GB/T 13814 ——

AWS A5.14 ERNiCrFeAl-1

EN ISO 14172——

# AK ERNiCrFeAl-1

**Description:** ERNiCrFeAl-1 is a nickel-chromium-iron-aluminum welding alloy used for welding Alloy 693 and for corrosion-resistant overlay applications. Its high chromium and aluminum content gives excellent resistance to metal dusting, carburization, sulfidation, and other forms of high-temperature corrosion.

**Application:**ERNiCrFeAl-1 is widely used in chemical and petrochemical equipment, especially where components face metal dusting and carburizing atmospheres. It is suitable for welding Alloy 693, joining it to steels, and overlaying carbon or stainless steels for high-temperature corrosion protection.

**Typical Chemical Compostion(%):**

| | C | Si | Mn | S | P | Cr | Ni | Cu | TI |
|---|---|---|---|---|---|---|---|---|---|
| **Requirement** | 0.15 | 0.50 | 1.0 | 0.010 | 0.030 | 27.0-31.0 | Rem. | 0.50 | 1.0 |
| **Actual Result** | 0.11 | 0.25 | 0.60 | 0.001 | 0.015 | 28.63 | Rem. | 0.10 | 0.20 |
| | **N** | **Fe** | **Al** | **Nb+Ta** | **Mo** | **B** | **Zr** | **Co** | **W** |
| **Requirement** | —— | 2.50-6.0 | 2.50-4.0 | 0.50-2.50 | —— | —— | —— | —— | —— |
| **Actual Result** | —— | 5.34 | 2.96 | 2.10 | —— | —— | —— | —— | —— |

**Typical Mechanical Properties:**

| | Tensile Strength (MPa) | Yield Stress ( MPa) | Elongation (%) | Impact Values ( J) |
|---|---|---|---|---|
| **Requirement** | ≥590 | | | |
| **Actual Result** | 635 | | | |