



## ABOUT LAVA

Based in Dalian, China P.R., which is located in the center of North China, famous for its heavy industry, particularly in CERAMIC & REFRACTORIES manufacturing. Keeping the concept "Make Energy Efficiency Simpler" in mind, striving to be the most reliable supplier in REFRACTORY and INSULATION material industry worldwide, years of non-stop innovation

and team-working transformed us to be now a leading supplier of refractory and insulating materials in this field.

LAVA committed to developing and manufacturing high quality products for its customer. Customers accept our products at first, then gradually getting fond of them, and finally they find that they have already relied on

them. Up to now, we have established cooperative relationships with many Giant Companies in refractory field.

We are continue to serve all of our customers with best products and services. We are always on the road and never stop!



# FIRED MAG BRICKS

LAVA supplying a comprehensive range of FIRED MAG BRICKS.

The fired magnesia brick has high load softening temperature and strong resistance to alkaline slag erosion. The fired magnesia bricks are mainly used for the lining of basic open hearth, wall and bottom of electric furnace, permanent lining of oxygen converter, mixer, non-ferrous smelting furnace, high temperature tunnel kiln, lining of rotary kiln for calcining magnesia and cement, upper lattice bricks of glass melting furnace, bottom and end of steel rolling soaking furnace and heating furnace.

### Applications

- Iron Steel Industry  
Steelmaking furnace lining, ferroalloy furnace, metal mixer furnace lining, converter lining, arc furnace wall and furnace bottom, soaking furnace, heating furnace bottom
- Non-ferrous metallurgical industry  
Copper, nickel, lead, zinc, tin smelting furnace lining, refined copper reverberatory furnace, ore electric furnace lining
- Glass Industry  
Glass furnace regenerator checker
- Building Material Industry  
Lime kiln, cement kiln
- Refractory Material Industry  
High temperature calcination kiln, shaft kiln and tunnel kiln

## Product Data

Type	MZ-97A	MZ-97B	MZ-95A	MZ-95B	MZ-93	MZ-91
MgO (%)»	97	96.5	95	94.5	93	91
SiO <sub>2</sub> (%)«	1.0	2.0	2.0	2.0	3.5	-
CaO (%)«	-	-	2.0	2.0	2.0	3.0
Apparent Porosity (%)«	16	18	16	18	18	18
Cold Crushing Strength (MPa)»	60		60	60	60	60
Refractoriness Under Load 0.2MPa°C»	1700		1650	1620	1620	1560
Reheat Test, Permanent Linear Change After Heating At (1650°C, 2h)%	0~ -0.2		0~ -0.3	0~ -0.4	0~ -0.4	0~ -0.4

# MAG CHROME BRICKS

LAVA supplying a comprehensive range of Magnesite Chrome Brick, Mag Chrome Brick is mainly used in metallurgical industry, such as for building open-hearth furnace top, electric furnace top, finery out of furnace and all kinds of non-ferrous metal metallurgy furnace. Fused cast magnesite chrome brick is adopted for high temperature position of furnace wall in electric furnace with ultra high power. Magnesite chrome brick that made of synthetic compost is adopted for strong erosion area in finery out of furnace. Fused cast magnesite chrome brick or magnesite chrome brick that made of synthetic compost is adopted for strong erosion area of nonferrous metals flash smelting furnace. Besides, Magnesite Chrome Brick also can be used for burning zone in rotary cement kiln and regenerative chamber in glass furnace.

## Key Features for Mag Chrome Brick

- High Refractoriness
- High Temperature Strength
- Strong Basic Slag Erosion Resistance
- Good Thermal Shock Resistance
- Certain Resistance to Acid Slag
- Good Refractoriness
- Good Corrosion Resistance e.g. Basic Steelmaking Slags, Sodium Hydroxide, Fe, Co, Ni
- Low Electrical Conductivity
- Transparency to Infrared

## Product Data

Index	Magnesite-Chrome Brick		Directed Bonded Magnesite-Chrome Brick								Semi-Rebonded Magnesite-Chrome Brick					
			DMC-B				DMC-C									
	MGe-20	MGe-16	MGe-12	DMC12B	DMC9B	DMC6B	DMC4B	DMC20C	DMC18C	DMC16C	DMC12C	ZMC-35	ZMC-28	ZMC-20	ZMC-18	ZMC-15
MgO%	≥40	≥50	≥60	≥65	≥75	≥80	≥82	≥55	≥60	≥65	≥70	≥50	≥55	≥55	≥66	≥60
Cr <sub>2</sub> O <sub>3</sub> %	≥20	≥16	≥12	≥12	≥9	≥6	≥4	≥20	≥18	≥16	≥12	35-37	28-30	20-22	18-20	15-18
SiO <sub>2</sub>	-	-	-	≤2.0	≤1.8	≤1.5	≤1.5	≤2.5	≤2.4	≤2.4	≤2.0	-	-	-	-	-
Refractoriness Under Load 0.2MPa°C	≥1700	≥1650	≥1580	1680	1680	1650	1650	1700	1700	1700	1680	1700	1700	1700	1700	1700
Apparent Porosity%	≤18	≤18	≤18	≤18	≤18	≤17	≤17	≤18	≤18	≤18	≤18	≤16	≤16	≤16	≤16	≤16
Cold Crushing Strength Mpa	≥40	≥40	≥40	≥40	≥40	≥40	≥40	≥40	≥40	≥40	≥40	≥45	≥45	≥45	≥40	≥40
Bulk Density(Kg/m <sup>3</sup> )				3050	3050	3000	3000	3150	3100	3050	3000	3350	3250	3200	3100	3050
Thermal Shock Resistance [950°C Air Cooling ]	-	-	-	60	60	60	60	60	60	60	60	40	40	40	40	40

# MAG CARBON BRICKS

LAVA supplying a comprehensive range of Magnesite Carbon Bricks, Magnesite Carbon Bricks have been used in the slag line of refining ladle, and good results have been achieved. Magnesite carbon bricks are also used for the lining part of AC arc furnace, DC electrical arc furnace, converter and other parts.

## Key Features for Magnesite Carbon Bricks

- Good high-temperature performance.
- Strong slag resistance.
- Good thermal shock resistance.
- Low creep at high temperature.
- Good anti-stripping ability.
- Anti-stripping performance.
- Good wear resistance.
- Good thermal conductivity.



## Product Data

Type	MT10A	MT10B	MT10C	MT14A	MT14B	MT14C	MT18A	MT18B	MT18C
MgO(%) ≥	80	78	76	76	74	74	72	70	70
C(%) ≥	10	10	10	14	14	14	18	18	18
Apparent Porosity (%) ≤	4	5	6	4	5	6	3	4	5
Bulk Density (kg/m <sup>3</sup> ) ≥	2900	2850	2800	2900	2820	2770	2900	2800	2770
Cold Crushing Strength (MPa) ≥	40	35	30	40	35	25	40	35	25
Rupture Strength (Mpa) ≥	6	5	4	10	8	5	9	7	4



## MAG CALCIUM BRICKS

LAVA supplying a comprehensive range of Mag Calcium Brick (Dolomite Brick).  
Mag Calcium Brick is mainly used as lining material for AOD furnace, VOD furnace and LF furnace in steel making industry.

Key Features for Mag Calcium Bricks

- Excellent thermal shock stability
- Good resistance to structural spalling
- Strong resistance to slag penetration
- Clean the molten steel

LAVA supplying a comprehensive range of Magnesite Spinel Bricks are mainly used in non-ferrous smelting, transition zone before and after cement rotary kiln, high temperature zone of lime kiln, glass heat-accumulated type, top of reverberatory furnace, etc.

## MAG SPINEL BRICKS

Key Features for Magnesite Spinel Bricks

- Good thermal shock stability
- High temperature mechanical strength
- High softening temperature under load
- Good slag resistance and alkali salt resistance



### Product Data

Type	Magnesite-Alumina Spinel Brick			Magnesite-Ferrum Spinel Brick	
	MA-5	MA-10	MA-15	MF-80	MF-75
MgO	≥85	≥80	≥80	≥84	≥80
Al <sub>2</sub> O <sub>3</sub>	5-7	8-10	15-17	≤2.5	≤2.5
Fe <sub>2</sub> O <sub>3</sub>	-	-	-	6.3	4.4
Cr <sub>2</sub> O <sub>3</sub>	-	-	-	≥3.6	≥3.5
Apparent Porosity%	≤18	≤18	≤17	≥17	≥17
Bulk Density (Kg/m <sup>3</sup> )	≥2900	≥2900	≥2900	≥2980	≥3050
Refractoriness Under Load 0.2Mpa°C	≥1620	≥1650	≥1650	1650	1570
Cold Crushing Strength Mpa	≥40	≥40	≥40	≥45	≥45
Thermal Shock Resistance [1100°C Water Cooling, Times]	≥6	≥8	≥10	≥4	≥4

### Product Data

Type	LKMG15	LKMG20	LKMG25	LKMG30	LKMG40	LKMG50
MgO(%)	80.3	76.3	70.3	66.3	56.3	43.3
CaO(%)	17	21	27	31	41.0	54
Al <sub>2</sub> O <sub>3</sub> (%)	0.5	0.5	0.5	0.5	0.5	0.5
Fe <sub>2</sub> O <sub>3</sub> (%)	0.7	0.7	0.7	0.7	0.7	0.7
SiO <sub>2</sub> (%)	1.3	1.3	1.3	1.3	1.2	1.3
Bulk Density(Kg/m <sup>3</sup> )	3030	3030	3030	3030	3000	2930
Apparent Porosity%	13	12	12	13	13	12
Cold Crushing Strength (MPa)	80	90	80	80	80	70
Refractoriness Under Load 0.2MPa°C	1700	1700	1700	1700	1700	1700
Rupture Strength (Mpa)	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5	2.5-4.5
Reheat test, Permanent Linear Change (%)	-	- 0.35	-	- 0.61	-	-
Thermal Conductivity(W/m.k) <sup>-1</sup>	3-4	3-4	3-4	3-4	3-4	3-4
Thermal Expansion (%)	800°C	0.8-1.0	0.8-1.0	0.8-1.0	0.8-1.0	0.8-1.0
	1200°C	13.5-1.6	13.5-1.6	13.5-1.6	13.5-1.6	13.5-1.6
	1200°C	1.8-2.0	1.8-2.0	1.8-2.0	1.8-2.0	1.8-2.0