

| Sales Offices | Phone        | Fax          |
|---------------|--------------|--------------|
| Adelaide      | 08 8345 1033 | 08 8345 1044 |
| Brisbane      | 07 3722 0800 | 07 3277 6799 |
| Melbourne     | 03 9409 8500 | 03 9408 3946 |
| Sydney        | 02 9827 0790 | 02 9757 4486 |
| Perth         | 08 9258 2600 | 08 9358 6206 |

## PRODUCT DATA SHEET

### Inconel 82 Welding Filler Metal UNS N06082

### Nickel Alloy Welding Consumable

#### Chemical Composition (Deposited weld metal)

| Element   | %           | Element    | %             |
|-----------|-------------|------------|---------------|
| Carbon    | 0.10 Max    | Iron       | 3.00 Max      |
| Manganese | 2.50 - 3.50 | Phosphorus | 0.030 Max     |
| Silicon   | 0.50 Max    | Titanium   | 0.75 Max      |
| Sulphur   | 0.015 Max   | Chromium   | 18.00 - 22.00 |
| Copper    | 0.50 Max    | Niobium    | 2.00 - 3.00   |
|           |             | Nickel     | 67.00 Min     |

**Inconel Filler Metal 82** is suitable for moderate creep service. FM82 is used for GTAW(TIG), GMAW(MIG) and SAW of Inconel alloys 600, 601 and 690, Incoloy alloys 800 and 800HT, and alloy 330. It is also used for surfacing of steel for corrosion and oxidation resistance, and is available in strip form.

Submerged arc welding is done with INCOFLUX 4 Submerged arc flux. For submerged arc surfacing, INCOFLUX 6 Submerged arc flux is used, to a maximum of three layers.

Weld metal deposited by Filler Metal 82 has high strength and good corrosion resistance, including oxidation resistance and creep rupture strength at high temperatures. Dissimilar welding applications include joining of Inconel alloys, Incoloy alloys, and alloy 330 to nickel, Monel, stainless steel, and carbon steels. FM82 can also be used to join stainless steel to nickel alloys and carbon steel.

#### Minimum Mechanical Properties (All weld metal, as welded)

| Tensile Strength<br>MPa | Elongation<br>% |
|-------------------------|-----------------|
| 550                     | 30              |

#### Sizes and Welding Parameters

##### (a) GTAW (900 mm lengths)

| Diameter, mm              | 1.6         | 2.4         | 3.2        | 4.0        |
|---------------------------|-------------|-------------|------------|------------|
| Amps, DCEN                | 90 - 160    | 100 - 190   | 110 - 210  | 130 - 230  |
| Gas cup size (inch)       | 3/8 - 5/8   | 3/8 - 5/8   | 1/2-5/8    | 1/2-5/8    |
| Electrode diameter (inch) | 1/16 - 3/32 | 1/16 - 3/32 | 3/32 - 1/8 | 3/32 - 1/8 |

##### (b) GMAW (13.6 kg spools)

| Diameter, mm            | 0.9                           | 1.2       | 1.6       |
|-------------------------|-------------------------------|-----------|-----------|
| Wire feed speed, mm/min | 425 - 520                     | 250 - 310 | 125 - 200 |
| Voltage                 | 26 - 32                       | 26 - 32   | 27 - 33   |
| Current, amps           | 180 - 260                     | 225 - 300 | 250 - 330 |
| Shielding gas           | Argon or (Argon + 25% Helium) |           |           |

(c) **SAW wire** - 20-30 Kg coils of wire below 2.0mm, 20-45 Kg coils of wire above 2.0mm

(d) **Inconel FM82 Weldstrip** is nominally 60 x 0.5 mm

**Specifications**      AWS A5.14 ERNiCr-3