

**Technical data sheet**

011121MBA

**Cored welding wire  
GAMMA 4648****CLASSIFICATION**

Material number: 2.4648  
 EN ISO 12153: T Ni 6083(NiCr20Mn6Fe4Nb) B M21 3  
 AWS A 5.34 / AWS A5.34M: ENiCr3T0-4 (Nearest)2 / TNi6082-04 (Nearest)<sup>1</sup>

<sup>1</sup> GAMMA 4648 is over-alloyed in manganese and contains deliberate molybdenum additions

**DESCRIPTION**

- Flux cored nickel base wire for gas shielded arc welding
- Latest generation basic slag guarantees optimum metallurgical quality and attractive welder appeal
- Together with enhanced productivity, GAMMA 4648 offers many other advantages compared to solid wires: improved wetting properties, increased resistance to cracking, better bead appearance and shape, use of classical M21 gas mixtures
- Maximum performance in the horizontal and flat positions

**APPLICATIONS**

- GAMMA 4648 is suitable for welding and cladding nickel-based alloys such as alloy 600 or similar materials.
- It is also used for dissimilar welding of most nickel-based alloys to each other, to alloyed steels, or to stainless steels.
- GAMMA 4648 can be used up to service temperatures of 900°C.
- It is a first choice consumable for heterogeneous weldments between creep-resisting ferritic steels and austenitic steels for use at high temperatures. If necessary, such joints may be stress relieved
- Repair welding on "hard-to-weld" steels

**Examples:**

Alloy	UNS	EN Symbol	Material number
600	N06600	NiCr15Fe	2.4816
800	N08800	X10 NiCrAlTi 32-21	1.4876
800H	N08810	X10 NiCrAlTi 32-21	1.4876
800HT	N08811	X8 NiCrAlTi 32-21	1.4959
330	N08330	X12 NiCrSi 36-16	1.4864

**APPROVALS**

TÜV (11802.02)

**TYPICAL ALL-WELD METAL ANALYSIS [%]**

C	Mn	Si	Cr	Nb	Mo	Fe	Ni
0.02	5.50	0.20	20.0	2.40	1.30	2.40	Bal.

**MINIMUM ALL-WELD METAL MECHANICAL PROPERTIES**

Rm [MPa]	Rp0.2% [MPa]	A <sub>5</sub> [%]	CVN [J]
600	360	25	+20°C: 70

**TYPICAL ALL-WELD METAL MECHANICAL PROPERTIES**

Rm [MPa]	Rp0.2% [MPa]	A <sub>5</sub> [%]	CVN [J]
650	400	30	-196°C: 80

**SHIELDING GAS**

EN ISO 14175: M21 (Ar + 15 - 25% CO<sub>2</sub>)

**OPERATING CONDITIONS**

Diameter [mm]	Current type	Current [A]	Voltage [V]	Stick-out [mm]	Gas flow [l/min]
1.2	DC+	130 - 250	24 - 32	12 - 25	10 - 20
1.6	DC+	150 - 300	24 - 32	12 - 25	10 - 20

**WELDING POSITIONS**

Flat, Horizontal

**PACKAGING**

Diameter	1.2 mm	1.6 mm
Spool type	EN ISO 544 – ASME IIC SFA-5.2 M : BS300	
Weight	15 kg	

Other packaging and other diameters: please consult us

Welding products and techniques evolve constantly. All descriptions, illustrations and properties given in this data sheet are subject to change without notice and can only be considered as suitable for general guidance. This document is intended to help the user make the correct choice of product. It is his responsibility to assess its suitability for his intended application.