Indian Minerals Yearbook 2015

(Part- III : Mineral Reviews)

54th Edition

TALC, SOAPSTONE AND STEATITE

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

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47 Talc, Soapstone and Steatite

Talc is a hydrous magnesium silicate. In trade parlance, talc often includes: (i) the mineral talc in the form of flakes and fibres; (ii) steatite, the massive compact cryptocrystalline variety of high-grade talc; and (iii) soapstone, the massive talcose rock containing variable talc (usually 50%), which is soft and soapy in nature. Commercial talc may contain other minerals like quartz, calcite, dolomite, magnesite, serpentine, chlorite, tremolite and anthophyllite as impurities. The properties of talc that enables its use in a wide variety of applications are its extreme softness & smoothness, good lustre & sheen, high slip & lubricating property, low moisture content, ability to absorb oil & grease, chemical inertness, high fusion point, low electrical & heat conductivity, high dielectric strength, good retention for filler purposes, whiteness, good hiding power as pigment and high specific heat. In addition, it has the advantage of being relatively abundant. It can be easily mined and prepared for market. Rajasthan is the hub of activities related to talc mining, processing and trade.

RESOURCES

As per the UNFC system, the total reserves/ resources of talc/steatite/soapstone as on 1.4.2010 is estimated at 269 million tonnes of which reserves and remaining resources are 90 million tonnes and 179 million tonnes, respectively. Substantial quantities of resources are established in Rajasthan (49%) and Uttarakhand (29%). The remaining 22% resources are in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Sikkim and Tamil Nadu and Telangana. By grades, Paper & Textile grade accounts for about 22% share in total resources followed by Insecticides (19%) and Cosmetics (13%). Resources of Ceramic and Paint grades are negligible. Others, Unclassified and Not-known grades account for about 45% resources (Table-1).

EXPLORATION & DEVELOPMENT

During the year 2014-15 DGM Rajasthan carried out prospecting for search of Soapstone and other economic mineral within ultramafics between Surata, Kochri, Tahsil Sinal Wara Distt. Dungarpur. The well foliated light greenish coloured talc-chlorite schist has been exposed in the form of thin bands and lenses.

PRODUCTION, STOCKS & PRICES

As per GOI notification S.O. 423(E) dated 10th February 2015, Steatite or Talc or Soapstone has been declared as minor minerals 'hence the data on production beyond 2015 are not available with Indian Bureau of Mines and, therefore, have not been reflected in this edition of the title. The production of Talc/ Steatite/Soapstone in 2014-15 at 774 thousand tonnes (up to January 2015) decreased by about 13% as compared to that in the previous year.

There were 105 reporting mines in 2014-15 as against 116 in the previous year. Besides, production of Talc/Soapstone/Steatite was reported by eight mines as associated mineral in 2014-15 as against eleven mines in previous year. Ten principal producers accounted for nearly 72% of the total production during 2014-15. In both the years Talc/Soapstone/ Steatite, entire production was reported by Private Sector mines. About 86% of the total production in 2014-15 was contributed by 36 mines, each of which produced over 5,000 tonnes annually, whereas about 13% of the total output was reported by 36 mines, each with annual production range of 1,000 to 5,000 tonnes. The remaining about 1% of the total production was contributed by 48 mines with annual output below 1,000 tonnes.

About 52% of the production in 2014-15 was of grade other than Insecticide and the remaining was of Insecticide/DDT grade.

Rajasthan, the major producing state accounted for as much as 82% of the total production in 2014-15. Among the other states, the share of Uttarakhand was 10 % and that of Andhra Pradesh was nearly 7 % and rest 1% was reported from Gujarat, Madhya Pradesh and Tamil Nadu.

Mine-head closing stocks in 2014-15 (up to January 2015) were 609 thousand tonnes as against 558 thousand tonnes in 2013-14.

The average daily employment of labour was 2,689 in 2014-15 as against 2,878 in the previous year.

The domestic prices of Talc/Steatite/Soapstone are furnished in the General Review on 'Prices'. (Table - 2 to 6)

Table – 1 : Reserves/Resources as on 1.4.2010 : Talc/Steatite/Soapstone (By Grades/States)

(In '000 tonnes)

Grade/States	Reserves				Remaining resources								Total resources (A+B)
	Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
All India	**54615**	**8772**	**26640**	**90026**	**9732**	**12773**	**27080**	**6403**	**7256**	**115195**	**558**	**178996**	**269023**
By Grades													
Paper & textile	18852	3926	8803	31581	3564	524	5286	5201	430	13718	0	28721	60302
Cosmetics	18365	1049	6593	26008	203	1856	776	232	142	5610	0	8819	34827
Insecticide	11006	2795	5551	19353	3127	2756	11451	941	217	12661	42	31194	50547
Ceramic	410	-	558	968	-	46	87	-	35	212	344	724	1691
Paint	84	374	182	640	9	-	151	-	0	200	0	360	1000
Others	871	104	810	1785	461	3630	2095	17	100	2209	0	8513	10297
Unclassified	5026	523	4140	9690	1105	3877	6557	11	6276	71195	167	89188	98878
Not-known	-	-	3	3	1263	84	678	2	56	9388	5	11477	11479
By States													
Andhra Pradesh	1031	1044	3060	5135	71	168	1187	-	369	3757	537	6088	11223
Bihar	-	-	149	149	-	-	-	-	0	3	0	3	152
Chhattisgarh	22	-	8	30	-	-	-	-	70	8	0	78	108
Gujarat	-	-	6	6	-	20	8	-	0	4	0	31	37
Jharkhand	-	-	-	-	-	-	73	2	4	243	16	338	338
Karnataka	35	-	182	217	49	124	217	11	208	1242	0	1851	2068
Kerala	-	-	-	-	-	-	-	-	0	14390	0	14390	14390
Madhya Pradesh	-	-	-	-	4	375	954	-	1679	6107	0	9119	9119
Maharashtra	-	-	-	-	-	-	-	-	2565	14262	0	16827	16827
Odisha	123	178	112	414	31	1	109	-	0	265	0	406	820
Rajasthan	28179	2705	14770	46193	6155	7323	19196	1685	837	50768	5	85969	132162
Sikkim	0	0	0	0	0	0	60	0	0	0	0	60	60
Tamil Nadu	0	0	333	333	194	210	1400	0	0	524	0	2328	2661
Telangana	0	0	0	0	0	0	0	0	0	20	0	20	20
Uttarakhand	24684	4845	8021	37550	3228	4551	3876	4705	1524	23604	0	41487	79037

Figures rounded off.

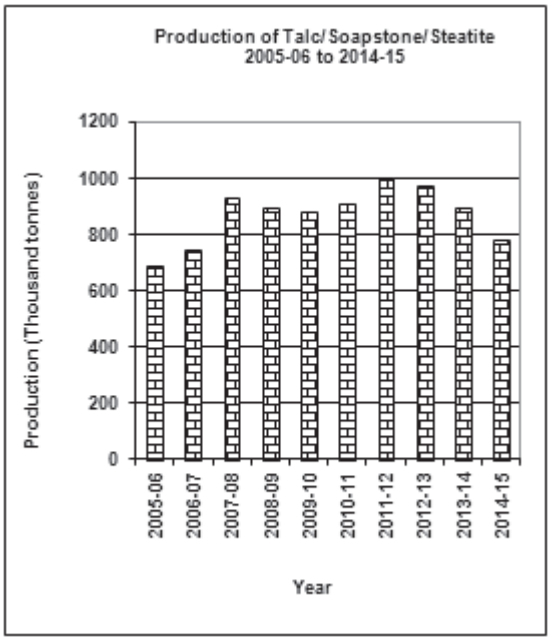

Table – 2: Principal Producers of Talc/Steatite/ Soapstone, 2014-15

Name & address of producer	Location of mines	
	State	District
Associated Soapstone Distributing Co. (P) Ltd, Golcha Garden, Agra Road, Jaipur- 302 003, Rajasthan.	Rajasthan	Udaipur
Udaipur Mineral Development Syndicate (P) Ltd, Golcha Trade Centre (GTC), 4th Floor Ajmeri Gate, MI Road, Jaipur- 302 001, Rajasthan.	Rajasthan	Bhilwara
Rajasthan Mineral & Co. B-25, Gautam Marg, Hanuman Nagar, Post- Vaishali Nagar, Jaipur- 302 021, Rajasthan.	Rajasthan	Bhilwara

(Contd.)

Table - 2 (Concld.)

Name & address of producer	Location of mines	
	State	District
Ratanlal Deedwaniya, D-4, Nagori Garden, Near Bank of Baroda, Bhilwara- 311 001, Rajasthan.	Rajasthan	Bhilwara
Nalwaya Mineral, Industries (P) Ltd, 7/A, Bapu Bazar, Udaipur- 313 001, Rajasthan.	Rajasthan	Dungarpur
Kedarnath Khaitan, Khaitan Industries, 5, Shivaji Nagar, Udaipur, Rajasthan.	Rajasthan	Udaipur
Katiyar Mining & Industries Corpn, 117/L/215, Naveen Nagar, Kakadeo, Kanpur- 208 025, Uttar Pradesh.	Uttarakhand	Bageshwar
Buddhra Mineral Aangan 7, New Fateh Pura, Udaipur- 313 001, Rajasthan.	Rajasthan	Udaipur
Raj Kumar Pareek Vill. & Post Jalia Via Bigod, Tehsil-Malagarh, Ajmer- 311 601.	Rajasthan	Bhilwara
Krishna Mines & Traders Rajasamand, 3-B, Industrial Estate Pratap Nagar, Udaipur- 313 003, Rajasthan.	Rajasthan	Udaipur

Table – 3 : Production of Talc/Steatite/Soapstone, 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	**971778**	**888390**	**887925**	**983272**	**774281**	**948930**
Andhra Pradesh	85117	30980	62214	31203	57752	29293
Chhattisgarh	440	132	-	-	-	-
Gujarat	2626	783	1301	403	-	-
Jharkhand	1400	532	-	-	-	-
Madhya Pradesh	140	56	1887	969	1828	933
Rajasthan	766742	681223	739739	811620	633216	771047
Tamil Nadu	991	297	1280	384	2750	825
Uttarakhand	114322	174387	81504	138693	78735	146832

* Data up to January 2015

Table – 4 : Production of Talc/Steatite/Soapstone 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	**116(11)**	**105(8)**	**887925**	**774281**	**100.00**	**100.00**	**-**	**-**
Up to 500	41(2)	39(2)	3297	4864	0.37	0.63	0.37	0.63
501 to 1000	10(1)	6(1)	8813	5385	0.99	0.70	1.36	1.33
1001 to 2000	15(2)	10	25632	13192	2.89	1.70	4.25	3.03
2001 to 5000	24(4)	23(3)	92728	84784	10.45	10.95	14.70	13.98
5001 to 10000	9(1)	12	70181	78982	7.90	10.20	22.60	24.18
10001 to 25000	10(1)	9(2)	163821	157842	18.45	20.39	41.05	44.57
25001 & above	7	6	523453	429232	58.95	55.43	100.00	100.00

* *Data up to January 2015*

Figures in parentheses indicate no. of associated mines with clay (others), dolomite and kaolin & pyrophyllite.

Table – 5 : Production of Talc/Steatite/Soapstone, 2013-14 & 2014-15 (By Sector/States/Districts/Grades)

(Qty in tonnes; value in ₹ '000)

State/District	2013-14					2014-15 * (P)				
	No.of mines	Quantity			Value	No.of mines	Quantity			Value
		Insecticide/ DDT	Other than Insecticide	Total			Insecticide/ DDT	Other than Insecticide	Total	
India	**116(11)**	**450494**	**437431**	**887925**	**983272**	**105(8)**	**373023**	**401258**	**774281**	**948930**
Private Sector	116(11)	450494	**437431**	**887925**	**983272**	**105(8)**	**373023**	**401258**	**774281**	**950316**
AndhraPradesh	**29(7)**	**47535**	**14679**	**62214**	**31203**	**25(5)**	**42465**	**15287**	**57752**	**29293**
Anantapur	8(2)	2201	6509	8710	13959	7(1)	-	5506	5506	11500
Cuddapah	(1)	710	-	710	78	(1)	244	-	244	27
Kurnool	21(4)	44624	8170	52794	17166	18(3)	42221	9781	52002	19152
Gujarat	**1**	**1301**	**-**	**1301**	**403**	**-**	**-**	**-**	**-**	**-**
Sabarkantha	1	1301	-	1301	403	-	-	-	-	-
Madhya Pradesh	**1(1)**	**20**	**1867**	**1887**	**969**	**1**	**-**	**1828**	**1828**	**933**
Jabalpur	(1)	20	-	20	2	-	-	-	-	-
Narsinghpur	1	-	1867	1867	967	1	-	1828	1828	933
Rajasthan	**69(3)**	**336195**	**403544**	**739739**	**811620**	**65(3)**	**263300**	**369916**	**633216**	**771047**
Ajmer#	1	-	-	-	-	1	-	-	-	-
Banswara	1	-	860	860	1189	1	-	1080	1080	864
Bhilwara	17(2)	151107	194786	345893	273460	18(2)	122336	185170	307506	209215
Dungarpur	7	23219	15860	39079	36106	9	16067	15730	31797	30834
Jaipur#	1	-	-	-	-	1	-	-	-	-
Karauli	2	1840	1730	3570	4034	2	365	1060	1425	2078
Rajsamand	7	6520	14130	20650	12496	6	6914	16273	23187	14016
Udaipur	33(1)	153509	176178	329687	484335	27(1)	117618	150603	268221	514040
Tamil Nadu	**1**	**1280**	**-**	**1280**	**384**	**1**	**2750**	**-**	**2750**	**825**
Coimbatore	1	1280	-	1280	384	1	2750	-	2750	825
Uttarakhand	**15**	**64163**	**17341**	**81504**	**138693**	**13**	**64508**	**14227**	**78735**	**146832**
Bageshwar	13	64163	15513	79676	135951	12	64508	12657	77165	144266
Pithoragarh	2	-	1828	1828	2742	1	-	1570	1570	2566

* *Data up to january 2015*

Figures in parentheses indicate no. of associated mines with clay (others), dolomite and kaolin and pyrophyllite.
#: only labour reported .

Table – 6 : Mine-head closing stocks of Talc/ Steatite/Soapstone, 2013-14 & 2014-15 (By States/Grades)

(In tonnes)

State	2013-14			2014-15* (P)		
	Insecticide/ DDT	Other than Insecticide	Total	Insecticide/ DDT	Other than Insecticide	Total
India	**462671**	**95352**	**558023**	**523271**	**86143**	**609414**
Andhra Pradesh	16027	4215	20242	16543	9399	25942
Bihar	31	-	31	31	-	31
Gujarat	1745	-	1745	-	-	-
Jharkhand	1979	-	1979	1979	-	1979
Karnataka	3	390	393	3	390	393
Madhya Pradesh	456	3	459	2142	36	2178
Rajasthan	425647	83853	509500	489121	69946	559067
Tamil Nadu	51	-	51	855	-	855
Uttarakhand	16732	6891	23623	12597	6372	18969

* Data up to January 2015

MINING, MARKETING & TRANSPORT

The deposits of talc are worked both by opencast and underground methods of mining. In India, almost all the mines are worked by opencast method except a few mines in Rajasthan and Andhra Pradesh, where underground method of mining is followed.

In opencast method, the overburden, being hard, is removed by drilling and blasting and the mineral, being soft, is mined and transported to the stacking places manually. In some opencast pits in Rajasthan, mechanical excavators are in use. Benches are formed along the strike on the hanging wall and footwall sides to work the deposit at depth. Most soapstone mines are worked manually. Some mines are semi-mechanised and a few are mechanised. In manually worked opencast mines, drilling is sometimes done by compressor-jackhammer unit. In semi-mechanised mines, drilling and face transport are by mechanical means but face loading, sorting, etc. are carried out manually. In a few mines, small capacity shovel and matching dumpers are deployed for handling waste. In most opencast mines, loading is done manually. In some larger mines, loading and transport are done by shovel and dumper combination. In a few mines, hand trimming is carried out on the surface. Mechanical haulage transports the material through the incline.

In underground mining in Rajasthan and Andhra Pradesh, the deposit is reached from the surface through shafts or inclines depending upon the topography and the configuration of the deposit. Generally, inclines of 1.8 m x 1.8 m and 2 m x 2 m in section are developed from the surface through the soapstone mineralisation along the dip. Levels of 1.8 m x 1.8 m or 2 m x 2 m in cross-section are driven along the body at vertical intervals of 15 to 25 m. For development, holes are drilled with compressed-air operated jackhammers. Holes in soapstone are blasted with special gelatine using ordinary detonators and safety fuses. For transportation and hoisting from underground, tipping tubs and skip hoists are used.

Talc stacked at the mine site or in stacking yard is processed by hand sorting to remove impurities like calcite, dolomite, iron oxide and quartzite. After removal of impurities grading is done visually on the basis of its whiteness. Sometimes, talc is washed to remove fine dust and impurities. It is generally graded as Grade 'A', Grade 'B', Grade 'C' and Grade 'D'.

Grade A

It is known as the first quality material. The colour of the mineral is pure white to slightly green. The whiteness is in the range from 90 to 95%. It is used in producing pharmaceuticals and cosmetics.

Grade B

It is known as the second quality material. The colour is pale-greenish to white. The whiteness is in the range from 85 to 90%. It is used in producing superior-grade paper, textile and ceramics.

Grade C

It is known as the third quality material. The colour is light greenish-grey. Whiteness is in the range from 78 to 85%. It is used in paper (inferior grade), paint, rubber, plastic and detergent industries.

Grade D

It is known as the fourth quality or DDT grade. The material having whiteness of 78% or below is generally classified under this grade. The colour of the material is dark greenish-grey to reddish-green. The DDT grade material is considered to be of a very poor quality. Gradewise whiteness & their specification along with consuming industries are furnished in Table-7.

Table – 7: Gradewise Consuming Industries of Talc

Grade	Whiteness Percentage	Industry
Grade - A	90 to 95%	i) Pharmaceutical ii) Cosmetic
Grade - B	85 to 90%	i) Superior grade paper ii) Textile iii) Ceramic
Grade - C	78 to 85%	i) Paper inferior grade ii) Paint iii) Rubber iv) Plastic v) Detergent
Grade - D	78% or below	DDT

The Industry's demand for fine powder is continuously prompting technological advancements to meet this purpose. The pulverisers/hammer mills developed and manufactured in India are capable of producing up to 700 mesh powder. The world market prefers fine powder which can be produced by adopting new processing techniques like micronising and sterilisation of the product.

Talc is crushed and ground by hammer mills and roller mills into powder and the size of talc particles is analysed by classifier. After pulverising/processing, the material is packed in 25 kg, 50 kg, 500 kg and 1,000 kg HDPE bags for internal use and laminated bags for export purpose. The pulverised talc from the processing plants and unprocessed talc from the mines are despatched through trucks and railway wagons to various consuming centres. The important loading stations for talc in the country are Maharana Pratap Nagar (Udaipur) and Kachhola in Rajasthan and Tanakpur in Uttarakhand. For exports, nearest ports are Kandla or Mumbai.

USES & SPECIFICATIONS

Talc in pulverised form is mostly used as a filler in paper, textile, rubber, insecticides and fertilizer industries. Pure talc after calcining, called 'Lava', is used in the manufacture of low-loss ceramic materials essential for radio, radar, television, etc. In roofing products, such as, tar, paper, asphalt shingles and roll roofing, talc acts as a fire retardant and increases weather resistance. Body and face powders (talcum powder) are prepared from the finest quality talc after adding deodorant and perfumes. Massive steatite when cut into panels is used for switchboards and acidproof tabletops in laboratory, laundry and kitchen sinks, in tubs and tanks as well as for lining alkali tanks in Paper Industry. Due to its high melting point (1630 ^{0}C), soapstone can be used in refractories and fire places. It is also quite useful in sculpturing.

Indian talc, especially mined in Rajasthan and Andhra Pradesh, is comparable with the best quality available in other countries. In the world market, talc, free from grit, having high whiteness and high degree of soapiness feeling is very much sought after in cosmetic, filler and weighing applications. Talc having more than 92% brightness, less than 1% Fe_2O_3 and less than 1.5% $CaCO_3$ is preferred for exports.

Soapstone powder is also used as parting agent in Foundry Industry. Parting agents are used for easy release of moulds and cores from pattern equipment and core boxes. BIS specification IS 8250-1988 (first revision reaffirmed, February 2014) prescribes use of off-white or cream-coloured material having a very smooth and slippery feel, passing completely through 75 microns IS-sieve. The material shall be predominantly magnesium silicate and chemical composition as agreed to between buyer and purchaser compatible with naturally occurring soapstone. In Paint Industry, foliated, fibrous or lamellar material of 300 mesh and free from silica is used. Specifications of steatite (as French chalk) used in paper, textile, pyrotechnic and rubber industries as per IS: 380-1978 (Second Revision, Reaffirmed 2003) are furnished in Table - 8. Specifications as per IS : 10429-1982 (Reaffirmed 2001) for Ceramic Industry and actual user specifications for Insecticide Industry are furnished in Table-9. BIS has prescribed specifications for use of talc in Cosmetic Industry vide IS: 1462-1985 (Third Revision, Reaffirmed 2006). The international specifications of talc for use in Ceramic, Cosmetic and Paint industries are detailed in Table- 10.

Table – 8 : Specifications of Steatite (French Chalk, Technical for Use in Paper, Textile, Pyrotechnics and Rubber Industries) (IS: 380-1978, Second Revision, Reaffirmed 2003)

Parameter	Paper	Textile	Pyrotechnics	Rubber
Loss on ignition	4% (max.)	4% (max.)	4% (max.)	4% (max.)
Matter insoluble in HCl	95% (min.)	95% (min.)	95% (min.)	95% (min.)
Grit, percentage by mass, max.	0.02	0.02	0.02	–
Chlorides (NaCI)	0.5% (max.)	0.5% (max.)	0.5% (max.)	0.5% (max.)
Iron (as Fe_2O_3) percentage by mass, max.	0.3	0.3	0.3	–
pH 8.5 (max.)	8.5 (max.) (of 10% solution)	8.5 (max.) (of 10% solution)	8.5 (max.) (of 10% solution)	8.5 (max.) (of 10% solution)
Whiteness, reflectance to blue light of wave length 5040 A^0 (percent, min.)	80	80	80	–
Relative density	2.7-2.9 (at 27 °C)	2.7-2.9 (at 27 °C)	2.7-2.9 (at 27 °C)	2.7-2.9 (at 27 °C)
Remarks	–	–	–	*

* *Material required for preservation of rubber goods shall contain not more than 0.05%, by mass, of copper or manganese or their compound in terms of respective compounds.*

Table – 9 : Specifications of Steatite for Use in Insecticide and Ceramic Industries

Parameter	Insecticide (User)	Ceramics (IS:10429-1982)	
		Grade-I	Grade-II
Loss on ignition (% by mass, max.)	7% (max.)	5.5%	6.5%
Moisture and other volatile matter	1% (max.)	1% (max.)	1% (max.)
Silica (as SiO_2) % by mass, min.	–	60	56
Alumina (as Al_2O_3) % by mass, max.	–	1.5	2.5
Iron oxide (as Fe_2O_3) % by mass, max.	1-1.5	1.0	1.5
Calcium oxide (as CaO) % by mass, max.	–	1.0	3.5
Magnesia (as MgO) % by mass, min.	–	30	28
Alkali (as $Na_2O + K_2O$) % by mass, max.	–	0.4	0.5
pH	6-7	–	–
Fineness	300 mesh	–	–
Size grading			
Material passing through 75 microns IS sieve, % by mass, min.	–	99	99
Material passing through 45 microns IS sieve, % by mass, min.	–	80	80
Specific gravity	–	2.7 to 2.8	2.7 to 2.8
Fusibility (Orton Standard Pyrometric Cone)	–	18 to 23 (1522-1605 °C)	16 to 18 (1491-1522 °C)
Linear shrinkage (fired) % by length, max.	–	12	–
Water absorption % by mass, max.	–	0.1	–

Grade-I : Suitable for Ceramic Insulator Industry & Grade II: Suitable for Ceramic Pottery Industry

Table – 10 : International Specifications for Talc

Parameter	Ceramic	Cosmetic	Paint*
MgO	30% (min.)	–	88% (Mg and Ca silicates)
SiO_2	60%	0.1-1.0%	–
CaO	1% (max.)	–	–
Al_2O_3	4% (max.)	–	–
Fe_2O_3	1.5% (max.)	–	–
Alkali	0.4% (max.)	–	–
Size	-325 mesh (95%)	-200 mesh	-325 mesh
Acid soluble	6	–	–
Water soluble	–	0.1 (max.)	1
Loss on ignition	–	6	7
Brightness	–	–	Over 90

** Moisture 1%.*

CONSUMPTION

Talc is used mostly in pulverised form as a filler and extender in various industries. The non-pulverised talc is used in refractory, etc. Total reported consumption of Talc/Steatite/ Soapstone in the Organised Sector was at 368 thousand tonnes in 2014-15. About 56% consumption in 2014-15 was in Paper Industry, followed by Paint (20%), Pesticide (11%), Ceramic (7.8%) and Cosmetic (3.6%) industries. Nominal consumption was shared by Fertiliser, Rubber, Textile, Chemicals and other industries. Consumption of Talc/Steatite/Soapstone during 2012-13 to 2014-15 is given in Table-11.

Table – 11 : Consumption* of Talc/Steatite/ Soapstone, 2012-13 to 2014-15 (By Industries)

(In tonnes)

Industry	2012-13	2013-14(R)	2014-15(P)
All Industries	**368400**	**368300**	**368300**
Ceramic	28800(24)	28700(25)	29000(25)
Cosmetic	13300(16)	13300(16)	13000(16)
Paint	75200(32)	75200(32)	75200(32)
Paper	207300(42)	207300(42)	207300(42)
Pesticide	42100(17)	42100 (17)	42100 (17)
Rubber	700 (26)	700 (26)	700 (26)
Others (abrasive, chemical, electrode, electrical fertiliser, foundry, pharmaceutical, refractory, textile and vanaspati)	1000(29)	1000 (29)	1000 (29)

Figures rounded off.
Figures in parentheses denote the number of units in Organised Sector
*(*Paucity of data, hence consumption may not be complete).*
Plastic Industry also consumes talc for which data is not available.

POLICY

The Export-Import Policy incorporated in the Foreign Trade Policy, 2009-14, allows imports and exports of talc freely without restrictions under Heading no. 2526.

WORLD REVIEW

The world reserves of talc and pyrophyllite are quite large and sufficient to meet the world demand. The world reserves of talc (along with pyrophyllite) are given in (Table -12) Reserves of talc are not available separately.

The world production of talc declined to 6.8 million tonnes in 2014. Principal producing countries were China (32%), followed by Mexico (12%) and India (11%),Brazil (9%), USA (8%), and France (5%) (Table- 13).

Table – 12 : World Reserves of Talc and Pyrophyllite (By Principal Countries)

(In '000 tonnes)

Country	Reserves
World: Total (rounded off)	**Large**
Brazil	45000
China	Large
Finland	Large
France	Large
India*	75000
Japan	100000
Korea, Rep. of	14000
USA*	140000
Other countries	Large

Source: *Mineral Commodity Summaries, 2015.*
India's resources of talc/steatite/soapstone as per UNFC system as on 1.4.2010 are estimated at 269 million tonnes.
** Excludes pyrophyllite.*

Table – 13 : Production of Talc (By Principal Countries)

(In '000 tonnes)

Country	2012	2013	2014
World: Total	**6507**	**6936**	**6861**
Argentina[@]	24	24	24[e]
Australia[e]	135	104[e]	115[e]
Austria	135	135	135
Brazil[@]	460	593	600[e]
Canada	154	175	81
China[e]	2200	2200	2200
Eygpt	22	63	65[e]
Finland	396	362	381
France[e]	350	350	350
India	972	865	791
Iran	116	93	95
Italy	140	162	165[e]
Japan[e]	25	26	26
Korea, Dem Peoples Rep. of	50	50	50
Mexico	463	847	850[e]
Pakistan	56	93	72
Peru	32	33	29
Russia[e]	150	150	150
USA	515	542	535[e]
Other countries	112	69	147

Source: *World Mineral Production, 2010-2014.*
e : Estimated @ : Including talc,

FOREIGN TRADE

Exports

Exports of Talc/Steatite/Soapstone increased considerably to 1,58,405 tonnes in 2014-15 from 1,49,343 tonnes in the previous year. Out of the total steatite exported in 2014-15, steatite blocks constituted 1,056 tonnes, steatite lumps 7926 tonnes and steatite powder & others 1,49,423 tonnes. Steatite in different forms was exported mainly to Thailand (18%), Indonesia (11%), UAE (9%), Nigeria (7%), Bangladesh & Malaysia (6% each), Spain & Saudi Arabia (3% each) and Philippines & Japan (2% each). (Tables- 14 to 17).

Imports

Imports of steatite increased to 3,693 tonnes in 2014-15 from 2,935 tonnes in the previous year. Out of the total steatite imported in 2014-15, steatite lumps were 908 tonnes and steatite powder & others 2,785 tonnes. Imports of steatite blocks was nil in 2014-15. Steatite in different form was imported mainly from China (27%), Nepal (21%), Italy (18%) and Pakistan (15%). Tables- (18 to 20).

Table – 14 : Exports of Steatite (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹'000)
All Countries	**149343**	**2028614**	**158405**	**2156562**
Thailand	31477	354216	28432	318437
Indonesia	11250	187317	16750	299871
UAE	11245	131640	14530	181808
Philippines	8125	228208	3852	121806
Nigeria	12433	123804	11724	119904
Malaysia	9534	102495	9819	106460
Bangladesh	10543	105049	9909	106286
Japan	2568	67635	3590	89320
Saudi Arabia	5219	66311	4868	61172
Spain	2584	34364	5006	59957
Other countries	44365	627575	49925	691541

Table –15 : Exports of Steatite Blocks (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹'000)
All Countries	**2585**	**22406**	**1056**	**19327**
China	48	491	512	8116
Germany	-	-	107	3003
Bangladesh	312	2275	215	2243
Pakistan	15	909	14	921
Vietnam	3	255	14	849
Switzerland	270	4073	55	788
Poland	12	696	14	779
USA	23	1291	20	689
Japan	40	419	41	408
Egypt	---	---	7	360
Other countries	1862	11997	57	1171

Table –16 : Exports of Steatite Lumps (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹.'000)
All Countries	**9351**	**104043**	**7926**	**96594**
Italy	2575	36825	2350	34560
China	1008	21064	1209	26021
Japan	776	13211	851	15051
Bangladesh	2915	10624	2306	9584
Netherlands	73	1343	144	2253
Belgium	95	1956	119	2163
Vietnam	165	1086	249	1757
Indonesia	---	---	150	1397
Kenya	---	---	111	1037
Nepal	8	148	230	893
Other countries	1736	17786	207	1878

Table – 17 : Exports of Steatite Powder & Others (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹.'000)
All Countries	**137407**	**1902165**	**149423**	**2040641**
Thailand	31373	353541	28432	318437
Indonesia	11250	187317	16600	298474
UAE	11040	130329	14530	181788
Philippines	8125	228208	3852	121806
Nigeria	12433	123804	11724	119887
Malaysia	7764	93086	9711	105872
Bangladesh	7316	92150	7388	94460
Japan	1752	54004	2698	73862
Saudi Arabia	5119	65479	4868	61172
Spain	2584	34364	5006	59957
Other countries	38651	539883	44614	604926

Table – 18 : Imports of Steatite (By Countries)

Country	2013-14		2014-15(P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**2935**	**129217**	**3693**	**130505**
Italy	458	32397	659	45928
China	1566	60421	988	37923
USA	115	7140	186	10726
France	57	2216	198	6748
Pakistan	61	852	562	5870
Nepal	240	1285	767	5712
Japan	63	5236	22	4079
Portugal	--	--	64	3477
Korea Rep.of	1	43	15	1634
Thailand	++	42	29	1538
Other countries	374	19585	203	6870

Table –19: Imports of Steatite Lumps (By Countries)

Country	2013-14		2014-15(P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹'000)
All Countries	**69**	**1020**	**908**	**7135**
Pakistan	61	852	358	3686
Nepal	--	--	550	3449
Other countries	8	168	--	--

Table – 20 : Imports of Steatite Powder & Others (By Countries)

Country	2013-14		2014-15(P)	
	Qty (t)	Value (₹.'000)	Qty (t)	Value (₹.'000)
All Countries	**2866**	**128197**	**2785**	**123370**
Italy	458	32397	659	45928
China	1566	60421	988	37923
USA	115	7140	186	10726
France	57	2216	198	6748
Japan	55	5069	22	4079
Portugal	--	--	64	3477
Nepal	240	1285	217	2263
Pakistan	--	--	204	2184
Korea Rep. of	1	43	15	1634
Thailand	++	42	29	1538
Other countries	374	19584	203	6870

FUTURE OUTLOOK

The apparent domestic demand for talc-steatite was estimated to be 1.35 million tonnes by 2016-17 at 9% growth rate. India is one of the principal sources of 'lawa' grade talc suited for specialised purposes like low ceramic materials and of swan shaped talc. Indian talc is considered to be the second best in the world next to Italian talc. The world market conditions for talc minerals are steadily growing, and world talc demand is forecast to increase over the next five years by 2.3% annually. India has large resource base and well-developed production facilities that utilise modern pulverising techniques. Concerted efforts through R & D advancements are necessary to make Indian talc suitable for world market.