

Properties of Sishen 66% 27mm lump ore

Substance	Specification (%)	Typical (%)
Chemical properties		
Fe	66.00 Min.	66.27
SiO ₂	3.70 Max.	2.98
Al ₂ O ₃	1.50 Max.	0.95
P	0.060 Max.	0.055
S	0.026 Max.	0.013
K ₂ O	0.19 Max.	0.13
Fe ₂ O ₃	–	94.78
FeO	–	<0.18
TiO ₃	–	<0.038
CaO	–	<0.047
Na ₂ O	–	0.0127
MgO	–	<0.013
Mn	–	<0.011
As	–	0.0017
Cr	–	0.0032
Ni	–	0.0023
Zn	–	<0.0008
Pb	–	0.0011
Cu	–	<0.0004
Mo	–	<0.0008
V	–	0.0047
LOI _(900°C)		0.60
Moisture	1.00 Max.	0.97

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Physical properties		
Screen analysis at the port of loading:		
+26.5mm	11.00 Max	3.8
-26.5 + 25mm		7.0
-25 + 20mm		35.7
-20 + 16mm		29.9
-16 + 12.5mm		14.2
-12.5 + 9.5mm	10.0 Max (-12.5mm)	4.2
-9.5 + 8mm		1.6
-8 + 6.3mm		1.2
-6.3mm		2.4
Bulk Density	-	2.1 g/cm ³
Porosity	-	5.8%
Metallurgical characteristics		
Decrepiation Index (ISO 8371)		
DI _{-6.3mm}	-	0.81
Reducibility Index (ISO 4695)		
RI _{R40}	-	0.65 %/min
Reducibility Index (ISO 7215)		
RI	-	43.3
Tumbler Index (ISO 3271)		
TI	-	91.9
AI	-	3.3

Substance	Specification (%)	Typical (%)
Reduction Disintegration Index (ISO 4696.1)		
RDI _{+6.3mm}	-	84.6
RDI _{-3.15mm}	-	8.5
RDI _{-0.5mm}	-	2.7
Reducibility (HYL method)		
k at 800 °C	-	Est. 3.1
k at 950 °C	-	Est. 5.1
Low temperature Disintegration (HYL method)		
+6.3mm	-	Est. 49.0
-3.2mm	-	Est. 30.0
Midrex Linder Test (760 °C)		
Metallization (+6.3mm)	-	95.6
Carbon (+6.3mm)	-	0.67
Process Fragmentation		
-3.36mm	-	2.9
Midrex Hot Load Test (815 °C)		
Metallization (+6.3mm)	-	98.0
% < 3.36mm after reduction	-	4.6
% > 6.73mm after tumble	-	84
Carbon (+6.3mm)	-	0.83
Clustering % > 25mm after 10 rev	-	0