



DAIKOWS 622



NICKEL ALLOYS

C22

DESCRIPTION

Solid wire for Nickel based alloy C22

It is designed to match the nickel base alloy commonly known as C22. The high level of Mo is similar to alloys C276 and C4 but performance in a wide range of more oxidising media is significantly enhanced in alloy C22 by increasing Cr to 22%. This alloy also provides a tough Nb-free weld metal for dissimilar welds in superaustenitic and superduplex stainless steel or combinations of these with Ni base alloys.

SPECIFICATIONS

| | | | |
|----------------|------------|------------------|-----------------|
| ISO 18274 | S Ni 6022 | AWS A5.14 | ERNiCrMo-10 |
| DIN | - | Werkstoff Number | - |
| Certifications | - | Shielding | DAIKOFLUX 960-W |
| Positions | PA, PB, PC | Current | DC/AC |

ASME QUALIFICATIONS

| | |
|--------------|----|
| F-No (QW432) | 43 |
| A-No (QW442) | - |

FERRITE

| |
|---|
| - |
|---|

PREN

| |
|-------|
| 73.15 |
|-------|

HARDNESS

| |
|---|
| - |
|---|

CHEM. COMP. %

DEFAULT

| | |
|----|-------|
| C | 0.005 |
| Mn | 0.2 |
| Ni | 56 |
| Cr | 22 |
| V | 0.01 |
| P | 0.005 |
| S | 0.001 |
| Mo | 14 |
| Si | 0.05 |
| Fe | 4.6 |
| W | 3 |

MECHANICAL PROPERTIES

| | MIN | VARIANT |
|-------------------------------|------|---------------|
| Tensile strength R_m MPa | 690* | 730 |
| Yield strength $R_{p0.2}$ MPa | 0 | 490 |
| Elongation A ($L_0=5d_0$) % | 0 | 38 |
| Impact Charpy ISO-V | - | 100J @ -196°C |
| Impact Charpy ISO-V | - | - |

WELDING PARAMETERS

| | |
|----------------|-----------------------|
| Ampere | 300A - 410A |
| Voltage | 27V - 33V |
| Packaging | Ø 1,6÷3,2mm |
| Packaging Type | K415 spool and drums. |

V 01/2024



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.



**C22**

DESCRIPTION

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C22

APPLICATION

The composition of the weld deposit, Ni-22Cr-13.5Mo-3W, is tailored to correspond to the nickel base alloy commonly referred to as alloy C22. The elevated molybdenum content mirrors alloys C276 and C4, but alloy C22 significantly improves performance in a broader range of oxidizing media by increasing chromium to 22%. Alloy C22 also furnishes a robust Nb-free weld metal suitable for dissimilar welds involving superaustenitic and superduplex stainless steels, or combinations of these with nickel base alloys. Some authorities prohibit or have ceased the use of alloy 625 consumables in such applications, where harmful Nb-rich precipitates may form in diluted or partially mixed regions around the fusion boundary. Applications of alloy C22 in highly corrosive environments encompass scrubbers for flue gas desulphurization (FGD), digesters and papermaking equipment, chemical process plants, corrosion-resistant overlays, and in severe offshore and petrochemical settings. Preheat is not typically required, with interpass temperature restricted to 100°C, and maintaining heat inputs below 1 kJ/mm is advisable.

ALLOY TYPE

Nickel base 22%Cr-13.5%Mo-3%W, alloy C22.

MICROSTRUCTURE

Solid solution strengthened high nickel austenite, with some microsegregation typical of as deposited weld metal.

MATERIALS

EN W.Nr.: 2.4602 (NiCr21Mo14W), 2.4811, 2.4836 (NiCr20Mo15), 2.4697 (G-NiCr20Mo15), 2.4610 (NiMo16Cr16Ti), 1.4529, 1.4565, 1.4575, 1.4652.

ASTM: A494 CX2MW (cast).

UNS: N06022, N06455, S31254, S31266, S32654, S34565, N08367, N08925, N08926.

PROPRIETARY: Hastelloy® Alloy C-22, C-4 (Haynes International Inc), Nicrofer 5621hMoW (VDM), Inconel® 622 (Special Metals), 254SMO, 654SMO (Outokumpu), Uranus B66 (Usinor Industeel).

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