

## AK Steel 18 SR® Ferritic Stainless steel

Category : Metal , Ferrous Metal , Stainless Steel

**Material Notes:**

AK Steel 18 SR® provides excellent resistance to high temperature scaling - far superior to that of Type 446 stainless steel. This material is readily welded by conventional methods. It is not subject to troublesome embrittlement or loss of corrosion resistance in the heat affected zones that affects many other straight chromium alloys. Typical uses include industrial ovens, blowers, exhaust systems, furnace equipment, heaters, induction furnaces and furnace tubes, annealing boxes, baffle plates, heat exchangers, resistor grids, kiln liners and pyrometer tubes. Information provided by AK Steel

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_AK-Steel-18-SR-Ferritic-Stainless-steel.php](http://www.lookpolymers.com/polymer_AK-Steel-18-SR-Ferritic-Stainless-steel.php)

Physical Properties	Metric	English	Comments
Density	7.45 g/cc	0.269 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	84	84	
Tensile Strength, Ultimate	538 MPa	78000 psi	
	34.0 MPa	4930 psi	
	@Temperature 871 °C	@Temperature 1600 °F	
Tensile Strength, Yield	110 MPa	16000 psi	
	@Temperature 704 °C	@Temperature 1300 °F	
	338 MPa	49000 psi	
Tensile Strength, Yield	@Temperature 538 °C	@Temperature 1000 °F	
	386 MPa	56000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Tensile Strength, Yield	21.0 MPa	3050 psi	
	@Strain 0.200 %, Temperature 1600 °C	@Strain 0.200 %, Temperature 2910 °F	
	97.0 MPa	14100 psi	
Tensile Strength, Yield	@Strain 0.200 %, Temperature 1300 °C	@Strain 0.200 %, Temperature 2370 °F	
	234 MPa	33900 psi	
	@Strain 0.200 %, Temperature 1000 °C	@Strain 0.200 %, Temperature 1830 °F	
Elongation at Break	30 %	30 %	in 2 inches

Mechanical Properties	Metric	English	Comments
Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	943 °C	1730 °F	Normal Operation
	1050 °C	1930 °F	Peak

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.7 %	1.7 %	
Carbon, C	0.015 %	0.015 %	
Chromium, Cr	17.3 %	17.3 %	
Iron, Fe	80.185 %	80.185 %	As Remainder
Manganese, Mn	0.30 %	0.30 %	
Nickel, Ni	0.25 %	0.25 %	
Titanium, Ti	0.25 %	0.25 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000950 - 0.000105 ohm-cm	0.0000950 - 0.000105 ohm-cm	

Descriptive Properties	Value	Comments
Corrosion Resistance	69 mm/year	Synthetic Muffler Condensate (Dilute H2SO4 - HBr Vapors, 240 hours)
Deep-Drawing Capability $r_m$	1.4	
Strain Hardening Exponent $n$	0.18	

## Contact Songhan Plastic Technology Co.,Ltd.

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