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Raw Materials of CaSi Production

CaSi alloy and chemical compositions

	chemical compositions/%					
	Ca		C	Al	P	S
	⩾		⩽			
Ca31Si60	31	55～65	1.0	2.4	0.04	0.05
Ca28Si60	28	55～65	1.0	2.4	0.04	0.05
Ca24Si60	24	55～65	1.0	2.5	0.04	0.04
Ca20Si55	20	50～60	1.0	2.5	0.04	0.04
Ca16Si55	16	50～60	1.0	2.5	0.04	0.04

1. Raw materials

Raw materials are quartz, lime, coke, wooden chips (or charcoal) and anthracite.

Quartz: SiO2＞98%, Al2O3+Fe2O3＜1, lower impurities, without any clay or impurities in the surface, Water absorption rate＜5, size 30～60mm;

Lime: CaO＞85%, Al2O3＜0.5%, Fe2O3＜0.3%, size 10～15mm;

Coke: fixed carbon＞80%, ash＜15%, size 10～15mm, powder percentage＜10%;

Charcoal: fixed carbon＞75%, ash＜2%, Volatile＜20%, moisture＜10%, size 20～80mm;

Wooden chips: common pine hard wood, no bark, with 20mm thickness, no longer than 200mm;

Anthracite: ash＜8%, moisture＜10%, no impurities, good sintering performance, size0～13mm.

2. Materials consumption

CaSi alloy:Ca31%，Si60%

No.	Item	Unit	Qty
1	Quartz	t/a	2
2	Lime	t/a	1.5
2.1	Coke	kg/t	107
2.2	Semi-coke	kg/t	405
2.3	Anthracite	kg/t	540
2.4	Steel	kg/t	40
2.5	Electrode paste	kg/t	107
2.6	Refractory materials	kg/t	21
2.7	Fluorite	kg/t	14
2.8	Electrode shell	kg/t	1
2.9	Power cost	kW·h/t	10,357
2.10	Water cost	m^3/t	5