

Iron-Chromium-Aluminum FeCrAl (0Cr23Al5) alloy

Heanjia Super Metals Co., Ltd

The FeCrAl (0Cr23Al5) is used to generate large amount of heat in the commercial heating operations. It offers superior resistance to oxidation and corrosion at the high temperatures. It inhibits scaling and embrittlement of material and offers prolonged functionality in the rigorous corrosive conditions at the elevated temperatures up to 1250°C.



Chemical Composition of FeCrAl(0Cr23Al5) Alloy

Cr	Al	Fe	Mn
20.5-23.5 %	4.2-5.3 %	Bal.	≤0.7

Physical Properties of FeCrAl(0Cr23Al5) Alloy:-

Max Continuous Service Temp. of Element oC	1250
Density g/cm ³	7.25
Resistivity Ω m ² /m	1.35±0.06
Temp. Coefficient of Resistance	14.5
Melting point °C	1500
Tensile strength Mpa	637-784
Elongation %	>12
Hardness	200-260

FeCrAl Wire Mesh Screen- Resistivity		
Dia (mm)	Cross section area(mm ²)	0Cr23Al5
		Resistivity μΩ • m 1.35±0.06 Resistance (20°C Ω/m)
0.10	0.0078	173.1
0.12	0.0113	119.5
0.15	0.0177	76.4
0.17	0.0227	59.5
0.19	0.0284	47.5
0.21	0.0346	35.5
0.25	0.0491	27.5

Benefits of FeCrAl(0Cr23Al5) Alloy

1. Elevated temperature functionality in natural atmosphere from 1200oC to 1400oC.
2. FeCrAl alloy has longer service life than Nikrothal alloy at the same temperature limits.
3. Higher max temperature and prolonged function period.
4. It prepares alumina oxide when these are placed in air. Alumina oxide is more reliable and sustainable. These better prevent diffusion of external particles in the alloy and offer excellent resistance to carburization as compare to nichrome alloy.
5. It has nominal density as compare to nickel-chrome alloys thus higher equivalent can be created from these materials.
6. High resistivity of **FeCrAl(0Cr23Al5) Alloy** makes it to be used with bigger cross section that improves the service life of an element, comparatively less weight gained. Moreover the resistivity properties of FeCrAl alloys are less affected by cold and hot procesing than Nichrome alloys.
7. FeCrAl(0Cr23Al5) Alloy has large yield strength so these do not cause noticeable alteration in cross section of coiling wire.

Applications of FeCrAl(0Cr23Al5) Alloy

1. Catalytic converters
2. Resistance heating products
3. Radiant heating elements in gas or oil stoves

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