

SANICRO® 54 WELDING WIRE

DATASHEET

Sanicro® 54 is a nickel-chrome-molybdenum alloy of type alloy C-22. It is a versatile alloy with excellent wet corrosion resistance in oxidizing and reducing media. It has better overall corrosion resistance than other Ni-Cr-Mo alloys such as alloy UNS N10276 (2.4819) and alloy UNS N06626 (2.4856). However, in severely reducing media alloy UNS N10276 is preferred where Sanicro 56 is a better matching consumable. Applications for Sanicro® 54 are found in aggressively corrosive media such as chlorination systems, geothermal wells, HF furnace scrubbers, pesticide production, phosphoric acid production, SO₂ cooling towers and for weld overlays on valves.

Sanicro® 54 is used for joining alloy UNS N06022 (2.4602) and is widely used as overmatching filler material for alloy UNS N10276 (2.4819) and other nickel-chrome-molybdenum alloys for better weld metal properties. It is used for surfacing low alloyed steels.

STANDARDS

- ISO 18274: NiCr21Mo13Fe4W3/Ni 6022
- AWS A5.14/ASME SFA-5.14: ERNiCrMo-10
- W.Nr.: 2.4602

Product Approvals

- CE

Contact your nearest sales office for details.

Please note that the Werkstoff Nr. corresponds to the base material of the same grade.

CHEMICAL COMPOSITION (NOMINAL) %

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni	Mo	W	Co	V	Fe
≤0.015	≤0.08	≤0.50	≤0.020	≤0.010	21.5	56	13.5	3.0	≤2.5	≤0.35	≤4

APPLICATIONS

Applications for Sanicro® 54 are found in components for organic synthesis, flue gas scrubber systems, electrolytic galvanizing, plate heat exchangers, phosphoric acid production, wet chlorine gas, hypochlorite and chlorine dioxide atmosphere. Sanicro® 54 is also used in combustion-resistant components for high pressure oxygen service and ferric and cupric chloride environments.

FORMS OF SUPPLY

Sanicro® 54 is available in wire and rods.

WELD METAL CHARACTERISTICS

The following data is typical for non heat treated all-weld metal made by the TIG, MIG or PAW methods using

argon as shielding gas.

Chemical composition (nominal) %

C	Si	Mn	Cr	Ni	Mo	W	Fe
0.008	0.05	0.1	22	57.5	14	3	3

The microstructure is fully austenitic.

MECHANICAL PROPERTIES

Temperature	°C	20	-196
Yield strength, R _{p0.2}	MPa	500	-
Tensile strength, R _m	MPa	770	-
Elongation, A	%	45	-
Reduction in area, Z	%	50	-
Impact strength, Charpy V	J	150	80
Hardness, Vickers	HV10	250	-

FABRICATION

Recommended welding data

MIG/GTAW welding

Electrode positive is used to give good penetration in all types of welding joint. The table shows common conditions for MIG welding.

Wire diameter, mm	Wire feed, m/mm (in./min)	Current, A	Voltage, V	Gas, l/min.(CFH)
Spray arc welding				
1.0(0.039)	6 - 12 (236-472)	150 - 230	26 - 31	22 (46)
1.2(0.047)	5 - 9 (197-354)	170 - 280	27 - 32	22 (46)
1.6(0.063)	3 - 5 (118-197)	230 - 370	29 - 33	22 (46)
Pulsed arc welding ¹⁾				
1.2(0.047)	3 - 10 (118-394)	150 - 250	23 - 31	20 (42)

¹⁾ Pulse parameters:

- Peak current 300 - 400 A
- Background current 50 - 150 A
- Frequency 80 - 120 Hz

Shielding gases are used for sufficient protection of the weld pool.

TIG/GTAW welding

The parameters for TIG welding depend largely upon the base metal thickness and the welding application. Electrode negative and a shielding gas of argon or helium should be used to prevent oxidation of the weld metal.

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without

notice. This datasheet is only valid for Sandvik materials.

