Special Refractories for Carbon Black Reactor

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Special refractories used for carbon black reactors require very high refractoriness and excellent resistance to thermal spalling.

▸ **High refractoriness**

- Used purity over 99.7% fused alumina and purity over 99.5% chrome refractories to minimize impurity, then can get a high temperature melting point.

▸ **Abrasion resistance**

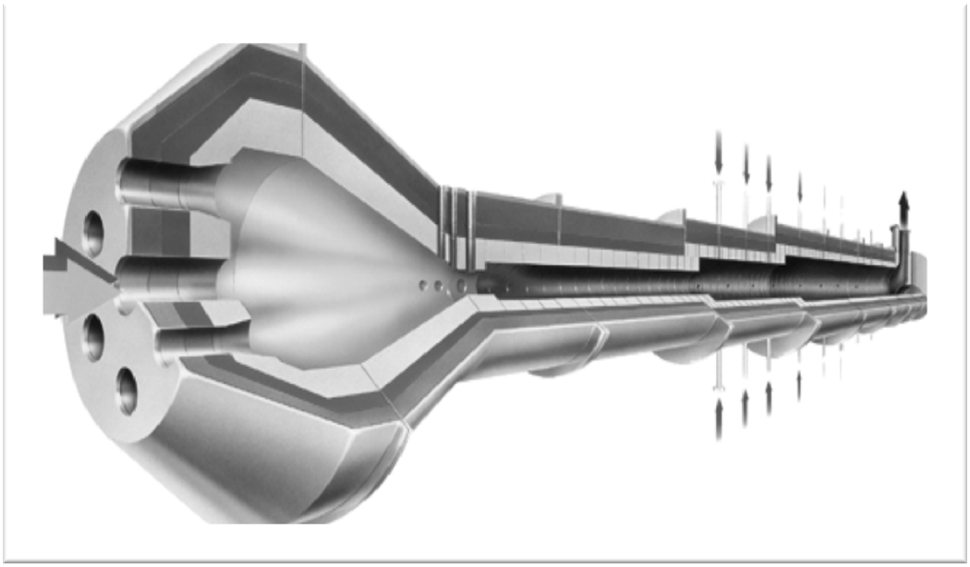
- High strength through sintering in excess of 1750℃ under ultra-high temperature

▸ **Densification**

- Porosity reduction by densification of gradation and sintering under high temperature.
- Protect permeation of alkali and SiO_2 as ash through low pores

▸ **Stability of volume expansion**

- A good stability of volume expansion under high working temperature by using raw materials of high purity
- Contraction prevention under working temperature by pre-heat treatment



Technical Data		GCB-86	
ITEMS		SPEC	TYPICAL
Refractoriness (SK)		42	
Bulk Density (g /cm³)		≥ 3.20	3.34
Porosity (%)		≤ 18.0	16.0
Cold Crushing Strength (MPa)		≥ 80	105
Chemical Composition (%)	Al_2O_3	≥ 83	88.0
	SiO_2	≤ 1.0	0.2
	Cr_2O_3	≥ 10.0	11.2

Technical Data		GCB-85	
ITEMS		SPEC	TYPIAL
Refractoriness (SK)		42	
Bulk Density (g /cm³)		≥ 3.15	3.30
Porosity (%)		≤ 18.0	15.5
Cold Crushing Strength (MPa)		≥ 80	100
Chemical Composition (%)	Al_2O_3	≥ 83.0	88.3
	SiO_2	≤ 2.0	1.2
	Cr_2O_3	≥ 8.0	10.0

Technical Data		GCB-80C	
ITEMS		**SPEC**	**TYPICAL**
Max. Service Temperature (℃)		2,100	
Bulk Density (110℃×24hrs, g/cm³)		≥ 3.05	3.15
Permanent Linear Change (@1,500℃×3hrs,%)		≤ ±0.3	+0.08
Cold Crushing Strength (MPa)	**110℃×24hrs**	≥ 40 / ≥ 4	45 / 5
	1350℃×3hrs	≥ 70 / ≥ 7	85 / 9
	1500℃×3hrs	≥ 90 / ≥ 15	105 / 17
Chemical Composition (%)	**Al_2O_3**	≥ 80	85.2
	SiO_2	-	0.6
	Cr_2O_3	≤ 12	10.0
Water Addition (wt, %)		5 ~ 6	
Installation Method		Vibration Installation	