your supplier can confirm the grade and format.

Example order: SAFRA SF-CuSi3 (S Cu 6560), TIG rod, Ø 1.6 × 1,000mm, one 10 kg carton.

Order by grade and form

Specify the cut rod for TIG brazing or spool wire for MIG brazing. Give the parent alloys and process to confirm a suitable form before ordering.

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PACKAGING AND DIMENSIONS

Spools, Drums & Coils

Safra's packaging range. Check the alloy's grade table for published combinations and confirm any special format on enquiry.



D300 spool



20 kg coil



Eco Pak65 drum

Safra format	Net weight	Pack dimensions (mm)	Filler diameter (mm)
D200 (S200)	2 or 5 kg	200 × 45	0.8, 0.9, 1.0, 1.2, 1.6
D300 (S300)	12.5 or 15 kg	300 × 100	0.8, 0.9, 1.0, 1.2, 1.6, 2.4
K300 (B300)	12.5 or 15 kg	300 × 98	0.8, 0.9, 1.0, 1.2, 1.6, 2.4
KS300 (BS300)	12.5 or 15 kg	300 × 100	0.8, 0.9, 1.0, 1.2, 1.6, 2.4
D350 (S350)	40 kg	350 × 185	1.0, 1.2, 1.6, 2.4
Eco Pak	200 kg	780 × 520	0.8, 0.9, 1.0, 1.2, 1.6
Eco Pak65	400 kg	940 × 650	0.8, 0.9, 1.0, 1.2, 1.6
Eco Pak65BA	200 or 250 kg	550 × 650	0.8, 0.9, 1.0, 1.2, 1.6
Eco Pak75BA	200 or 250 kg	550 × 750	0.8, 0.9, 1.0, 1.2, 1.6
Coil	20 kg	Confirm on order	2.4, 3.2

Spools are shown as diameter × width. Drums are shown as height × diameter.

Safra packaging specifications Copper alloys safety datasheet

Order By Grade And Format

Example enquiry: SAFRA SF-CuSi3 (S Cu 6560), MIG wire, 1.0mm, 15 kg D300, two spools. For drum supply, give the required net weight and feed arrangement.

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BULK WIRE HANDLING

Drum Feed Accessories

Match the accessory to the drum diameter, alloy family and feed system. Where Safra shows several codes, confirm the exact assembly with your supplier.





5 rollers per plane



Accessory / fitment	Safra part number
Plastic hood · 520mm	9910000003
Plastic hood · 650mm	9910000005
Plastic hood · 750mm	9910000027
Top carton rise · 650mm	9910000084
Top carton rise · 750mm	9910000085
Plastic cover for carton rise · 650mm	9910000086
Plastic cover for carton rise · 750mm	9910000090
Centring device	9910000013
Single-cone pay-off · 5xxx aluminium	9910000010 / 9910000015 / 9910000014 / 9910000026
Double-cone pay-off · 4xxx aluminium	9910000008 / 9910000007
Inner orbital arm + PTFE liner · 520mm	9910000018
Nylon balls	9910000025
Wooden balls · 40 or 55mm	9910000006 / 9910000024 / 9910000022 / 9910000023
Two-plane straightener · 5 rollers per plane	9910000016
Two-plane straightener · 7 rollers per plane	9910000017
Wire conduit	9910000011
Wire connector · all Safra drum types	9910000009

For a feed-system quote, supply the drum model, wire grade and diameter, pay-off setup and required conduit length. Confirm compatibility for copper drums and for 2xxx aluminium.

Safra drum accessories and setup tutorials

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