



# Product Data Sheet

E 'Manual metal-arc welding'

**OK Ni-1**  
Former OK 92.05

Prepared by A-C Thorsson	Qualified by P-O Oskarsson	Approved by Tapio Huhtala	Reg no EN007402	Cancelling EN006279	Reg date 2016-11-08	Page 1 (2)
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## REASON FOR ISSUE

Hardness data added under Other Data.

## GENERAL

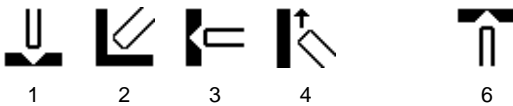
A stick electrode for joining commercially pure nickel in wrought and cast forms. Also for joining dissimilar metals such as nickel to steel, nickel to copper and copper to steel. The electrode can also be used for surfacing steel.

**Polarity:** DC+

**Alloy Type:** Nickel-base

**Coating Type:** Lime Basic

## WELDING POSITIONS



## CLASSIFICATIONS Electrode

SFA/AWS A5.11    ENi-1  
EN ISO 14172    E Ni 2061 (NiTi3)

## APPROVALS

Not applicable

## CHEMICAL COMPOSITION

### All Weld Metal (%)

	Min	Max
C		0.05
Si		1.0
Mn		0.7
P		0.020
S		0.010
Ni	92	
Cu		0.2
Al		0.1
Ti	1.0	4.0
Fe		0.7

## MECHANICAL PROPERTIES OF WELD METAL

Properties	ISO	
	As welded	Typ
Rp0.2 (MPa)	200	330
Rm (MPa)	410	470
A5 (%)	18	30



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## ECONOMICS & CURRENT DATA

Dimension (mm) Ø x Length	Current (A)		W	η	N	B	H	T	U	Welding Positions
	Min	Max								
2.5 x 300	70	95	1.8	90	0.55	96	0.80	47		1,2,3,4,6
3.2 x 350	90	135	3.4	90	0.55	53	1.20	56		1,2,3,4,6

- W** = Weight (kg / 100 electrodes)  
**η** = Efficiency (g weld metal x 100 / g core wire)  
**N** = Effective value (kg weld metal / kg electrodes)  
**B** = Changes (number of electrodes / kg weld metal)  
**H** = Deposit rate at 90% of max current (kg weld metal / hour arc time)  
**T** = Fusion time at 90% of max current (s / electrode)  
**U** = Arc voltage (V)

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## OTHER DATA

Redrying the electrodes: 250 °C, 2h.

Welding recommendations:

To avoid weld metal defects it is important that surfaces to be welded are thoroughly cleaned and free from oxides. Machining, grinding, grit blasting or pickling are ways to do this. Brushing is not advisable.

High nickel weld metal, as from OK Ni-1, has reduced wettability compared to steel weld metal. However, this should not be compensated by increasing the welding current above the recommended maximum limit for the electrode. This may lead to loss of deoxidizers and thereby cause formation of pores.

Weaving technique is generally desirable.

The opening angle for joints should be between 80 - 90°.

Machinability: Good.

Hardness data:

As welded condition, transverse cross section of an ISO joint, measurements done along a vertical centre line (8-9 indents) and a horizontal line at the top layer (10 indents), 2 samples tested: 139 - 198 HV10, average 163 HV10.

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