



# ***Dalian Sheng Dong Minerals co.,ltd***

***Refractory materials  
Slag conditioner***



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**Contact details :**

Dalian sheng dong minerals co.,ltd  
Address:301,2# ZhongQing building  
Free trade zone,Dalian China  
Website:www.sdminerals.com  
E-mail:sd@sdminerals.com

**Sally**

Msn:sally1212003@yahoo.com.cn  
E-mail:sdminerals@hotmail.com  
Tel :+86-411-87187796  
Fax:+86-411-87187996

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## **1. Introduction to DALIAN SHENGDONG MINERALS CO.,LTD**

Dalian Shengdong Minerals Co., Ltd established in 2004 with HuiDong Warehouse in BaYuQuan and a Shengdong cinder ball factory in DaShiQiao, which is a comprehensive trade company. Her predecessor is Dalian Huilong International Trade Co., Ltd.

It was approved by Dalian Foreign Economical & Trading Commission and General Administration of Customs of Dalian, so that she enjoys the right to do the imports and exports business, and clear customs independently. Our company strictly adheres to the Certificate Quality Management System Certification in every step, we always stick to the principle of client is God as our working wizard. We observe contracts honestly and keep our great anticipation to continue enhancing the cooperation with customers home and abroad to seek mutual development hand in hand.

We sincerely welcome all the clients to joint us for more business opportunities and to share the splendid future together.

## TECHNICAL REPORT

### 2 . Cinder ball



Cinder ball is a new generation of burned material for converter steelmaking and slag making which use the caustic calcined magnesia as raw material ,compressed into ball. Cinder ball used as the main regulator to converter slag and splashing slag. General slag splashing need a certain amount of magnesium-regulated at the same time to replace the use of dolomite,in order to reduce the amount of slag, slag increase in the MgO Content. As fossil MgO has a melting point of

2800 °C, slag in the MgO content will improved the viscosity of the slag change, refractoriness increase, slag more easily combine with the lining and provide an effective protective layer, thereby enhancing lining life span and reduce operational cost . The content can regulate according to the converter of steel plant, smelting type of steel, operating methods and the different of slag components.

Specs	MgO ( % )	CaO(%)	C(%)	SiO <sub>2</sub> (%)	CaF(%)	LOI(%)
Magnesium	≤ 70	≤ 3		≤ 13 ≤ 5		≤ 22
Magnesium-Carbon	≥ 60		≥ 5	≤ 4		≤ 20
Magnesium calcium	≥ 50	≥ 15		≤ 3		
Magnesium fluorite	≤ 40	≤ 3			≤ 50	≤ 5
Modifier	≥ 50	≥ 10	≥ 5	≤ 5		

### 3. Magnesium carbon briquette



The magnesium carbon briquette (also name slag conditioner )is the compound materials which is composed of the calcined burnt magnesite and the anthracite, its chemical constituent is MgO and C, the leading role is slag conditioner to convertor, can reduce the degree of slag, improved the viscosity and refractorinessof the slag , the slag MgO content from 3.0%~4.5% to

8.0~12.0%, provide an effective protective layer, thereby enhancing lining life span Can improved the slag refractoriness, has the capabilities in purification of molten steel and desulfurization, Carbon content can regulate according to the converter of steel plant, smelting type of steel, operating methods and the different of slag components.

Specs	MgO $\geq$ %	C $\geq$ %	CaO $\leq$ %	SiO <sub>2</sub> $\leq$ %	LOI $\leq$ %	Size(mm)
MC-20	50	20	3	6	20	10-40
MC-15	55	15	3	5	25	
MC-10	60	10	3	5	25	

#### **4. Potassium feldspar**



##### **Features :**

**1. Best for Ceramic & Sanitary Ware Manufacturing - Application in both.**

**Glaze ( $K_2O > 11.5\%$ ) & Body ( $K_2O > 10.5\%$ ) - gives White Firing Colour.**

**2. Glass Grades – better fluxing from  $K_2O > 10\%$  ,Alumina  $> 17\%$  for strength low iron  $Fe_2O_3 <$**

**$0.5\%$  .**

**3. High Potash  $K_2O > 11\%$  for Flux coated Welding Electrodes.**

**4. One very good materials for producing potassium fertilizer.**

##### **Standard size:**

- **30-325, 40-80, 80-120, 100, 200, 325(Mesh)**
- **0-5 mm, 5-10mm Grains & Chips and Lumps**

## 5. Dolomite rude ore

Specs	MgO %	SiO <sub>2</sub> %	CaO%	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	LOI%
Dolomite	18-22	≤0.5	28-32	≤0.2	≤0.3	≤48
Dolomite	18-22	≤0.5	26-30	≤0.2	2-4	≤48

### Synthetic magnesia-dolomite sinter

**Production and application :**synthetic magnesia –dolomite sinter is made of good quality caustic- calcined magnesite power by high pressure sintering and fine grinding in UHT converter characterized by high purity,good degree of sintering ,great resistance to slag,hydration and adjustable chemical composition,it's indeed raw materials of high-class magnesia –calcium-carbon brick ,magnesia- dolomite brick,gunning refractory of converter and etc...

Brand	MgO%	CaO%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	LOI %	B.D	Size(mm)
HMCA-20	76-78	19-21	≤0.8	≤0.3	≤1.0	≤0.5	≥3.25	0-30
HMCA-25	71-73	24-26	≤0.8	≤0.3	≤1.0	≤0.5	≥3.25	0-30
HMCA-32	63-65	31-33	≤0.8	≤0.3	≤1.0	≤0.5	≥3.25	0-30
MCA-54	37-39	53-55	≤0.8	≤0.4	5-7	≤0.5	≥3.25	1-7
MCA-55	39-41	55-57	≤0.8	≤0.4	≤0.6	≤0.5	≥3.25	1-7

## 6. Carbon additive

**Carbon additive for steel-smelting :**

carbon additive made from high quality carbon material, after the process of desulfurizing and grain size classification, is a new product for improving technics and steel quality in steel-smelting industry.

**Carbon additive for casting:**

Carbon additive for casting, including normal cast iron, spheroidal graphite iron,

carbon additive has the advantages of increasing the use of waste steel, lower even non-use of the raw iron material, it can be well absorbed in the ironing liquid and no dreg , can cut down cost of casting.

- a. Usage: as carbon additive in special type steel-making and ball iron casting.
- b. Characters: high content of fixed carbon and lower sulfur, efficient and stable carbon additive, high absorbability of carbon.
- c. Available range: various steel foundry, casting.
- d. The size can be offered as customer's request.

Brand	F.C %	S %	ASH %	VM%	H <sub>2</sub> O%	Size(mm)
CA01	99.00	0.30	0.50	0.50	0.50	1-5/5-10
CA02	98.50	0.50	0.80	0.80	0.50	1-5/0-1/0.3-5
CA03	97.00	0.05	1.50	1.50	0.50	0-1
CA04	95.00	0.30	3.50	1.50	0.50	1-4
CA05	80.00	0.10	16.5	3.50	2.0	1-5

## 7. Raw magnesite

The raw materials for producing calcined burnt magnesite and dead burnt magnesite.

Brand	MgO min %	SiO <sub>2</sub> max %	CaO max %
LM43	43	3.5	1.5
LM45	45	1.5	1.5
LM46	46	1.2	0.8
LM47	47	0.6	0.6

## 8. Caustic-calcined magnesite

The caustic calcined magnesite is made from raw magnesite in reverberatory furnace ,rotary kiln and boiling furnace ,this products possess stable quality ,high purity and well -activeness , are widely used in paper making ,chemical industry,refractory materials and building materials industry etc ...

Grade	MgOmin%	SiO <sub>2</sub> max%	CaOmax%	LOImax%	Size
QM95	95	1.0	1.5	2.0	-325mash 95%min passing through 0.3-2mm90%min 0.1-0.8mm90%min Also process as the Requirement of user.
QM94	94	2.0	1.6	3.0	
QM93	93	2.5	1.8	3.5	
QM92	92	3.0	1.8	4.5	
QM91	91	3.5	1.8	5.0	
QM90	90	2.5	2.5	6.0	
QM89	89	3.5	3.5	7.0	
QM87	87	4.5	4.5	7.0	
QM85	85	5	5	7.0	

## 9. Dead burnt magnesite

Dead burnt magnesite is selected from raw magnesite ,it is produced by mine –selecting ,purifying ,calcining in shaft kiln. It is an ideal material for unshaped refractory materials ,the final products are used in open hearth furnace,electric furnace bottom and furnace’s lining tamping.

Grade	MgOmin%	SiO <sub>2</sub> max%	CaOmax%	Fe <sub>2</sub> O <sub>3</sub> max%	Al <sub>2</sub> O <sub>3</sub> max%	LOI <sub>max</sub> %	B.D(g/ccm)min
MS-94	94	3.2	1.2	1.0	1.2	0.3	3.15
MS-93	93	3.5	1.6	1.0	1.2	0.3	3.18
MS-92	92	3.5	1.6	1.0	1.2	0.3	3.18
MS-91	91	4.0	1.6	1.1	1.5	0.3	3.18
MS-90	90	4.5	2.0	1.2	1.5	0.3	3.18
SIZE:0-1mm , 0-3mm ,0-10mm,10-30mm Also process as the requirement of user.							

## 10. Fused magnesite

The materials of fused magnesite is selected from special grade A raw magnesite or high purity caustic calcined magnesite ,which is fused in arc furnace . the products possess high purity,big crxstalline grain and compact texture ,have high slag resistance and good thermal shock resisance,it is used for making high quality magnesite bricks ,magnesite-carbon bricks and unshaped refractory materials.

### Electro-fused Magnesia grains

Brand	MgOmin%	SiO <sub>2</sub> max%	CaOmax%	Fe <sub>2</sub> O <sub>3</sub> max%	Al <sub>2</sub> O <sub>3</sub> max%	LOI <sub>max</sub> %	B.D(g/cm <sup>3</sup> )
FM-98	98.0	0.45	1.20	0.50	0.20	0.20	3.50
FM-97	97.0	0.60	1.60	0.70	0.20	0.20	3.50
FM-96	96.0	0.80	2.00	0.90	0.20	0.20	3.45

All kind of goods with better quality are all available to you.

Brand	MgOmin%	SiO <sub>2</sub> max %	CaOmax%	Fe <sub>2</sub> O <sub>3</sub> max %	Al <sub>2</sub> O <sub>3</sub> max%	LOI <sub>max</sub> %	B.D(g/cm <sup>3</sup> )
FM-99	99	0.20	0.70	0.25	0.10	0.10	3.50
FM-98.5	98.5	0.35	0.85	0.35	0.15	0.15	3.50
FM-98	98	0.40	1.20	0.45	0.20	0.20	3.50
FM-97.5	97.5	0.50	1.40	0.60	0.20	0.20	3.50
FM-97	97	0.65	1.60	0.65	0.20	0.20	3.45
FM-96	96	1.00	2.00	0.80	0.25	0.30	
FM-95	95	1.20	2.50	1.90	0.30	0.40	

## 11. Calcite(Calcium carbonate of heavy quality)

The calcium carbonate of heavy quality is made from calcite by simple machine ,it has high purity and white .Used in hard moulding, synthetic leather, recycled glue, papermaking, paint, sealing strip, coating, fodder, toothpaste mainly, product of rubber and plastic etc. industrial departments. calcite (calcium carbonate of heavy quality) make to change performance, mend strongly, pack and increase the content of calcium, reduction of costs etc...

Brand Specification	CaCO <sub>3</sub> min %	SiO <sub>2</sub> max %	Fe <sub>2</sub> O <sub>3</sub> max %	MgO max %	Al <sub>2</sub> O <sub>3</sub> max %	H <sub>2</sub> O max %
	97.5%	0.60%	0.04	0.88	0.20%	0.20%

## 12. Brucite

Functional flame –retarded filler ,welding electrodes coating ,artificial fiber ,rubber ,plastic and glass fiber reinforced plastic ,padding reforming agent ,sewage treatment agent and devulcanizing agent from dust etc ...

Specs	MgO min %	Fe <sub>2</sub> O <sub>3</sub> max %	SiO <sub>2</sub> max %	CaO max %	Al <sub>2</sub> O <sub>3</sub> max %	H <sub>2</sub> O max %
COMMON	63	0.4	3	2.5	0.20	27-31
SUPER GRADE	65	0.3	2.5	1.5	0.20	28-31

## 13. Olivine

Specification/Designation		Olivine sand	Calcined Olivine
Chemical Compositions%	MgO%	40-45	46-50
	SiO <sub>2</sub> %	33-37	38-42
	CaO%	<2	<2
	Al <sub>2</sub> O <sub>3</sub> %	<2	<2
	Fe <sub>2</sub> O <sub>3</sub> %	6-9	6-9
Physical Data	LOI%	9-11	<1
	Density g/cm <sup>3</sup>	2.8	2.5
	M-hardness	5.5	4.5