

EXATON Product Data Sheet

G 'Gas-shielded metal-arc welding'

Exaton Ni59

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Per-Ake Bjornstedt	P-O Oskarsson	Per-Ake Bjornstedt	EN009120	EN009091	2020-02-26	1 (2)

REASON FOR ISSUE

Product name changed from Sandvik to Exaton.

GENERAL

Exaton Ni59 is a nickel-chrome-molybdenum alloy of type alloy 59. It is a versatile alloy with excellent wet corrosion resistance for the most demanding applications. It combines excellent corrosion resistance in oxidizing and reducing media, has excellent resistance in chloride containing media and to localized corrosion environments. Exaton Ni59 has excellent thermal stability compared to other common nickel alloys and has therefore outstanding resistance to intermetallic precipitation during welding. Applications for Exaton Ni59 are found in aggressive and contaminated corrosive media including scrubbers for flue gas desulfurisation (FGD), chemical process plants and in severe offshore and petrochemical environments.

Exaton Ni59 is used for joining matching alloys or dissimilar joining to other nickel alloys such as UNS N10276 (2.4819), type UNS N06022 (2.4602), UNS N06625 (2.4856) and N08825 (2.4858). It provides strong, tough, Nb free weld metal for dissimilar welds in super-austenitic and super-duplex stainless steel joints or combinations of these with nickel alloys. Exaton Ni59 can be used for surfacing.

Applications for Exaton Ni59 are found in contaminated mineral acid environments such as sulfuric acid, hydrochloric acid, phosphoric acid, nitric acid etc. Components in sulfuric acid coolers, digesters and bleachers. Chemical, petrochemical, marine, pharmaceutical, energy production and pollution control.

Exaton Ni59 is approved in ISO15156/MR0175 (highest test level VII in sour-gas environments).

Exaton Ni59 is used to weld most of the nickel alloys such as alloy 59, C-22, C-276 etc. It can also be used for joining nickel alloys with duplex stainless steels, super duplex stainless steels and hyper duplex stainless steels. It is used for MIG/MAG welding.

CLASSIFICATIONS Wire Electrode

SFA/AWS A5.14	ERNiCrMo-13
EN ISO 18274	S Ni 6059 (NiCr23Mo16)
Werkstoffnummer	2.4605

APPROVALS

CE EN 13479

APPROVALS (SPECIFIC)

VdTÜV 09183 MV

CHEMICAL COMPOSITION

Wire/Strip (%)

	Nom
C	<=0.01
Si	<=0.1
Mn	<=0.5
P	<=0.015
S	<=0.01
Cr	23
Ni	59
Mo	15.5
Co	<=0.3
Al	0.3
Fe	<=0.5

EXATON Product Data Sheet

G 'Gas-shielded metal-arc welding'

Exaton Ni59

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Per-Ake Bjornstedt	P-O Oskarsson	Per-Ake Bjornstedt	EN009120	EN009091	2020-02-26	2 (2)

MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Properties	As welded Typ
Rp0.2 (MPa)	470
Rm (MPa)	750
Z (%)	45
Charpy V at 20°C (J)	170
Charpy V at -196°C (J)	130
Comments: Elongation, A = 40	

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	H		Feed		U	
$\emptyset$	Min	Max	Nom	Nom	Min	Max	Min	Max	Min	Max
1.2	150	260	18.0				3	10	24	29
1.6	230	350	18.0				3	5	25	30

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

H = Deposit rate (kg weld metal / hour arc time)

Feed = Feeding rate (m/min)

U = Arc voltage (V)

OTHER DATA

CORROSION RESISTANCE: Exaton Ni59 shows very good resistance to pitting corrosion, intergranular corrosion (corrosion rate <0.9 mm/year when tested acc. to ASTM G28 A) and is almost immune to stress corrosion cracking in chloride-containing environments.

RECOMMENDED WELDING DATA:

Electrode positive is used to give good penetration in all types of welded joint.

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

WELD METAL CHARACTERISTICS: The microstructure is fully austenitic.