

STATE REVIEWS



Indian Minerals Yearbook 2012

(Part- I)

51st Edition

STATE REVIEWS
(Gujarat)

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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GUJARAT

Mineral Resources

Gujarat is the sole producer of agate, chalk, perlite and is the principal producer of fluorite (conc.), kaoline, silica sand, lignite, laterite, petroleum & natural gas and marl in the country. The State is the sole holder of the country's perlite resources and is said to possess 66% fluorite, 28% diatomite, 24% bentonite, 18% granite and 12% wollastonite.

The important mineral occurrences in the State are: **agate** found in Deccan Trap flows in Bharuch district; **bauxite** in Amreli, Bhavnagar, Jamnagar, Junagadh, Kheda, Kachchh, Porbandar, Sabarkantha and Valsad districts; **ball clay** in Banaskantha, Bharuch, Kachchh and Patan districts; **bentonite** in Amreli, Bhavnagar, Jamnagar, Kachchh and Sabarkantha districts; **china clay** in Amreli, Banaskantha, Bhavnagar, Jamnagar, Junagadh, Kachchh, Mahesana and Sabarkantha districts; **chalk** in Porbandar district; **diatomite** in Bhavnagar district; **dolomite** in Bhavnagar and Vadodara districts; **fireclay** in Bharuch, Kachchh, Mehsana, Rajkot, Sabarkantha, Surat and Surendranagar districts; **fluorite** in Vadodara and Bharuch districts; **fuller's earth** in Bhavnagar and Kachchh districts; **gypsum** in Bhavnagar, Jamnagar, Junagadh, Kachchh and Surendranagar districts; **lignite** in Bharuch, Bhavnagar, Kachchh and Surat districts; **limestone** in Amreli, Banaskantha, Bharuch, Bhavnagar, Jamnagar, Junagadh, Kheda, Kachchh, Panchmahals, Porbandar, Rajkot, Sabarkantha, Surat, Vadodara and Valsad districts; **ochre** in Banaskantha, Bhavnagar and Kachchh districts; **perlite** in Rajkot district; **petroleum and natural**

gas in oil fields of Ankaleshwar, Kalol, Navgam, Balol and Cambay in Cambay onshore and offshore basins; **quartz/silica sand** in Bharuch, Bhavnagar, Dahod, Kheda, Kachchh, Panchmahals, Rajkot, Sabarkantha, Surat, Surendranagar, Vadodara and Valsad districts; and **talcs/soapstone/steatite** in Sabarkantha district.

Other minerals that occur in the State are **apatite** and **rock phosphate** in Panchmahals district; **calcite** in Amreli and Bharuch districts; **copper ore** in Banaskantha district; **granite** in Banaskantha, Mahesana and Sabarkantha districts; **graphite** in Panchmahals district; **lead-zinc** and **marble** in Banaskantha and Vadodara districts; **manganese ore** in Panchmahals and Vadodara districts; **vermiculite** in Vadodara district; and **wollastonite** in Banaskantha district (Table - 1). The lignite resources are located in Bharuch, Bhavnagar, Kachchh and Surat districts (Table - 2).

Exploration & Development

The details of exploration activities conducted by various agencies for the exploration of lignite and other minerals during 2011-12 are furnished in (Table - 3).

ONGC discovered one new gas field and four new oil prospects during 2011-12. The gas field name is UBER-2 (UBAC) in UBER-2 (UBAC) structure in District Bharuch. Four oil prospects, namely Viraj-58 (VJEP) in Viraj-58 (VJEP) structure and North Kadi-461 (NKPI) in North kadi-461 (NKPI) structure, NK-472 in North kadi-472 structure, District Mehsana and East Linch in East Linch (LNBU) structure in District Gandhinagar. Details of exploration activities conducted by ONGC during 2011-12 are furnished in Table - 4.

Table – 2 : Reserves/Resources of Lignite as on 1.4.2012 : Gujarat

(In million tonnes)

District	Proved	Indicated	Inferred	Total
Total	1278.65	283.70	1159.70	2722.05
Bharuch	724.76	118.59	491.23	1334.58
Bhavnagar	-	-	299.17	299.17
Kachchh	335.61	565.40	33.09	425.10
Surat	218.28	108.71	336.24	669.20

Source: Coal Directory of India, 2011-12.

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Table – 1 : Reserves/Resources of Minerals as on 1.4.2010 : Gujarat

Mineral	Unit	Reserves				Remaining resources				Total resources (A+B)				
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331		Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)
			STD121	STD122			STD221	STD222						
Apatite	tonne	-	-	-	-	-	-	-	-	-	351000	351000	351000	
Ball clay	tonne	-	-	-	-	-	-	249810	-	49670	-	299480	299480	
Bauxite	'000 tonnes	98794	4560	10407	113761	3359	20295	26593	22107	48019	-	122959	236720	
Bentonite	tonne	-	-	12460170	12460170	-	-	2163813	1904	119553173	-	121718890	134179060	
Calcite	tonne	-	-	-	-	-	-	-	-	12380	-	12380	12380	
Chalk	'000 tonnes	3266	528	4332	4332	184	5	-	-	269	-	585	4917	
China clay	'000 tonnes	34290	240	6232	40763	4654	856	-	878	40904	-	71425	112188	
Copper														
Ore	'000 tonnes	-	4955	845	5800	-	-	129	-	7131	-	7260	13060	
Metal	'000 tonnes	-	80.75	13.78	94.53	-	-	0.69	-	113.38	-	114.07	208.60	
Diatomite	'000 tonnes	-	-	-	-	-	-	-	-	811	-	811	811	
Dolomite	'000 tonnes	20130	1962	9803	31895	9556	26745	20263	63780	295948	-	493578	525473	
Fireclay	'000 tonnes	276	29	132	437	1175	635	638	962	53526	-	57859	58295	
Fluorite	tonne	4280000	-	-	4280000	-	-	-	5723360	2001920	-	7725280	12005280	
Granite	(Dim. stone)	'000 cu m	-	-	-	-	-	-	-	8501947	-	8501947	8501947	
Graphite	tonne	-	-	-	-	-	-	-	2520805	835000	-	3355805	3355805	
Gypsum	'000 tonnes	9	5	24	37	-	-	-	-	15138	-	15138	15175	
Laterite	'000 tonnes	9406	-	164	9570	-	-	-	-	-	-	-	9570	
Lead-zinc														
Ore	'000 tonnes	-	4955	845	5800	-	-	129	-	200	-	329	6129	
Lead metal	'000 tonnes	-	104.37	17.81	122.18	-	-	3.90	-	-	-	3.90	126.08	
Zinc metal	'000 tonnes	-	224.04	39.37	263.41	-	-	1.10	-	-	-	1.10	264.51	
Lead & zinc metal	'000 tonnes	-	-	-	-	-	-	-	-	0.90	-	0.90	0.90	
Limestone	'000 tonnes	542498	72263	195715	810475	60640	88866	18728	858265	18014634	-	19200681	20011157	
Manganese ore	'000 tonnes	-	-	-	-	-	-	-	-	2954	-	2954	2954	
Marble	'000 tonnes	-	-	-	-	-	26571	-	17129	34871	-	123571	123571	
Marl	33236150	4650000	2090000	13997615	011704870	-	-	-	-	-	-	11704870	151681020	
Ochre	tonne	12243	32699	65047	109989	-	-	6971	6210	2906608	-	2946309	3056298	
Perlite	'000 tonnes	140	-	288	428	-	683	307	-	-	988	1978	2406	
Quartz-silica sand	'000 tonnes	16042	684	19256	35982	17133	5110	2144	2999	25629	-	64789	100771	
Phosphorite/Rock phosphate	tonne	-	-	-	-	-	-	-	-	314820	-	314820	314820	
Talc/soapstone/steatite	'000 tonnes	-	-	6	6	-	20	8	-	4	-	31	37	
Vermiculite	tonne	-	-	-	-	-	-	-	-	1960	-	1960	1960	
Wollastonite	tonne	-	-	-	-	-	-	-	-	1990000	-	1990000	1990000	

Figures rounded off.
The proved and indicated balance recoverable reserves of crude oil and natural gas as on 1.4.2012 in the State are 135.72 million tonnes and 78.19 billion cu m, respectively.

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Table – 3 : Details of Exploration Activities in Gujarat, 2011-12

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Basemetal Banas-kantha	Amlimal area (South Delhi Fold Belt)	-	-	-	-	-	<p>Reconnaissance stage investigation (G-4) was taken up during FS 2010-12 in this area to search for copper and associated precious metals in the rocks of South Delhi Fold Belt between Ambaji and Deri polymetallic deposits. Indications of mineralisation in the Amlimal area is recorded in the form of malachite and azurite stains, specks and stringers of pyrite with occasional chalcopyrite in the cherty quartzite and amphibolite. Detail mapping have delineated various types of litho-units varying from meta-sedimentary calc-silicate bands to meta-volcanic rocks of amphibolite and meta-rhyolite and their variants along with plutonic quartz-syenite and quartz veins. Four shear zones are marked with limonitisation and mineralisation in the form of pyrite and chalcopyrite disseminations, encrustations of malachite and azurite as exposed in old pits. Development of gossan with various shades of limonitisation and box work is observed at places in block- A and B, showing indications of mineralisation.</p> <p>A skarn zone was observed at the contact of calc-silicate, which comprises quart-epidote-garnet rock, which is associated with an old pit with malachite mineralisation in the block-C. The geophysical anomaly comprising SP, IP and magnetic established by ground surveys are corroborated by the shear zones in the area. Sampling was done keeping in mind the geophysical anomaly axes of the area. The copper values range from <15 ppm to 2.38 % with 7 samples having values more than 0.1%. The Cu values are high in old pit samples of quartzmica schist (block-A) and calc-silicates of</p> <p style="text-align: right;">(Contd.)</p>

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Table - 3 (Contd.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Basemetal Banas-kantha (Contd.)	Amlimal area	-	-	-	-	-	block-C having values more than 0.1%. Concentration of zinc, in the analysed samples ranges from <10 ppm to 0.12%. Only one sample is showing Zn value more than 0.1%, which is from gossan sample of Block-B. The nickel values range from <15 ppm to 92 ppm and that of cobalt values range from <15 ppm to 580 ppm, which are comparatively higher in amphibolite samples. The silver values are <5 ppm and gold values are <0.05 ppm for all the samples from the three blocks. On the basis of sum of the geological, geochemical and geophysical data, it is recommended that test exploration drilling should be done in all the three blocks, along the shear zones, to reveal potentiality of the occurrence at depth. The work has been completed.
GSI Bauxite Kachchh	Around Ukheda Daban, Wamoti, Naniand and Khanpur	-	-	-	-	-	Reconnaissance stage investigation (G-4) was carried out during FS 2010-12 to search for titaniferous bauxite and to study its mineralogy in the area. The area comprises mainly Mesozoic and Tertiary sedimentaries and the basic effusives and intrusives. In the bauxite-laterite belt kaolinitisation, lateritisation and bauxitisation were noticed together at most of the places. The bauxite is pisolitic and its size varies from 1 m to 2 cm in diameter. The width of bauxite is ranging between 1m to 3.5 m as observed in different river cuts and mine sections. Bauxite of Kachchh area contains four major oxides, viz, Al_2O_3 , SiO_2 , Fe_2O_3 and TiO_2 and was formed due to lateritisation of silicate rock (basalt). The titanium bearing minerals like ilmenite, leucoxene, rutile, anatase etc. are enriched in the lower part of the bauxite due to its high resistance to weathering and low mobility.

(Contd.)

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Table - 3 (Concl.d.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Bauxite Kachchh (Contd.)	Around Ukheda Daban, Wamoti, Nani and Kanpur	-	-	-	-	-	Samples along/across such identified zones/layers have been collected for analysis of Al ₂ O ₃ , SiO ₂ , Fe ₂ O ₃ and TiO ₂ and for Ga (gallium) and V (vanadium). According to the available XRF analysis report, the percentage of Al ₂ O ₃ and TiO ₂ varies between 16.09% to 64.45 % and 1.34% to 5.14% respectively in Wamoti Nani and Wamoti Moti. The work has been completed.
GMDC Manganese Panchmahal	Shivrajpur	1:1,000	424.20	-	-	-	Manganese Deposit occurs as lenticular in metamorphic rocks in association with phylites, quartzites, cherts & gneisses. These deposits are considered to be of epigenetic origin & occur in the term of tabular & irregular lenses. Pyrolusite and psilomelane are the priniples ore minerals. Thickness of manganese ore varies from few cm to 5 meters. GSI estimated 25 million tonnes of manganese ore resources in this area.
Lignite Bhavnagar	Tagdi	-	-	10	1491.0	60	About 89.56 million tonnes of lignite resources (Block-A) were estimated.
-do- Surat	Tadkeshwar	1:5,000 1:3,000	-	29	2274.0	24	Resources were not estimated.

Table – 4 : Exploration for Petroleum & Natural Gas in Gujarat during 2011-12

Agency	Drilling					
	Seismic Survey		Exploratory		Development	
	2D (GLKM)	3D (SQKM)	Wells	Meterage (Km)	Wells	Meterage (Km)
ONGC	88.80	454.35	47	83.65	188	296.95

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Production

The value of mineral production in Gujarat in 2011-12 at ₹15,449 crore decreased marginally as compared to that in the previous year. The State is ranked sixth in the country and accounted for 6% of the total value of mineral production in India during the year. Gujarat was the sole producer of agate and chalk; leading producer of marl (95%), kaolin (48%) and silica sand (41%); second largest producer in fluorite (40%), lignite (35%), clay (others) (32%), sulphur (17%) and laterite (13%) in the country. The production of agate has increased from 19 tonnes to 476 tonnes and that of sulphur about twice of the previous year. The other minerals which have reported significant increase in production are ochre (94%), silica sand (41%), talc/soapstone/steatite (29%), clay (others)

(17%), lignite (13%), limestone (8%) and kaolin and marl (5% each). However, fall in production was reported during 2011-12 in petroleum (crude) (2%), natural gas (ut.) (4%), bauxite (10%), laterite (11%), quartz (12%), dolomite (31%), ball clay (50%), fireclay (57%), fluorite (96%) as compared to that of the previous year (Table- 5).

The production value of minor minerals was estimated at ₹ 1,574 crore for the year 2011-12.

The number of reporting mines in the state was 380 in 2011-12 as compared to 429 in the previous year.

The index of mineral production in Gujarat (base 2004-05=100) was 91.72 in 2011-12 as compared to 93.36 in the previous year.

**Table – 5 : Mineral Production in Gujarat, 2009-10 to 2011-12
(Excluding Atomic Minerals)**

Mineral	Unit	2009-10			2010-11			2011-12 (P)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value
All Minerals		446		138408667	429		155680516	380		154491820
Lignite	'000t	7	10526	7013700	7	13064	13480300	7	14779	15249900
Natural Gas (utilised)	m c m	-	2444	9146538	-	2262	14479062	-	2173	13909373
Petroleum(crude)	'000t	-	5960	107540869	-	5905	107814553	-	5780	105532280
Bauxite	t	109	2687306	667424	100	938574	570664	77	843497	430400
Manganese Ore	t	1	55090	27270	1	245240	121639	-	-	-
Agate	t	1	11	6	1	19	10	1	476	238
Ball Clay	t	2	31053	1477	2	31140	2025	3	15523	1708
Chalk	t	128	185218	71087	129	177197	65799	127	176010	66612
Clay (others)	t	3	420598	7040	3	203291	12775	3	238731	14569
Dolomite	t	15	346234	50554	12	244218	45935	12	169235	23768
Fireclay	t	9	92868	9829	10	145961	12484	6	62295	5171
Fluorite	t	1	100237	60944	1	52920	15876	1	1920	576
Gypsum	t	4	112	15	2	37	14	1	20	6
Kaolin	t	28	1306539	207944	22	1251890	204177	17	1318937	234918
Laterite	t	2	184840	8343	2	234548	15733	2	208058	19151
Limestone	'000t	112	23322	2864989	114	22500	2773002	103	24224	2863977
Marl	t	-	4284658	245373	-	3738693	224314	-	3920395	247086
Ochre	t	2	649	65	1	2719	299	1	5275	580
Quartz	t	7	69597	7048	5	37540	4889	5	33061	4548
Silica Sand	t	14	465530	40569	16	1247949	94933	13	1757376	144790
Talc/soapstone/steatite	t	1	2660	396	1	2316	289	1	2981	425
Sulphur#	t	-	12045	-	-	22436	-	-	65923	-
Minor Minerals @		-	-	10437187	-	-	15741744	-	-	15741744

Note: The number of mines excludes petroleum (utilised), natural gas and minor minerals.

Recovered as by-product from oil refineries.

@ Figures for earlier years have been repeated as estimated.

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Mineral-based Industry

The important large and medium-scale mineral-based industries in organised sector in the State are given in Table - 6.

Table - 6 : Principal Mineral-based Industries in Gujarat

Industry/plant	Capacity ('000 tpy)
Abrasives	
Carborandum Universal Ltd, Okha, Dist. Jamnagar.	NA
Carborandum Universal Ltd, Bhatia, Dist. Jamnagar.	NA
Flexo-Plast Abrasives, Ahmedabad.	NA
Emery (I) Pvt Ltd, Badeshwar, Dist. Jamnagar	7
Asbestos Products	
Gujarat Composite Ltd, Digvijaynagar, Dist. Jamnagar.	98
Ramco Industries Ltd, Singura, Dist. Kachchh.	72
Sanghi Industries Ltd, Sanghipuram, Dist. Kachchh.	36
U.P. Asbestos Ltd, Valsad.	36
Cement	
Ambuja Cements Ltd, Ambuja Nagar, Dist. Junagadh.	4500
Grasim Industries Ltd, Sikka, Dist. Jamnagar.	1075
Gujarat Sidhee Cements, Sidheeagram, Dist. Junagadh.	1200
HMP Cements Ltd, Porbandar, Dist. Junagadh.	198
Sanghi Industries Ltd, Sanghipuram, Dist. Kachchh.	2600
Shree Digvijay Cement Co. Ltd, Digvijaygram, Dist. Jamnagar.	1075
Saurashtra Cements Ltd, Ranavav, Dist. Junagadh.	1164
Tata Chemicals Ltd, Mithapur, Dist. Jamnagar.	440
Ultra Tech Cement Co. Ltd, Pipavav, Dist. Amreli.	5300
Ultra Tech Cement Ltd (Narmada Cement), Jafrabad, Dist. Amreli.	400

(Contd.)

Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
Sunata Ceramics Pvt Ltd, Sabarkantha.	21.6
Suncity Ceramics, Morbi, Rajkot.	12
VAN Ceramics Ltd, Dalpur, Dist. Sabarkantha.	35.3
Varmora Granito Pvt Ltd, Duva, Rajkot.	24.8
Vrundavan Ceramics Ltd, Dhuva, Dist. Rajkot.	71.3
Chemical	
Baroda Rayon Corpn. Ltd, Surat.	26 (yarn) 21.8 (H ₂ SO ₄) 2.2 (sodium sulphate)
Century Chemicals, Nava Nanga, Dist. Jamnagar.	108 (refined salt)
Gujarat Alkalies & Chemicals Ltd, Baroda.	14.9 (caustic soda)
Gujarat Alkalies & Chemicals Ltd, Dahej, Dist. Bharuch.	242.6 (caustic Soda) 151.4 (Cl) 26.7 (phosphoric acid)
Indian Rayon Industries Ltd, Veraval, Dist. Junagadh.	16 (yarn) 35.7 (H ₂ SO ₄) 10 (carbon disulphide) 9.3 (sodium sulphate) 91.3 (caustic soda)
Navin Fluorine Industries Ltd, Surat.	22(HF)
Saurashtra Chemicals Ltd, Porbandar, Dist. Porbandar.	365 (soda ash) 20.4 (caustic soda) 26.4 (refined bicarbonate)
Shree Sulphurics Pvt. Ltd, Ankleshwar, Dist. Bharuch.	58 (H ₂ SO ₄) 12 (chloro-sulphuric acid)
Tata Chemicals Ltd, Mithapur, Dist. Jamnagar.	875(soda ash)
Copper	
Hindalco Industries Ltd, Birla Copper, Dahej, Dist. Bharuch.	500 (copper cathode) 1670 (H ₂ SO ₄) 400 (DAP) 15 tonnes (Au) 150 tonnes (Ag)
Jhagadia Copper Ltd, Jhagadia, Dist. Bharuch.	50 (electrolytic copper) 20 (copper anodes)
Fertilizer	
GSFC-Vadodara.	367 (urea) 108 (DAP) 196 (AS)

(Contd.)

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Table - 6 (Contd.)

Industry/plant	Capacity ('000 tpy)
GSFC-Sikka, Jamnagar.	177.10 (N ₂) 452.70 (P ₂ O ₅)
GNVFC Ltd, Bharuch.	594 (urea) 142.5 (CAN) 142.5 (ANP)
HIL-Dahej, Dist. Bharuch.	72.00 (N ₂) 184.0 (P ₂ O ₅)
IFFCO Ltd, Kandla, Dist. Kachchh.	1215 (NPK) 1200 (DAP)
IFFCO Ltd, Kalol, Dist. Gandhinagar.	544.5 (urea)
KRIBHCO Ltd, Hazira, Dist. Surat.	1729.2 (urea)
Foundry	
Steelcast Ltd, Ruvapuri Road, Bhavnagar.	NA
Iron & Steel	
Essar Steel Ltd, Hazira, Dist. Surat.	5100 (HBI) 1000 (hot metal) 4600 (HRC) 1400 (CRC)
Ferro Alloys	
Baroda Ferro Alloys Ltd, Panchmahals.	3.5
Essel Mining & Industries Ltd, Vapi, Dist. Valsad.	2.1
Electro Ferro Alloys Ltd, Ahmedabad.	0.3
Sponge Iron	
Electrotherm India Pvt Ltd, Samakhalli, Dist. Kachchh.	75
Gallant Metal Ltd, Samakhialli, Dist. Kachchh	170
Global Hi-Tech Industries Ltd, Bhuj, Dist. Kachchh.	105
Glass	
Alembic Glass Industries Ltd, Baroda.	35.0
Bhagwati Glass Containers Ltd, Kalol.	8.7
Bharat Glass Tube Ltd, Bharuch.	7.2
Gobind Glass & Industries Ltd, Kadi.	NA
Gopal Glass Works Ltd, Budasan, Dist. Mahesana	40.6
Gujarat Borosil Ltd, Govali, Dist. Bharuch.	62.5
Gujarat Glass, Division of Nicholas Piramal, Mangrol.	80.3

(Contd.)

Table - 6 (Concl.)

Industry/plant	Capacity ('000 tpy)
Gujarat Glass, Division of Nicholas Piramal, Jambusar.	84
Gujarat Glass, Division of Nicholas Piramal, Kosamba.	12.8
Haldyn Glass (Gujarat) Ltd, Padra, Vadodara.	43
Prestige Glass Industries Pvt Ltd, Vagra.	11.5
Petroleum Refinery	
IOCL, Koyali.	13700
RPL, Jamnagar	33000
RPL (SEZ), Jamnagar.	27000
Essar Oil Ltd, Vadinar.	10500
Refractory	
Shri Natraj Ceramics & Chemical Industries Ltd, Khambhaliya, Dist. Jamnagar.	28
Meenal Ceramics Pvt. Ltd, Chatral, Dist. Kalol.	12
VRW Industries Ltd, Ahmedabad.	24
Calcined Bauxite	
Bombay Minerals Ltd, Jamkhambhaliya.	96
Saurashtra Calcine Bauxite & Allied Industries Ltd, Bhatia.	39
Birla VXL Ltd, Porbandar.	36
Shri Natraj Ceramics & Chemical Industries Ltd, Khambhaliya.	24
Graphite Crucible	
Diamond Crucible Co. Pvt, Mahesana.	NA
S.D. Industries, Ahmedabad.	NA
Ahmedabad Carbon Products, Ahmedabad.	NA
Silicon Carbide Crucibles	
Vesuvius India Ltd, Mahesana.	1