

FELSPAR



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(Part- III : MINERAL REVIEWS)

54th Edition

FELSPAR

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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19 Felspar

Felspars are one of the most abundant rock-forming minerals in the earth's crust, comprising a complex series of aluminosilicates with varying amounts of potassium, sodium, calcium and though rarely barium. Common amongst these are the potash felspars called orthoclase and microcline ($K_2O.Al_2O_3.6SiO_2$), sodium felspar called albite ($Na_2O.Al_2O_3.6SiO_2$) and calcium felspar called anorthite ($CaO.Al_2O_3.2SiO_2$). The sodium and calcium felspars form a continuous series of solid solutions and are together termed plagioclase felspars. Though felspars occur in a variety of colours, pink, brown and grey felspars are known to be common. The gem variety of felspar is known as moon stone.

RESOURCES

As per the UNFC system, the total resources of felspar in the country as on 1.4.2010 are estimated at about 132 million tonnes of which 44 million tonnes (34%) constitute as "Reserves" and 88 million tonnes (66%) as "Remaining Resources". In terms of grades, Pottery/Ceramic grade accounts for 61%, Others/Unclassified & Not-known grades 31% and Glass grade 8% of the total resources. By States, Rajasthan alone accounts for about 66% of the total resources followed by Telangana and Andhra Pradesh (8% each), Tamil Nadu (7%), Bihar (4%) and West Bengal (3%) (Table - 1).

EXPLORATION

Directorate of Mines, Jharkhand carried out exploration for quartz and felspar during the year 2014-15 in Deogarh district with mapping of 124 sq.km area on 1:25,000 scale, 0.96 sq.km area on 1:4000 scale, pitting/trenching and collected 76 samples. The Directorate of Mines & Geology, Rajasthan carried out exploration for quartz and felspar of the intrusions of the numerous pegmatite bodies in the area located near villages Bhartwa, Badni, Shivnagari, Anakar, Baniyawas, Dungarkheda in Bhim tehsil of Rajsamand district, which was found suitable for mining of quartz and felspar. However, specific details about exploration of felspar are not available in the annual reports of both the above mentioned Departments.

PRODUCTION, STOCKS & PRICES

As per Govt. of India Notification S.O 423(E) dated 10th February 2015, Felspar has been declared as 'Minor Mineral' hence the production beyond January, 2015 is not available with IBM. The production of felspar at 1,343 thousand tonnes in 2014-15 (up to January 2015) decreased by 11% as compared to the preceding full year.

**Table – 1 : Reserves/Resources of Felspar as on 1.4.2010
(By Grades/States)**

(In tonnes)

Grade/State	Reserves			Remaining Resources					Total Resources (A+B)				
	Proved STD111	Probable		Total Feasibility STD211	Pre-feasibility STD221	Measured STD331	Indicated STD332	Inferred STD333		Reconnaissance STD334			
		STD121	STD122								STD222	Total (B)	
All India : Total	24545334	8278221	11679685	44503240	14672107	4427797	12967154	4191330	9874858	41549070	149895	87832212	132335451
By Grades													
Glass	2127308	413588	610399	3151295	1530128	389984	37322761	103662	107681	1736097	24050	7624363	10775658
Pottery/Ceramic	20007984	6425719	9721028	36154731	11367336	3080724	6946326	2539406	1951784	19203824	-	45089400	81244131
Others	702228	106195	218541	1026964	478077	171139	181017	203637	51876	350587	1800	1284133	2311097
Unclassified	617465	1202352	623834	2443651	1025842	704054	1371461	85003	143852	12767336	-	16097547	18541198
Not-known	1090349	130367	505883	1726599	270725	235896	735590	1259622	7619664	7491225	124045	17736767	19463366
By States													
Andhra Pradesh	4350209	293117	1878807	6522132	527528	17739	701284	60776	1644301	1364199	-	4315827	10837959
Bihar	-	-	35147	35147	-	-	-	-	4195	4871499	-	4875694	4910841
Haryana	-	-	-	-	-	-	-	-	-	72164	-	72164	72164
Jharkhand	5675	-	274971	280646	-	40766	279433	32510	120388	881045	-	1354142	1634788
Karnataka	119525	69575	107055	296155	-	-	-	25000	135133	177300	3900	341333	637488
Madhya Pradesh	-	-	-	-	-	-	-	-	-	339851	-	339851	339851
Maharashtra	228655	-	91462	320117	-	-	423180	-	-	485606	-	908786	1228903
Meghalaya	-	-	-	-	-	-	-	-	-	37449	-	37449	37449
Rajasthan	18083327	7793709	8837983	34715019	9839519	4042309	9666832	3154174	668648	25859733	-	53231215	87946234
Tamil Nadu	613184	6450	31302	650936	2328227	70156	416162	18870	69822	5447875	-	8351112	9002048
Telangana	1118885	115370	422958	1657214	2079950	153711	1480263	-	3832370	1611099	145995	9303388	10960602
Uttar Pradesh	-	-	-	-	-	-	-	-	-	200000	-	200000	200000
West Bengal	25874	-	-	25874	-	-	-	900000	3400000	201250	-	4501250	4527124

Figures rounded off.

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There were 198 primary reporting mines in 2014-15 as against 275 mines in the previous year. Besides, the production of felspar was also reported from 150 mines as an associated mineral. Nineteen primary mines and 18 associate mines producing more than ten thousand tonnes annually, accounted for about 67% of the total production in 2014-15. Eight principal producers contributed 30% of the total production during the year under review.

Rajasthan was the leading producing state contributing 57% of the total production followed by Telangana (30%), Andhra Pradesh (7%), Tamil Nadu (4%) and the remaining 2% was contributed by West Bengal and Jharkhand. (Tables- 2 to 5).

The mine-head closing stock of felspar in 2014-15 (up to January 2015) were 785 thousand tonnes as against 723 thousand tonnes in the previous year (Table- 6).

The average daily employment of labour in 2014-15 was 1,591 as against 2,975 in the previous year. Prices of felspar are furnished in the General Review on 'Prices'.

MINING & MARKETING

Felspar is won chiefly from pegmatites. Mining is carried out, generally, by opencast method. Significant output of felspar is obtained as an associated mineral during mining of quartz, mica and to some extent beryl. Ajmer, Bhilwara and Sikar districts in Rajasthan, Sri Potti Sriramulu Nellore district in Andhra Pradesh and Karur district of Tamil Nadu are the important mining areas in the country.

The pegmatite bodies are exposed after the removal of top soil and overburden. It is then broken either manually or by drilling and blasting.

The broken materials are then sorted out and sized. Crushed felspar is separated mechanically by suitable screens to meet market requirements. The general demand is for 30/80 mesh, 100 mesh, 150 mesh, 180 mesh, 200 mesh and 250 mesh material. Washing is sometimes done to upgrade the product by removing clay, etc. The processed felspar is bagged and despatched to different consignees.

**Table – 2 : Principal Producers of Felspar
2014-15**

Name and address of producer	Location of mine	
	State	District
Madhu Devi, 108, Himmatnagar, Gopalpura Mode, Tonk Road, Jaipur-302 018, Rajasthan.	Rajasthan	Sikar
K. K. Mines & Minerals, 9, Press Gallary, Chhawani Road, Beawar, Ajmer-305 901, Rajasthan.	Rajasthan	Ajmer
*P. Jaya lakshmi, 6-3-609/101, Flat 402, Seetharama Enclave, Anandnagar Colony, Khairatabad, Hyderabad- 500 004.	Telangana	Mahabub-nagar
*Pankaj Kumar Tak, Sheetal Bhavan, Post. Kharwa, Masuda, Ajmer- 305 202. Distt. Ajmer, Rajasthan.	Rajasthan	Ajmer
*Avulaa Srinivas, Door No. 14-6-344, Chudi Bazar, Hyderabad- 500 001, Telangana.	Telangana	Mahabub-nagar
Laxmi Marble & Granite (P) Ltd, Opposite Rly Station, Neem ka Thana, Sikar-332 713, Rajasthan.	Rajasthan	Sikar
Sibelco India Minerals (P) Ltd, D. No. 8-2-293/K/311-312, Sriman Chambers, Kamalpuri Colony, Phase-3, Hyderabad-500 073.	Telangana	Mahabub-nagar *Nalgonda *Rangareddy
Palle Sridhar Reddy, Plot No. 32, House No. 4-9-602, Vinayak Nagar, Hayat Nagar, Hyderabad-500 074.	Telangana	Mahabub-nagar

* Associated mines of felspar with quartz.

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The processing of felspar usually involves flotation or magnetic separation to remove accessory minerals like mica, garnet, ilmenite and quartz. Silica in the form of quartz in pegmatites and silica sand in felspathic sand deposits are obtained as co-products of mining. Though in some applications, presence of silica is advantageous, most users require extremely pure and finely-ground grades of felspar. Glass grade felspar is usually the most coarse material. The filler application demands finely-ground material. A modern processing plant located at Kodthal in Mahabubnagar district of Telangana and 12 processing plants in Rajasthan cater to Ceramics and Glass Industries.

USES

Potassium felspar obtained from pegmatites is used traditionally as a source of alumina and alkali in Ceramic and Glass Industries which account for more than 90% consumption. It also finds use as functional filler in paint, plastic, rubber and adhesive; as a binding agent in abrasives; and in the manufacture of artificial teeth, fertilizer and white cement. Certain varieties of felspar (like moonstone) are used as semi-precious stones.

In Ceramic Industry, felspar is used as fluxing agent which facilitates softening, melting and wetting of batch constituents. The flux controls the degree of vitrification of the ceramic body during firing. Potash felspar has technical advantages over sodium felspar. After clay, felspar is the biggest ingredient in the raw material batch for ceramic bodies. Typical felspar contents are < 25% in earthenware, 25-35% in sanitaryware, 15-30% in whiteware, 10-55% in floor and wall tiles and 30-55% in electrical porcelain. For Glass Industry, the alkali content in felspar acts as a flux, which not only facilitates lowering the glass batch melting temperature but also cuts production cost. The mineral is primarily added for alumina content which varies in its application from 0.05% for flat glass, 8% for container glass, 11% for some speciality glasses and up to 18% for insulation fibre glass.

In the Abrasive Industry, plagioclase felspar is used as a mild abrasive material in scouring powders because of its semi-conchoidal fracture and its hardness which is 6 on Mohs' scale. In Refractory Industry, felspar is used as one of the batch constituents in the manufacture of acid-proof refractories. In Welding Electrode Industry, felspar is used as a flux which acts as an arc stabiliser and helps to protect the molten metal from aerial oxidation.

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**Table – 3 : Production of Felspar, 2012-13 to 2014-15
(By States)**

(Qty in tonnes; Value in ₹'000)

State	2012-13		2013-14		2014-15* (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	1459008	428633	1512982	439282	1343366	360546
Andhra Pradesh#	73007	23925	100276	34209	100930	28500
Jharkhand	6525	1693	7462	2499	3252	714
Rajasthan	892257	245970	928320	269207	767091	195734
Tamil Nadu	42666	14934	56061	19464	51884	20078
Telangana#	430993	136963	401021	106307	401072	107680
West Bengal	13560	5148	19842	7596	19137	7840

* Data up to January 2015.

Figures mentioned against 2013-14 are of districts which are part of present Andhra Pradesh and Telangana states.

**Table – 4 : Production of Felspar, 2013-14 & 2014-15
(By Frequency Groups)**

(Qty in tonnes)

Production Group	No. of mines		Production for the group		Percentage in total production		Cumulative percentage	
	2013-14	2014-15*(P)	2013-14	2014-15*(P)	2013-14	2014-15*(P)	2013-14	2014-15*(P)
All Groups	275 (176)	198 (150)	1512982	1343366	100.00	100.00	-	-
Up to 500	106(64)	92(60)	27336	23496	1.81	1.75	1.81	1.75
501-1000	45(19)	26(19)	47419	33605	3.13	2.50	4.94	4.25
1001-3000	65(50)	38(33)	212959	132486	4.08	9.86	19.02	14.11
3001-5000	14(14)	6(9)	107966	52705	7.13	3.92	26.15	18.03
5001-10000	21(13)	17(11)	238902	194791	15.79	14.50	41.94	32.53
10001 & above	24(16)	19(18)	878400	906283	58.06	67.47	100.00	100.00

* Data up to January 2015.

Figures in parentheses indicate number of mines of felspar associated with asbestos, kaolin, wollastonite, mica, quartz, silica sand & talc/steatite/soapstone.

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**Table – 5 : Production of Felspar, 2013-14 & 2014-15
(By Sectors/States/Districts)**

(Qty in tonnes; Value in ₹'000)

State/District	2013-14			2014-15* (P)		
	No.of mines	Quantity	Value	No.of mines	Quantity	Value
India	275(176)	1512982	439282	198(150)	1343366	360546
Public sector	1(1)	19021	6657	(1)	17855	6249
Private sector	274(175)	1493961	432625	198(149)	1325511	354297
Andhra Pradesh#	9(33)	100276	34209	7(20)	100930	28500
Chittoor	1*	-	-	-	-	-
Cuddapah	1(1)	5	2	1(1)	350	105
Krishna	(1)	62	12	-	-	-
Nellore	7(31)	100209	34195	6(19)	100580	28395
Jharkhand	2(4)	7462	2499	1(3)	3252	714
Deogarh	-	-	-	(1)	330	83
Giridih	(2)	3465	1491	(1)	605	212
Jamtara	1	1365	246	1	2167	389
Koderma	1(1)	2482	739	-	-	-
Ranchi	(1)	150	23	(1)	150	30
Karnataka	1*	-	-	-	-	-
Bengaluru	1*	-	-	-	-	-
Rajasthan	237(56)	928320	269207	169(57)	767091	195734
Ajmer	91(31)	236360	57187	82(35)	258140	52689
Bhilwara	119(12)	372834	123944	64(11)	247569	82902
Chittorgarh	1	7780	3112	-	-	-
Jaipur	6(4)	36121	8501	3(3)	51044	11641
Pali	-	-	-	1*	-	-
Rajsamand	13	32526	14019	12	15478	8490
Sikar	3(4)	180752	52606	5(3)	159058	34313
Sirohi	1	230	58	1	200	50
Tonk	3(5)	61717	9780	1(4)	32222	5064
Udaipur	-	-	-	(1)	3380	585
Tamil Nadu	(48)	56061	19464	(46)	51884	20078
Coimbatore	(3)	2311	1076	(1)	152	61
Dindigul	(5)	9647	2100	(5)	5117	1731
Erode	(10)	2409	1311	(8)	1634	763
Karur	(12)	5891	3054	(15)	10172	3650
Madurai	(1)	1144	458	(1)	722	289

(Contd.)

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Table- 5 (Concl.d.)

State/District	2013-14			2014-15*(P)		
	No.of mines	Quantity	Value	No.of mines	Quantity	Value
Namakkal	(6)	6689	2641	(7)	14766	6363
Salem	(10)	27540	8407	(9)	19321	7221
Tiruppur	(1)	428	417	-	-	-
Telangana#	26(33)	401021	106307	21(22)	401072	107680
Khammam	1	600	180	1	200	60
Mahbubnagar	22(17)	306910	77645	18(11)	308400	79208
Medak	(6)	24770	6794	(6)	23000	6263
Nalgonda	(3)	23280	6446	(2)	11950	3937
Nizamabad	(1)	1851	426	-	-	-
Rangareddy	3(6)	43610	14816	2(3)	57522	18212
West Bengal	(2)	19842	7596	(2)	19137	7840
Birbhum	(1)	821	939	(1)	1282	1591
Purulia	(1)	19021	6657	(1)	17855	6249

*Data up to January 2015.

Figures mentioned against 2013-14 are of districts which are part of present Andhra Pradesh and Telangana states.

Figures in parentheses indicate number of mines of felspar associated with asbestos, kaolin, mica, quartz, silica sand & talc/steatite/soapstone.

Table – 6 : Mine-head Closing Stocks of Felspar, 2013-14 & 2014-15 (By States)

State	(In tonnes)	
	2013-14	2014-15(P)
India	723297	785454
Andhra Pradesh#	67279	79854
Jharkhand	791	620
Karnataka	1345	1606
Madhya Pradesh	11	11
Rajasthan	418284	489708
Tamil Nadu	14717	20448
Telangana#	220785	193094
West Bengal	85	113

Data up to January 2015.

Figures mentioned against 2013-14 are of districts which are part of present Andhra Pradesh and Telangana states.

Physical properties like good dispersability, chemical inertness, stable pH, low free silica content and brightness of 89-95% improve the filler properties of finely-ground felspar materials.

SPECIFICATIONS

The BIS specifications of potash felspar and soda felspar for use in Glass and Ceramic industries are as per IS: 9749-2007 (Re-affirmed in March 2012). The producers prefer the following specifications for various ceramic products:

Sanitaryware

K₂O 11-14%, Na₂O 2-7%, SiO₂ 62-68%, Al₂O₃ 16-20%, Fe₂O₃ 0.25% (max.). The deleterious constituents are TiO₂ and MgO.

Insulators

K₂O 11-12.5%, Na₂O 2-3% (4% max.), SiO₂ 64.5-68%, Al₂O₃ 17-21%, Fe₂O₃ 0.48% (max.) (but Fe₂O₃ less than 0.1% is accepted).

Ceramic Tiles

K_2O 9%, Na_2O 4%, Al_2O_3 18% (min.), Fe_2O_3 1% (max.), K_2O+Na_2O 14% (max.). Both sodium and potassium felspars are used.

Crockeryware

K_2O 12-15%, Na_2O 3.69%, SiO_2 63.05%, Al_2O_3 19.56% and Fe_2O_3 0.10%.

Glass

The physical requirements specified are that of the material in powder form prepared from natural felspar which should be free from foreign matter; moisture shall not exceed 2% by mass; specific gravity should be between 2.5 and 2.7; PCE should be 8 to 10 orton (1,225 -1,260 °C); and fired-colour shall be glassy-white and free from specks.

However, the producers accept felspar analysing 10% $K_2O + Na_2O$, 64-68% SiO_2 , 15-19% Al_2O_3 and 0.15% Fe_2O_3 .

Refractory

There is no BIS specification for felspar for use in Refractory Industry. The Industry prefers potash felspar analysing 11 to 12% $Na_2O_3 + K_2O$, 60 to 70% SiO_2 , 20 to 24% Al_2O_3 , 1.5% Fe_2O_3 , 0.8% LOI, 4 to 6 orton PCE and 2.5 to 10 cm material.

Abrasive

Felspar in both powder and lump forms is used and white or pink mineral is preferred. As per the users in the Organised Sector, felspar that analyses SiO_2 65%, Al_2O_3 18%, $Na_2O + K_2O$ 10% (max.), Fe_2O_3 0.45%, MgO 0.5%, CaO 0.6% and LOI 2% (max.) is generally consumed.

Electrode

Potash felspar, analysing 12 to 14% K_2O , 1 to 3% Na_2O , 63 to 67% SiO_2 , 17 to 20% Al_2O_3 and below 0.3% Fe_2O_3 , is preferred.

INDUSTRY

Ceramic Industry in India is about a century old and has formed a sizeable industrial base. The products generally comprises ceramic tiles, sanitaryware and crockery items. The Industry has its base both in large and small-scale sectors with wide variance in type, size, quality and standard. Manufacturing units are spread all-over India. The state-of-the-art ceramic goods are manufactured in the country. The domestic technology is at par with international standard. During the last two decades, there has been a phenomenal growth in the field of high end technical ceramics to meet specific demands of industries like high alumina ceramic, cutting tools and other structural ceramics.

CONSUMPTION

Felspar is used mainly in Ceramic, Glass and Cement Industries. Minor quantities of felspar are consumed by Refractory, Abrasive and Electrode Industries. The total consumption of felspar in 2014-15 was 4,64,700 tonnes in the Organised Sector. Of the total consumption, the Ceramic Industry accounted for 75%, Glass Industry 16% Cement Industry about 8%, and the remaining 1% by Refractory, Abrasive, Electrode, Coal Washery and Cosmetics Industries (Table- 7).

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**Table- 7 : Consumption* of Felspar
2012-13 to 2014-15
(By Industries)**

Industry	(In tonnes)		
	2012-13	2013-14(R)	2014-15(P)
All Industries	481600	504800	464700
Abrasive	600(3)	600(3)	600(3)
Cement	70000(11)	79800(11)	37100(11)
Ceramic	340000(49)	350000(49)	350000(49)
Chemical	100(2)	100(2)	100(2)
Coal washery	++(1)	++(1)	++(1)
Cosmetics	++(1)	++(1)	200(1)
Electrode	600(21)	600(21)	600(21)
Glass	59500(51)	72900(52)	75400(52)
Refractory	800(14)	800(14)	800(15)

Figures rounded off. Data collected on non-statutory basis. Figures in parentheses denote the number of units in organised sector.

**Paucity of data, hence consumption may not be complete.*

WORLD REVIEW

World resources of felspar are large and adequate enough to meet the anticipated world demand. Hence, quantitative data on resources of felspar in granites, pegmatites and felspathic sands have not been compiled. The world production of felspar was estimated at 25.31 million tonnes in 2014. Major producers were Turkey (30%), Italy (19%), China (8%), India (7%) and Thailand (6%) (Table-8).

**Table – 8 : World Production of Felspar
(By Principal Countries)**

Country	(In '000 tonnes)		
	2012	2013	2014
World: Total	24238	23968	25313
Algeria	162	259	230
Argentina	270	270 ^e	270 ^e
Brazil	247	294	300 ^e
China ^(e)	2100	2100	2100
Czech Republic	445	411	422
Ecuador	153	210	183
Egypt ^(e)	400	400	400
France ^(e)	600	550	550
Germany	350	350 ^e	350 ^e
India	1459	1413	1750 ^e
Iran	500	580	600 ^e
Italy ^(e)	4700	4700	4700
Japan ^(e) @	100	105	100
Korea, Rep. of	360	343	529
Malaysia	483	314	377
Mexico	380	164	151
Poland	487	483	485 ^e
Portugal	167	139	136
Russia ^e	160	160	160
Saudi Arabia	227	160	168
Spain	530	593	600 ^e
Thailand	1101	1073	1413
Turkey	7076	7091	7610
USA	560	550	560 ^e
Ukraine	146	134	95
Vietnam ^e	200	200	200
Other countries	875	922	874

Source: World Mineral Production, 2010-14.

@ Including weathered granite felspar.

FOREIGN TRADE**Exports**

Exports of felspar (natural) increased sharply to 590 thousand tonnes in 2014-15 from 437 thousand tonnes in the previous year. Exports were mainly to Bangladesh (21%), Thailand (17%) and Indonesia (13%). Exports value of felspar (cut & uncut) increased marginally to ₹2.65 crore in 2014-15 from ₹2.27 crore in 2013-14. Exports of felspar (cut & uncut) were mainly to USA (34%), UK (29%) and Hong Kong (25%) (Tables- 9 to 12).

**Table – 9 : Exports of Felspar (Natural)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	437144	2234475	589820	2876166
Thailand	31910	169623	97559	544638
Indonesia	69076	373044	78315	425564
Bangladesh	86337	315306	124092	422972
Vietnam	52925	332230	61318	388393
China	41240	220069	69230	360221
Iran	29397	176784	18585	111907
Turkey	23185	68769	36991	109031
UAE	31770	145749	33746	106524
Malaysia	16833	83226	21539	106267
Chinese Taipei/ Taiwan	20123	108071	16912	102152
Other countries	34348	241604	31533	198497

Imports

Imports of felspar (natural) increased sharply to 66,749 tonnes in 2014-15 from 42,448 tonnes in 2013-14. Imports were mainly from Thailand (88%) and China (8%). In 2014-15, import value of felspar (cut & uncut) decreased sharply to ₹96.39 lakh from ₹124.53 lakh in the previous year. In 2014-15, imports value of uncut felspar was ₹72.88 lakh and that of cut felspar was ₹23.51 lakh only. Imports of felspar (uncut) were mainly from Germany and Tanzania (Tables- 13 to 16).

**Table – 10 : Exports Value of Felspar
(Cut & Uncut)
(By Countries)**

Country	(Value in ₹'000)	
	2013-14	2014-15(P)
All Countries	22694	26488
USA	10557	8940
UK	2976	7698
Hong Kong	6776	6636
Japan	-	503
Australia	-	459
Germany	343	386
Netherlands	27	374
Thailand	1180	283
Italy	-	259
France	-	228
Other countries	835	722

(Quantity not given due to partial coverage, value figures, however, have full coverage.)

FELSPAR

**Table – 11 : Exports of Felspar (Cut)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (‘000 carat)	Value (₹‘000)	Qty (‘000 carat)	Value (₹‘000)
All Countries	1102	22453	2560	25647
USA	544	10557	742	8429
UK	33	2976	1277	7375
Hong Kong	459	6764	113	6636
Japan	-	-	131	503
Australia	-	-	15	459
Germany	1	114	38	386
Netherlands	1	27	2	374
Thailand	60	1180	1	283
Italy	-	-	2	259
France	-	-	40	228
Other countries	4	835	199	715

**Table – 12 : Exports of Felspar (Uncut)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (tonnes)	Value (₹‘000)	Qty (tonnes)	Value (₹‘000)
All Countries	++	241	++	841
USA	-	-	++	511
UK	-	-	++	323
UAE	-	-	++	6
Other countries	++	241	++	1

**Table – 13 : Imports of Felspar (Natural)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (tonnes)	Value (₹‘000)	Qty (tonnes)	Value (₹‘000)
All Countries	42448	212990	66749	242645
Thailand	36540	144119	58980	167019
China	5402	61915	5412	51404
Turkey	376	3928	2336	23954
Korea, Rep. of	4	98	5	135
Spain	-	-	4	69
Saudi Arabia	-	-	12	64
Other countries	126	2930	-	-

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**Table – 14 : Imports Value of Felspar
(Cut & Uncut)
(By Countries)**

(Value in ₹'000)

Country	2013-14	2014-15(P)
All Countries	12453	9638
Germany	-	3865
Tanzania	8112	2952
Sri Lanka	-	1778
Thailand	-	699
Turkey	343	246
Canada	-	83
Hong Kong	3231	8
USA	31	4
Poland	-	3
Mozambique	5	-
Other countries	731	-

**Table – 15 : Imports of Felspar (Cut)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (‘000 carat)	Value (₹'000)	Qty (‘000 carat)	Value (₹'000)
All Countries	++	31	77	2351
Sri Lanka	-	-	72	1640
Thailand	-	-	5	699
Hong Kong	-	-	++	8
USA	++	31	++	4

**Table – 16 : Imports of Felspar (Uncut)
(By Countries)**

Country	2013-14		2014-15(P)	
	Qty (tonnes)	Value (₹'000)	Qty (tonnes)	Value (₹'000)
All Countries	2	12422	25	7288
Germany	-	-	18	3865
Tanzania	1	8112	7	2952
Turkey	++	343	++	246
Sri Lanka	-	-	++	138
Canada	-	-	++	83
Poland	-	-	++	3
Other countries	1	3967	++	1

FUTURE OUTLOOK

India is the third largest tiles market in the world. While the global tiles production grew at an annualised rate of 6.3% for the period 2006-2013, tiles production

in India grew at almost double the rate at 12% during the same period. Ceramic tiles that accounts for close to 60% of the total tiles demand in India is expected to grow at a CAGR of 8.7% for the period 2014-2019.