



ORIENT AMERICAN ORE COMPANY, L.L.C.

P.O. Box 141 ~ Kalamazoo, MI 49004 • p/f: (269) 345-0950
 OrientAmericanOre.com • info@orientamericanore.com

Product Specification Examples

Delivery: 10 to 45 Days to Port of Loading
Bulk, Break-bulk and Container Shipments to Customers' Door is Offered

COKE

Packing: In one metric ton bag or bulk Size: Buyer's specifications

	METALLURGICAL	FOUNDRY	PETROLEUM
Fixed Carbon	86% min	89% min	93 - 94%
Ash (on Dry Basis)	12% min	9% max	0.3 - 0.5%
Sulfur	0.6% max	0.5% max	0.5 - 1.0%
Volatile Matter	1.5% max	1.5% max	1%
Moisture	4% max	4% max	3% max
Caloric Value	6,800-6,900 Kcal/kg	7,000 Kcal/kg	7,100 Kcal/kg

ANTHRACITE COAL/SEMIGRAPHITE

Fixed Carbon	78%	86%	80% min
Ash	15%	6%	15% max
Volatile Matter	8%	9%	6% max
Sulfur	1%	0.5%	0.3% max
Moisture	7%	6%	1.5% max
Caloric Value	6,800	7,800	6,800
Size	20-100	40-80	0-6mm
	85%	80%	80% min

PIG IRON

	Foundry	Basic
Carbon	3.3%	3.5-4.5% max
Silicon	1.6%	1.25% min
Manganese	0.9%	1.25% max
Phosphorus	0.15%	0.15% max
Sulfur	0.05%	0.05% max
Weight	7-9 kg	7-9 kg/piece

GRAPHITE ELECTRODES

Sized to buyer's specification
 Density: 1.6, 1.7, 1.8 & 1.9

EDM GRAPHITE

Electromagnetic Discharge
 Machining (EDM) Graphite
 of various specifications

ARTIFICIAL GRAPHITE

Packing: In 50 lb., 25 kg, or 1 metric ton bag

Fixed Carbon	98% or 99.9% min	Sizes:	0-1 mm
Sulfur	0.05% max		0-5 mm
Moisture	1% max		0-8 mm
			0-10 mm
			0.5-8 mm
			0.5-10 mm

CALCINED ANTHRACITE

Packing: In 50 lb., 25 kg, or 1 metric ton bag

Fixed Carbon	95% min	Sizes:	1-6 mm
Sulfur	0.2% max		
Fixed Carbon	93% min	Sizes:	1-6 mm
Sulfur	0.3% max		



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Product Specification Examples, Page 2

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NATURAL AMORPHOUS GRAPHITE

Fixed Carbon	80% min	82% min	85% min	88% min	90% min
Ash	15% max	14% max	12% max	10% max	9% max
Sulfur	0.07% max	0.07% max	0.06% max	0.05% max	0.04% max
Volatile Matter	4.0% max	4.0% max	4.0% max	4.0% max	4.0% max
Moisture	8% max	8% max	8% max	8% max	8% max

DRY NATURAL AMORPHOUS (AM) & FLAKE (FL) GRAPHITE

Packing: 50 lb., 25 kg, or 1 MT bag. Size and Briquette size to buyer's specification

A. AM	Fixed Carbon	80% min	1) Size	+20 mesh	5% max
	Moisture	2% max		-100 mesh	20% max
			2) Size	+40 mesh	10 + 5%
				+100 mesh	50 + 10%
				-325 mesh	40 + 10%
			3) Size	0-2 mm	
			4) Size	2-5 mm	
B. AM	Fixed Carbon	80% min	Size	1/4" x 0	
				(down)	
	Ash	15%		0-6 mm	
	Sulfur	0.1%			
	Volatile Matter	5% max			
	Moisture	2% max			
	Phosphorus	0.5% max			
C. AM	Fixed Carbon	90% min	Size	+10 mesh	Trace
	Moisture	2% max		+14 mesh	3% max
				+20 mesh	20-70%
				+30 mesh	25-55%
				+40 mesh	30% max
				-40 mesh	8% max
D. FL	Fixed Carbon	93% min	Size	100 mesh	80% min
	Moisture	2% max			
E. AM	Fixed Carbon	80% min	83% min	85% min	BRIQUETTE
	Sulfur	0.07% max	0.07% max	0.08% max	55 x 45 x 40 mm
					or 30 x 22 x 16 mm
	Ash	15% approx	14% approx	12% approx	or sized to buyer's
	Volatile Matter	3% approx	3% approx	3% approx	specification
	Moisture	1.5 or 2% max	1.5 or 2% max	1.5 or 2% max	



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Specification Examples, Page 3

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Metals & Alloys

FOUNDRY ALLOYS- INOCULANTS

Packing: In one metric ton bag or bulk

	A	B	C	D
Silicon	70 - 74%	62 - 66%	77 - 82%	74 - 79%
Aluminum	0.8 - 1.5%	0.9 - 1.5%	1.0 - 1.5%	0.6% max
Calcium	0.8 - 1.5%	1.6 - 3.0%	1.0 - 1.5%	0.1% max
Barium	1.5 - 2.5%	3.25 - 5.5%	--	--
Manganese	--	8 - 10%	--	--
Zirconium	--	--	2.8 - 3.5%	--
Strontium	--	--	--	0.7 - 1.1%

SILICON METAL

	A	B	C
Silicon	98.25%	98.50%	99.00% min
Iron	1.00%	0.50%	0.40% max
Calcium	0.07%	0.30%	0.10% max
Aluminum	0.75%	0.50%	0.40% max
Size	10 - 100 mm	10 - 100 mm	10 - 100 mm

MAGNESIUM FERRO SILICON

	5% Mg Fe Si	3% Mg Fe Si
Silicon	43- 48%	43 - 48%
Magnesium	5.5 - 6.5%	3.0% - 3.8%
Calcium	1.5 - 2.0%	0.8 - 1.35%
Aluminum	1.2% max	1.25% max
Total Rare Earths	0.8 - 1.1%	1.5 - 2.2%
Size	1¼" x ¼"	1¼" x ¼"

FERROCHROME

	A	B	C
Chrome	62 - 72%	65 - 72%	65 - 72%
Carbon	6 - 9.5%	0.1% max	0.05% max
Silicon	3.0% max	1.0% max	1.0% max

FERROMANGANESE

	A	B
Manganese	76 - 79%	80 - 85%
Calcium	7.5% max	1.5% max
Silicon	1.2% max	1.5% max
Phosphorus	0.30% max	0.30% max

SILICON CARBIDE

	A	B	C
Silicon Carbide	70% min	88 - 92%	97% min
Carbon	--	1 - 3%	--
R 203	--	3.0% max	--
Size	0 - 10 mm	1 - 10 mm	0 - 10 mm
Packing	bulk	1 MT bag	bulk

FERROMOLYBDENUM

Molybdenum	60 - 65%
Copper	0.05% max
Silicon	1.0% max
Sulfur	0.15% max
Phosphorus	0.05% max
Packing	drum



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Specification Examples, Page 4

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Metals, Alloys & Carbon Raisers

Packing: 50 lb., 25 kg, or 1 MT bag.

FERROSILICON

	75% w/Ca	75% A	75% B
<i>Silicon</i>	74 – 79%	75% min	75% min
<i>Calcium</i>	0.8 – 1.25%	--	--
<i>Aluminum</i>	1.0% max	1.5% max	2.0% max
<i>Iron</i>	balance	balance	balance
<i>Size</i>	3/8" x 8 mesh/	3/8" x 8 mesh/	3/8" x 8 mesh/

FERROVANADIUM

<i>Vanadium</i>	78 – 80% min
<i>Aluminum</i>	4.0% max
<i>Silicon</i>	2.0% max
<i>Carbon</i>	0.2% max
<i>Sulfur</i>	0.1% max
<i>Phosphorus</i>	0.1% max

FLAKE GRAPHITE

	-195	+897
<i>Fixed Carbon</i>	95% min	97% min
<i>Volatile Matter</i>	1.2% max	1.2% max
<i>Moisture</i>	0.5% max	0.5% max
<i>Size</i>	-100 mesh 80% min	+80 mesh 75% min

CARBONIZED RICE HUSK

<i>MELT INSULATOR</i>	
<i>Moisture</i>	5.0% max
<i>Size</i>	8 mm diameter

PELLETIZED CARBON RAISERS

Diameter & length to buyer's specification

Other combinations of these and other materials can be utilized in various ratios to achieve other chemistry and/or characteristics to meet buyer's specifications

<i>Pellet Type</i>	<i>Fixed Carbon</i>	<i>Ash</i>	<i>Sulfur</i>	<i>Vol. Matter</i>	<i>Moisture</i>
Artificial Graphite	98% min	2% max	0.05% max	1% max	1% max
Artificial Graphite	97.5% min	2% max	0.05% max	1% max	1% max
Artificial & Flake Graphite (50%-50%)	96% min	3% max	0.5% max	1.5% max	1% max
Calcined Anthracite & Art. Graphite (50%-50%)	93% min	6% max	0.2% max	3% max	1% max
Amorphous & Artificial Graphite (50%-50%)	93% min	5.5% max	0.1% max	2.5% max	1% max
Amorphous & Artificial Graphite (50%-50%)	91% min	7% max	0.5% max	3% max	1% max



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Specification Examples, Page 5

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Natural Flake (FL) Graphite

Packing: 15kg, 20 kg, or 1 MT bag

Material Size and Pellet or Briquette size to buyer's specification

Products	F.C(Min)	Moisture	Size	Packing
-199(1)	99	0.5	-100 mesh 50% min, -325 mesh 10% max	1MT Spout/Pallet
-199(2)	99	0.5	-100 mesh 50% min, -325 mesh 15% max	1MT Spout/Pallet
-198(1)	98	0.5	-100 mesh 50%min, -325mesh 10% max	1MT Spout/Pallet
-198(2)		0.5	-100mesh 50%min, -325mesh 30-40%max	20Kgs/Pallet
-196	96	0.5	-100 mesh, 80% min	1MT Spout/Pallet
-195	95	0.5	+100 mesh, 20% min	20Kgs/Pallet
-194	94	0.5	+100 mesh, 30% min	20Kgs/Pallet
-194	94	0.5	-325 mesh 20% max, -150 mesh 20% min	1MT Spout/Pallet
-190	90	0.5	-100 mesh, 80% min.	25Kgs/Pallet
-390	90	0.5	-325 mesh, 75-95%	20Kgs/Pallet
7.5 micron	94	0.5	D50-7.5micron	600Kgs/Pallet
5-8 micron	95	0.5	-13 microns 90%, -8microns 50%	15Kgs/Pallet
10-12 micron	95	0.5	-22 microns 90%, -12 microns 50%	15Kgs/Pallet
+898	98	0.5	80% min	1MT Spout/Pallet
+894	94	0.5	50 mesh: 3% min, 80 mesh: 80% min	1MT Spout/Pallet
+595	95	0.5	80% min	1MT Spout/Pallet
8098	98	0.5	+80 mesh, 80% min	15Kgs/Pallet
8097	97	0.5	+80 mesh, 80% min	15Kgs/Pallet
8096	96	0.5	+80 mesh, 80% min	15Kgs/Pallet
8094	94	0.5	50 mesh 3% min, 80 mesh 80% min	1MT Spout/Pallet
5098	98	0.5	+80 mesh, 80% min	15Kgs/Pallet
894/-194	93.5	0.5	+100 mesh 30% min, +140 mesh 65% min	15Kgs/Pallet