HIC®

HITEMP INDUSTRIAL CERAMICS

High Temperature Ceramic, Alumina Ceramics

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COMPANY PROFILE

Hitemp Industrial Ceramics Started in 2021 is an expansion plan of Hitemp Ceramics Industries (1972).We at hitemp are serving wide varities of industries & research establishments incorporating new techniques to meet international standards. We have a team of dedicated Engineers for R&D to improve upon products, develop new products & to meet out commited delivery schedules . Under one single roof we are providing best ceramics & refractories. Besides this we also provide technical support & solutions to our customers.

Hitemp has many in-house manufacturering facilities like:

» Slip Casting
» Vacuum Extrusion
» Tabletting Press
» Mechanical Pressing
» Hydraulic Pressing
» Pneumatic and Vibratory Press
» Green Machining

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HIC®

OUR PRODUCT RANGE

- Laboratory Ceramic Products
- Ceramic Furnace Supports
- Laboratory Furnace Parts
- Thermocouple Tubes, Beads & Sheaths
- Kiln Furniture
- Super Refactory Shapes
- Wear Resistant Ceramics
- Grinding Media

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Laboratory Ceramic Products

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COMBUSTION BOATS

Hitemp Combustion Boats are used in the estimation of carbon in steel samples. The sample of steel drilling is taken in a combustion boat and placed inside a tube furnace maintained at 1300 deg to 1400 deg & oxygen is passed over it which combines with carbon of the steel & CO2 is estimated. Propirties of combustion Boats are High thermal shock resistance, High softening temperature & high resistance to corrosive action to molten steel. Combustion boats are made either by slipcasting in plaster of paris moulds or by mechanical pressing.

COMBUSTION TUBES

Hitemp Combustion tubes are used in the Strohline apparatus for carbon & sulphur estimanition . Combustion boat carriying sample of steel is pushed in this tube .one end of Combustion tube is connected to the strohline appatatus & the other end is connected to the oxygen cylinder through a rubber tubing. essential properties of combustion tubes are High thermal shock resistance, High softening temperature & are highly impervious. Combustion Tubes are made either by slip casting in plaster of paris moulds or by extrusion.

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Laboratory Ceramic Products

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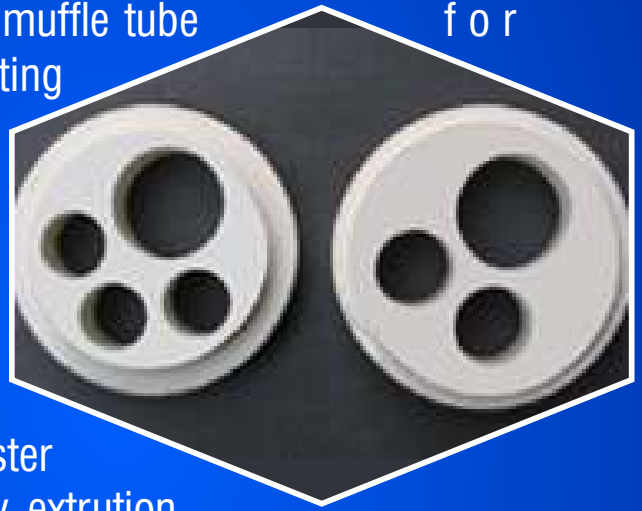
MUFFLE TUBE & END CAP

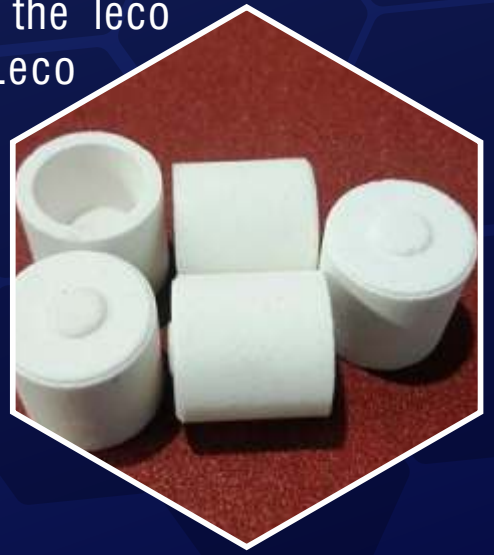
Hitemp Muffle tube is an integral part of combustion furnace used in strohline apparatus. Two end caps are fitted on each side of muffle tube for holding the SIC Heating elements & Combustion tube. There is a centre hole in muffle tube to insert thermocouple. Muffle tubes are made either by slip casting in plaster of paris moulds or by extrution.



Where as End caps are made by die pressing. End caps are available with 3 & 4 holes. Hitemp end caps have a special groove to clamp it to the furnace body, This Groove isolates the clamps from SiC Rods also.

LECO CRUCIBLES

Leco Crucibles are used in the estimation of carbon in steel samples. The sample of steel is taken in a leco crucible and placed inside the leco apparatus. Properties of Leco crucible are High thermal shock resistance, High softening temperature & high resistance to corrosive action to molten steel. Leco crucible are made by mechanical pressing.



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Laboratory Ceramic Products

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☞ SILLIMANITE & ALUMINA CRUCIBLES

Crucibles are fabricated by slip casting method .They are highly refractory to withstand desired temperatures ,They posses high thermal shock resistance. These are highly dense to ensure no loss of contents by absorption & are highly resistant to corrosive action of the contents. Used is Laboratories for Chemical Analysis & melting of glass & metals in industries. Alumina crucibles are used for coal analysis & melting rare metals & high melting point alloys. Alumina crucibles are highly resistant to acid & basic slag.

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Ceramic Furnace Supports

ELEMENT SUPPORTING TUBES/ ROUND MUFFLES

Hitemp Element supporting tubes are used for supporting coiled shaped heating elements made out of Kanthal / Nicrome wire used in resistance wire furnace. These tubes have high softening temperature & excellent thermal shock resistance. Hitemp has mastered different compositions to meet out typical air quenching requirements also. These tubes are available in standard diameter with length upto 1800mm.

Element-Carrying Tubes(Length upto 1800 mm)							
OD	12	15	20	22	24	29	32
ID	6	8	12	15	15	20	20

Round Muffles (Length upto 1500 mm)									
OD	35	40	44	48	58	62	68	75	85
ID	28	32	37	40	50	56	58	65	75

TUBE HOLDING BRICKS/ ELEMENT HOLDING BRICKS

Tube holding bricks are used to support the element supporting tubes where as element holding bricks carry the elements directly in their grooves.

GAS PASSING TUBES

Hitemp gas passing tubes are used to carry different gases to maintain atmosphere in the furnace . These are also used to provide stirring in the molten noble metals in addition to the desired inert atmosphere.

CUP LOCKS, BOBBINS, WASHERS

These are used for holding the ceramic blankets in place. These products have high mechanical strength as well as high thermal shock resistance

Ceramic Furnace Supports

COLLAR TUBES/ COLLAR BUSHES

Hitemp Collar Tubes are used for taking out the electrical terminals from the furnace & to help
insulate the structure from the electric current , these tubes are not subjected to the peak furnace temperature yet these must be strong enough & do not get broken.

MULTI HOLE DISC

Hitemp Multi hole disc are used in the radiant metallic heaters to insulate elements from the metal tubes. These Disc have high mechanical strength as well as high thermal shock resistance.

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Laboratory Furnace Parts

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MUFFLES

Muffles are mainly used in muffle furnaces where heating elements made out of kanthal / Nircrome wires wrapped round the muffles generally in the form of coils & inside these muffles objects are kept for heating either for laboratory or industrial purposes. these muffles are made in different Square/ rectangular dimensions . Hitemp Muffles are thin walled for quicker heating. These are robust in constructions Highly thermal shock resistant.

GROOVED REFRACTORIES

Grooved refractories are mainly used in High temperature muffle furnaces. The heating coils made out of kanthal / Nircrome wire coils in U Shapes are placed in the groove of the refractories. Higher temperature in these furnaces is achieved as objects are heated directly by radiation . Hitemp Grooved refractories are thin walled & light weight for faster heating . By using Hitemp Grooved refractories peak temperature is attained in almost 1/4th the time as compared to conventional grooved refractories available in the market.These are robust in constructions Highly thermal shock resistant.

BUNSEN BURNER CRUCIBLES

Hitemp Bunsen burner crucibles are used to support heating element on the outer side of their conical structure & inside provides sufficient space for keeping small samples or test tubes

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Thermocouple Tubes, Beads & Sheaths

THERMOCOUPLE SHEATHS

Hitemp thermocouple sheaths are used as protective covering over sensing elements. So that the elements are protected from the injurious effects of the furnace atmosphere. These thermocouple sheaths are manufactured either by slip casting or by extrution. Vacuum Extruded thermocouple sheaths are dense & highly impervious & give better life compared to conventional slip casted ones .

Thermocouple Sheaths (Length upto 1500 mm)								
OD	10	12	15	20	22	24	29	32
ID	7	8	11	15	17	19	22	25

Click for More Details : https://www.hitempceramics.in/thermocouple_beads_sheaths_tubes.html

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Thermocouple Tubes, Beads & Sheaths

THERMOCOUPLE BEADS

Hitemp thermo couple beads are used to provide electrical insulation to the couple which is used for sensing the temperature inside the furnace. These are single, twin , Four hole bore . These are generally used in small lengths of 25mm. However longer lengths are sometime preferred in critical applications.

Single Hole Sleeves (Length upto 1500 mm)					
OD	3.5	4.6	5.3	6.0	8.5
Bore	1.0	2.8	3.0	4.0	4.5
Suitable for SWG	22	14	13	10	9

Twin Hole Sleeves (Length upto 1500 mm)											
OD	3.5	4.0	5.0	5.5	6.5	7.1	8.3	9.0	11.0	12.0	13.5
Bore	0.8	1.0	1.2	1.5	1.7	1.9	2.8	2.5	3.3	3.8	4.5
Suitable for SWG	25	22	20	18	17	16	14	14	12	11	10

Four Hole Sleeves (Length upto 1500 mm)						
OD	3.6	5.5	7.2	8.5	8.5	11.0
Bore	0.8	1.1	1.4	1.3	1.7	2.4
Suitable for SWG	25	20	18	19	17	14

Alumina Ceramics		
	HIC 60	HIC 99
AL203 Min	60	99
Sio3 Max	35	0.20
Fe2O3 Max	0.50	-
Na2O Max	1	0.20
Sp.Gr. – gms/cc	2.80	3.90
Prosity	0	0
Max.Service Temp $-^{0}$ C	1450	1800
Gas Permeability	Nil	Nil
Hardness R45N	68	83

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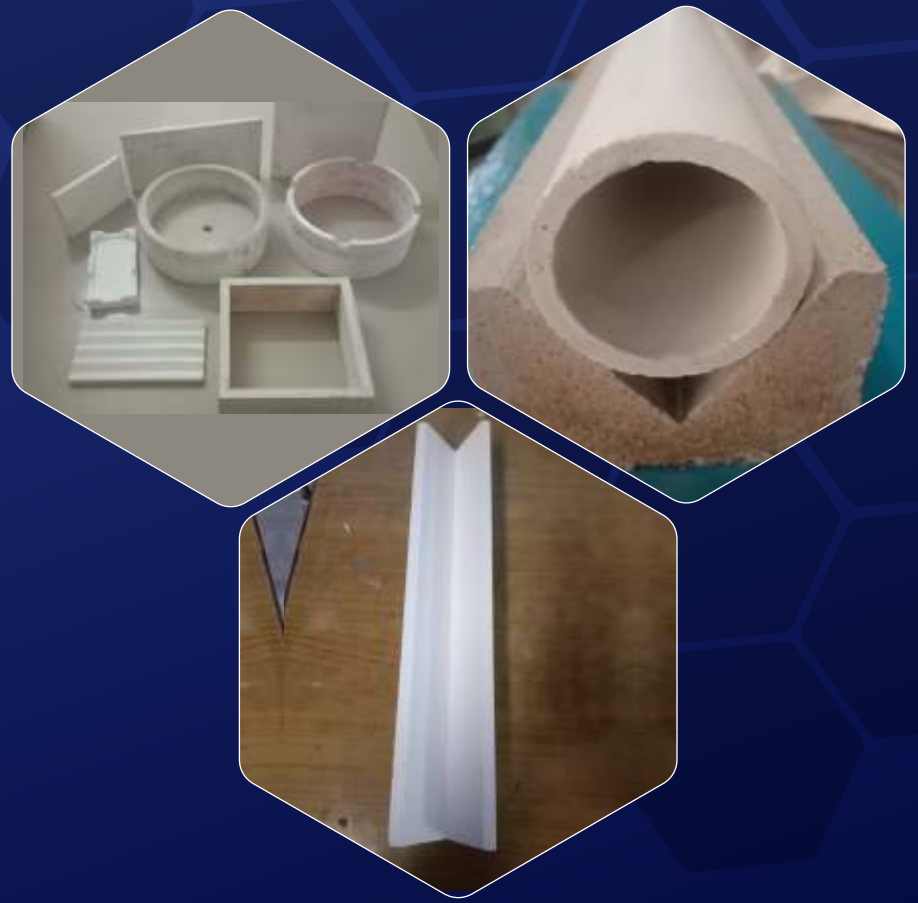
Kiln Furniture

KILN FURNITURE

These are used for holding the material to be heated & to optimise the furnace loading . These have high thermal shock resistance , high Refractoriness under load, High Cold Crushing strength & repeated heating & cooling Cycles. At Hitemp we are manufacturing Mullite & Alumina Kiln Furniture.



SUPER REFRACTORIES

Hitemp insulation refractories are meant for applications where high mechanical stability and insulating properties are required. Hitemp refractories are best suited for insulation of kilns and furnaces, both as hot face and back up linings. Hitemp refractories can be used for applications upto 1850 deg. The HB201, HB101bubble alumina range of insulating refractories is light weight, has good load bearing capacity and low heat capacity. They can be directly exposed to flame

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Kiln Furniture

Mulite Refractories		
Properties	**Unit**	**HWHF**
Max hot face temp	Deg C	1700
Bulk Density	g / cc	2.65
Apparent Porosity		17.5
Cold Crushing Strength	Kg / cm2	1000
MOR	at Room Temp	175
MOR	at 1350	100
Reheat Change	% at1450 deg / 6Hrs	+/- 0.1
Thermal Conductivity	% W / m deg K	
	At 800 deg	1.68
	At 1000 deg	1.61
	At 1200 deg	0.60
Chemical analysis	AL2O3 Min	77.42
	Sio2 Max	21.01
	Fe2O3 Max	0.19

Super Refractory Shapes

Specifications				
Properties	**Unit**	**132**	**HB201**	**HB101**
Max Hot Face Temp	Deg C Max	1700	1750	1800
>Bulk Density	g/cc Max	1.37	1.48	1.52
Apparent Porosity	Min	50	45	45
Cold Crushing Strength	Kg/cm2 Min	35	90	60
Reheat Change	At 1450 deg / 24 Hrs Max	+/-0.65	+0.65 at 1650	+0.41
Thermal Conductivity	Maximum			
	W/mdeg K at 400 deg 0.28	0.70	1.60	1.60
	At 600 deg	0.70	1.60	1.55
	At 800 deg	0.55	1.50	1.30
	At 1000 deg	0.65	1.30	1.30
	At 1200 deg	0.70	1.30	1.30
Chemical Analysis	Al2O3 Min	72	90	98
	Sio2 Max	24	9	1
	Fe2O3 Max	0.5	0.3	0.2

DESIGNED BY
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