

December 14, 2010

PRODUCT: BF fluxed pellets 63

SOURCE: OAO «Karelsky Okatysh» located in Kostomuska, Republic of Karelia, Russian Federation.

SPECIFICATIONS: (ASTM Standards, Dry basis, except moisture)

1. TYPICAL CHEMICAL SPECIFICATION (on dry basis at discharging port)			
Chemical Composition	Average %	Maximum %	Minimum %
Iron, Fe	63,5	64	63
Silica, SiO ₂	5	5,5	4,5
Sulphur, S	0,09	0,11	
Calcium Oxide, CaO			3,2
Na ₂ O+ K ₂ O		0,15	
Magnesia, MgO		0,3	
Phosphorous, P		0,02	
Aluminium oxide, Al ₂ O ₃		0,35	
Potassium Oxide, K ₂ O	0,08	0,105	
Titanium Oxide, Ti O ₂		0,04	
Manganese, Mn		0,04	
Copper, Cu		0,005	
Nickel, Ni		0,005	
Vanadium, V		0,002	
Chrome, Cr		0,005	
Molybdenum, Mo		0,002	
Zinc, Zn		0,005	
Lead, Pb		0,005	
H ₂ O		2,5	1
Basicity	0,74	0,77	0,71

2. PHYSICAL PROPERTIES (at discharging port)			
Size distribution	6,3-18mm	95% min	
Tumbler test:	0.50 mm	5 % max	
Cold compression strength		220 Kg/P minimum	
Mean Size	12,5mm	13mm	12
<6,3mm		5%	

PRODUCT: BF acid iron ore pellets 65

SOURCE: OAO «Karelsky Okatysh» located in Kostomuska, Republic of Karelia, Russian Federation.

SPECIFICATIONS: (ASTM Standards, Dry basis, except moisture)

Kostomuska Acid Pellets

Chemical composition	Typical, %	Minimum, %	Maximum, %
Iron, Fe	65,0	64,5	
Silica, SiO ₂	5,8	4,9	6,2
Alumina, Al ₂ O ₃	0,35		0,45
Phosphorous, P	0,02		0,04
Sulphur, S	0,008		0,02
Magnesia, MgO	0,22	0,13	0,6
Manganese, Mn	0,03	0,02	0,04
Calcium Oxide, CaO	0,60	0,40	0,80
Na ₂ O+ K ₂ O	0,15		0,17
Potassium Oxide, K ₂ O	0,09		0,12
Titanium Oxide, Ti O ₂	0,03		0,035
Cobalt, Co	<0,001		0,001
Chrome, Cr	<0,005		0,005
Copper, Cu	0,002		0,005
Nickel, Ni	<0,005		0,005
Lead, Pb	0,001		0,005
Tin, Sn	<0,001		0,001
Vanadium, V	0,0028		0,003
Zinc, Zn	0,003		0,0035
LOI	0,15		0,25
H ₂ O loss at 105 ^o C	1,0	-	2,5

Physical structure (dry basis)	Typical, %	Minimum, %	Maximum, %
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Screen Size			
+20.0 mm (ISO 4701)	1,0		
- 16.0 mm + 5.0 mm	90,0	80,0	
- 5.0 mm	2,0		4,0

Tumble Test (ISO/DIS 3271)	Typical	Min	Max
+ 6.3mm	94.5		
- 0.5 mm	5		

Cold Compression Strength (ISO 4700)			
Average (kg min)	220		235
% less than 90 kg	1		

Reducibility (ISO/DIS 4695)	0.5
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Swelling Index (ISO 4698)	
% Volume	15

Burhard	
TK 50, C, minute	1200
TDR 10, C, minute	1180



ZAO Severstal Resources
Main Office
2/3 Klary Tsetkin str., bld. 1
Moscow, 127299
Russia
Tel: +7 (495) 981-0910
Fax: +7 (495) 981-0918
www.severstal.com

Thanks very much for your time and consideration.

Best regards,

Yevgeny Shmakov
Head of Sales

ZAO Severstal
Resources
Main Office
2/3 Klary Tsetkin str.,
bld. 1
Moscow, 127299
Russia

Tel: +7 (495) 981-0910 ext. 6728
Fax: +7 (495) 981-0918
Cell: +7 (917) 501-1612
ev.shmakov@severstalresurs.ru
eshmakov@pbscoals.com
www.severstal.com

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