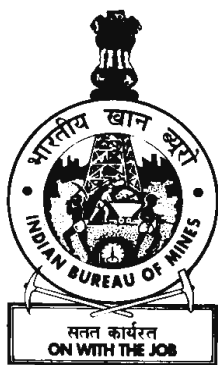


TALC, SOAPSTONE AND STEATITE



Indian Minerals Yearbook 2013

(Part- III : Mineral Reviews)

52nd Edition

TALC, SOAPSTONE AND STEATITE

(ADVANCE RELEASE)

**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

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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 talc activity in India.

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. 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

No exploration was carried out during the year 2012-13.

PRODUCTION, STOCKS & PRICES

The production of steatite in 2012-13 was 939 thousand tonnes which decreased by about 6% as compared to that in the previous year .

There were 133 reporting mines in 2012-13 as against 138 in the previous year. Besides production of steatite was reported by nine mines as associated mineral in 2012-13 as against eight mines in previous year . Ten principal producers accounted for nearly 70% of the total production during 2012-13. In both the years, the entire production of steatite was reported by private sector mines. About 88% of the total production in 2012-13 was contributed by 34 mines, each producing over 5,000 tonnes annually, whereas about 10% of the total output was reported by 34 mines, each producing 1,000 to 5,000 tonnes. The remaining about 2% of the total production was contributed by 74 mines with annual output below 1,000 tonnes .

About 50% of the production in 2012-13 was of grade other than insecticide and the remaining was of insecticide/DDT grade.

Rajasthan, the major producing state accounted for as much as 80% of the total production in 2012-13. Among the other states, the share of Uttarakhand was 10% and that of Andhra Pradesh was nearly 8% and rest of the 2% was reported from Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh and Tamil Nadu.

Mine-head stocks at the end of the year were 522 thousand tonnes as against 1,017 thousand tonnes in the beginning of the year.

The average daily employment of labour was 4,009 in 2012-13 as against 3,894 in the previous year.

**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	-	28721	60302
Cosmetics	18365	1049	6593	26008	203	1856	776	232	142	5610	-	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	-	-	200	-	360	1000
Others	871	104	810	1785	461	3630	2095	17	100	2209	-	8513	10297
Unclassified	5026	523	4140	9690	1105	3877	6567	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	3777	537	6109	11243
Bihar	-	-	149	149	-	-	-	-	-	3	-	3	152
Chhattisgarh	22	-	8	30	-	-	-	-	70	8	-	78	108
Gujarat	-	-	6	6	-	20	8	-	-	4	-	31	37
Jharkhand	-	-	-	-	-	-	73	2	4	243	16	338	338
Karnataka	35	-	182	217	49	124	217	11	208	1242	-	1851	2068
Kerala	-	-	-	-	-	-	-	-	-	14390	-	14390	14390
Madhya Pradesh	-	-	-	-	4	375	954	-	1679	6107	-	9119	9119
Maharashtra	-	-	-	-	-	-	-	-	2565	14262	-	16827	16827
Odisha	123	178	112	414	31	1	109	-	-	265	-	406	820
Rajasthan	28179	2705	14770	46193	6155	7323	19196	1686	837	50768	5	85969	132162
Sikkim	-	-	-	-	-	-	60	-	-	-	-	60	60
Tamil Nadu	-	-	333	333	194	210	1400	-	-	524	-	2328	2661
Uttarakhand	24684	4845	8021	37550	3228	4551	3876	4706	1524	23604	-	41487	79037

Figures rounded off.

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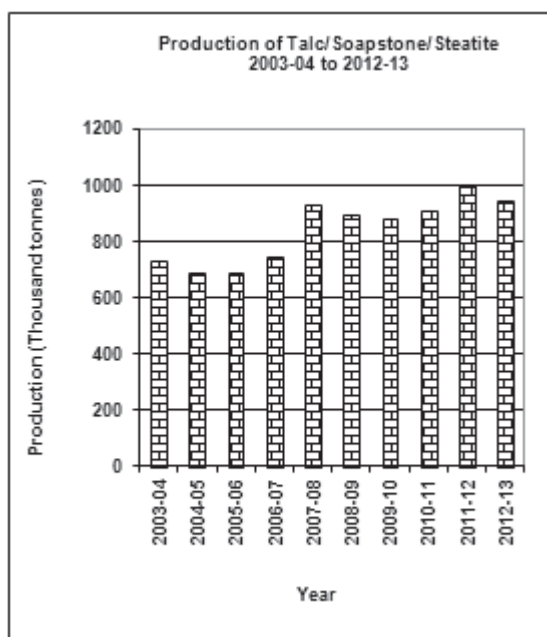


Table – 2: Principal Producers of Steatite, 2012-13

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), 4 th Floor Ajmeri Gate, MI Road, Jaipur – 302 001, Rajasthan.	Rajasthan	Bhilwara

Table - 2 (Concl.)

Name & address of producer	Location of mines	
	State	District
Rajasthan Mineral & Co. B-25, Gautam Marg, Hanuman Nagar Post-Vaishali Nagar, Jaipur -302 021, Rajasthan.	Rajasthan	Bhilwara
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
G. Radha Reddy* House No 4/194/3 Sunder Singh Colony, Dhone - 518 222 Distt - Kurnool, Andhra Pradesh.	Andhra Pradesh	Kurnool

*Associated with dolomite.

(Contd.)

TALC, SOAPSTONE AND STEATITE

Table – 3 : Production of Talc/Steatite/Soapstone, 2010-11 to 2012-13(P)
(By States)

(Qty in tonnes; value in ₹'000)

State	2010-11		2011-12		2012-13(P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	902686	618286	998438	878590	939022	825559
Andhra Pradesh	59336	25684	91646	34941	79546	25474
Bihar	2948	513	-	-	-	-
Chhattisgarh	5	2	316	95	440	132
Gujarat	2316	289	2981	426	2626	784
Jharkhand	-	-	4041	1144	1400	532
Madhya Pradesh	-	-	66	7	140	56
Rajasthan	664649	420656	738877	634367	756381	653515
Tamil Nadu	1295	259	-	-	282	76
Uttarakhand	172137	170883	160511	207610	98207	144990

Table – 4 : Production of Steatite, 2011-12 & 2012-13 (P)
(By Frequency Groups)

(Qty in tonnes)

Production group	No. of mines		Production for the group		Percentage in total production		Cumulative percentage	
	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13
All Groups	138(8)	133(9)	998438	939022	100.00	100.00	-	-
Up to 500	48(1)	61(2)	3821	7535	0.38	0.80	0.38	0.80
501 to 1000	7	11	5330	7675	0.54	0.82	0.92	1.62
1001 to 2000	14(1)	14(1)	22487	22019	2.25	2.35	3.17	3.97
2001 to 5000	31(3)	17(2)	105168	70339	10.53	7.49	13.70	11.46
5001 to 10000	18(1)	12(1)	144153	108726	14.44	11.58	28.14	23.04
10001 to 25000	12(2)	11(3)	193282	207370	19.36	22.08	47.50	45.12
25001 & above	8	7	524197	515358	52.50	54.88	100.00	100.00

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

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**Table – 5 : Production of Talc/Steatite/Soapstone, 2011-12 & 2012-13
(By Sector/States/Districts/Grades)**

(Qty in tonnes; value in ₹ '000)

State/District	2011-12					2012-13 (P)				
	No.of mines	Quantity			Value	No.of mines	Quantity			Value
		Insecticide/ DDT	Other than Insecticide	Total			Insecticide/ DDT	Other than Insecticide	Total	
India	138(8)	467673	530765	998438	878590	133(9)	473859	465163	939022	825559
Private Sector	138(8)	467673	530765	998438	878590	133(9)	473859	465163	939022	825559
Andhra Pradesh	35(4)	61170	30476	91646	34941	38(5)	65555	13991	79546	25474
Anantapur	8(1)	8425	5896	14321	9965	9(1)	3300	3542	6842	7563
Kurnool	27(3)	52745	24580	77325	24976	29(4)	62255	10449	72704	17911
Chhattisgarh	3	316	-	316	95	1	440	-	440	132
Kanker	3	316	-	316	95	1	440	-	440	132
Gujarat	1	2981	-	2981	426	1	2626	-	2626	784
Sabarkantha	1	2981	-	2981	426	1	2626	-	2626	784
Jharkhand	1	-	4041	4041	1144	1	1400	-	1400	532
Saraikela	1	-	4041	4041	1144	1	1400	-	1400	532
Madhya Pradesh	(1)	66	-	66	7	1(1)	20	120	140	56
Jabalpur	(1)	66	-	66	7	1(1)	20	-	20	2
Narsingpur	-	-	-	-	-	1	-	120	120	54
Rajasthan	63(3)	319490	419387	738877	634367	60(3)	340356	416025	756381	653515
Banswara	1	-	2425	2425	2449	1	-	1420	1420	1136
Bhilwara	13(2)	109266	174942	284208	146670	15(2)	148491	184328	332819	170853
Dungarpur	6	25657	15412	41069	26136	5	28548	14779	43327	30163
Jaipur	1	-	-	-	-	1	-	-	-	-
Karauli	2	2120	4160	6280	7046	2	2095	3715	5810	7023
Rajsamand	7	14095	7376	21471	11607	5	7676	11037	18713	7380
Udaipur	33(1)	168352	215072	383424	440459	31(1)	153546	200746	354292	436960
Tamil Nadu	-	-	-	-	-	1	282	-	282	76
Coimbatore	-	-	-	-	-	1	282	-	282	76
Uttarakhand	35	83650	76861	160511	207610	30	63180	35027	98207	144990
Almora	1	2850	-	2850	2024	2	640	-	640	454
Bageshwar	28	65522	76361	141883	185188	21	60966	31935	92901	139154
Pithoragarh	6	15278	500	15778	20398	7	1574	3092	4666	5382

Figures in parentheses indicate no. of associated mines with limestone, clay (others), quartz, asbestos, kaoline and dolomite.

**Table – 6 : Mine-head Stocks of Talc/ Steatite/Soapstone, 2012-13 (P)
(By States/Grades)**

(In tonnes)

State	At the beginning of the year			At the end of the year		
	Insecticide/ DDT	Other than Insecticide	Total	Insecticide/ DDT	Other than Insecticide	Total
India	282813	733815	1016628	356789	164922	521711
Andhra Pradesh	180763117	21193	25066	5885	30951	
Bihar	31	-	31	31	-	31
Chhattisgarh	670	-	670	770	-	770
Gujarat	1999	-	1999	1934	-	1934
Jharkhand	1000	-	1000	1979	-	1979
Karnataka	-	-	-	3	390	393
Madhya Pradesh	200	-	200	170	215	385
Odisha	342	-	342	342	-	342
Rajasthan	244635	715460	960095	315996	144388	460384
Tamil Nadu	-	-	-	107	-	107
Uttarakhand	15860	15238	31098	10391	14044	24435

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 consuming industries are given 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 °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

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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, 2008) prescribes use of off-white or cream-coloured material having a very smooth and slippery feel, passing completely through 75 micron 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 (NaCl)	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 Å 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.

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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 ₂ O ₃) % by mass, max.	–	1.5	2.5
Iron oxide (as Fe ₂ O 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 ₂ O + K ₂ O) % 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 ₂ O ₃	4% (max.)	–	–
Fe ₂ O 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 2012-13. About 56% consumption in 2012-13, was in Paper Industry, followed by Paint (20%), Pesticide (11%), Ceramic (8%) and Cosmetic (4%) industries. Nominal consumption was shared by Fertilizer, Rubber, Textile, Chemicals and other industries. Consumption of talc/steatite/soapstone during 2010-11 to 2012-13 is given in Table-11.

Table – 11 : Consumption of Talc/Steatite/ Soapstone, 2010-11 to 2012-13 (By Industries)

(In tonnes)			
Industry	2010-11	2011-12(R)	2012-13(P)
All Industries	368900	368800	368300
Ceramic	28100(23)	28900(24)	28800(24)
Cosmetic	12000 (16)	13700(16)	13300(16)
Paint	75000(32)	75200(32)	75200(32)
Paper	210100(42)	207300(42)	207300(42)
Pesticide	42100 (17)	42100 (17)	42100 (17)
Rubber	800 (26)	800 (26)	800 (26)
Others	800 (27)	800 (27)	800 (29)
(abrasive, chemical, electrode, electrical fertilizer, foundry, pharmaceutical, refractory, textile and vanaspati)			

Figures rounded off.

Figures in parentheses denote the number of units in organised sector reporting consumption.*

*(*includes actual reported consumption and estimates made whenever required)*

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 is estimated at 6.6 million tonnes in 2012. Principal producing countries were China (33%), followed by India (14%), USA (9%), Mexico(7%), Brazil & France (6% each) (Table -13).

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

(In '000 tonnes)	
Country	Reserves
World : Total (rounded)	Large
Brazil	230000
China	Large
Finland	Large
France	Large
India*	75000
Japan	100000
Korea, Rep. of	14000
USA*	140000
Other countries	Large

** Excludes pyrophyllite.*

Source: Mineral Commodity Summaries, 2014.

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

(In '000 tonnes)			
Country	2010	2011	2012
World Total	5700	6100	6600
Argentina@	25	24 ^e	25 ^e
Australia ^e	80	99	135
Austria	138	132	135
Brazil@	412	443	450 ^e
Canada	100	147	154
China ^e	2000	2200	2200
Egypt	35	13	21
Finland	419	429	396
France ^e	400	400	400
India*	902	958	950 ^e
Iran	96	59	60 ^e
Italy ^e	110	110	110
Japan ^e	24	24	25
Korea, Rep. of ^e	50	50	50
Mexico	01	51	463
Russia ^e	150	150	150
Spain	52	12	09
USA	604	616	623 ^e
Other countries	102	183	244

Source: World Mineral Production, 2008-2012.

@ Including talc, agalmatolite and pyrophyllite.

** India's production of talc/steatite/soapstone in 2010-11, 2011-12 and 2012-13 was 9,02,686 tonnes, 9,98,438 tonnes and 9,39,022 tonnes, respectively.*

FOREIGN TRADE

Exports

Exports of talc/steatite/soapstone increased considerably to 1,21,852 tonnes in 2012-13 from 1,00,562 tonnes in the previous year. Out of total steatite exported in 2012-13, steatite blocks constituted 3,278 tonnes, steatite lumps 4,625 tonnes and steatite powder & others 1,14,309 tonnes. Steatite in different forms was exported mainly to Thailand (18%), Nigeria (11%), Bangladesh (9%), UAE (8%), Malaysia & Indonesia (7% each), Kenya, Philippines & Saudi Arabia (4% each) and Japan (2%) (Tables - 14 to 17).

Imports

Imports of steatite decreased considerably to 2,905 tonnes in 2012-13 from 5,022 tonnes in the previous year. Out of total steatite imported in 2012-13, steatite lumps were 195 tonnes and steatite powder & others 2,570 tonnes. Imports of steatite blocks were 140 tonnes in 2012-13. Steatite in different form was imported mainly froms China (39%), Italy and Australia (13% each), Pakistan and Japan (6%) each.

**Table – 14 : Exports of Steatite
(By Countries)**

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	100562	913949	121852	1215354
Thailand	16061	100772	21589	179780
UAE	8824	73504	10257	109205
Bangladesh	5239	51580	10571	97675
Indonesia	5465	54079	7930	75924
Malaysia	6069	49456	8015	71439
Nigeria	4841	33592	12842	67004
Philippines	4882	43604	5202	62022
Saudi Arabia	3084	28092	4632	49704
Kenya	4853	37574	4428	39227
Japan	6473	67871	2518	37453
Other countries	34771	373825	33868	425921

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

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	5599	52364	3278	38773
Japan	3341	30117	969	9923
Bangladesh	416	1855	1216	5763
UK	7	552	178	3296
Netherlands	47	1532	53	2776
USA	35	2068	125	2742
China	625	5627	170	2324
Afghanistan	-	-	9	2184
Spain	-	-	10	1769
France	64	1294	66	1605
Pakistan	72	854	24	1250
Other countries	992	8465	458	5141

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

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	3004	21198	4265	49848
China	201	4084	1056	26049
Mozambique	-	-	520	4505
Vietnam	-	-	578	3692
Bangladesh	475	1045	1142	3372
Belgium	112	1862	166	3200
Germany	44	880	73	1570
Netherlands	161	2232	96	1499
Japan	60	910	118	1384
Spain	1013	3160	200	1244
Kenya	60	816	113	1136
Other countries	878	6209	203	2197

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

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	91959	840387	114309	1126734
Thailand	16061	100772	21589	179780
UAE	8602	72797	10254	108944
Bangladesh	4348	48680	8213	88540
Indonesia	5465	54079	7930	75924
Malaysia	5875	47776	7911	70707
Nigeria	4839	33562	12842	67004
Philippines	4882	43604	5202	62022
Saudi Arabia	3084	28092	4587	49415
Kenya	4793	36758	4300	37729
Sri Lanka	1496	18354	2355	29788
Other countries	32514	355913	29126	356881

**Table – 18 : Imports of Steatite
(By Countries)**

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	5022	141498	2905	121394
China	2365	71729	1122	42056
Italy	196	10252	392	23409
Austria	151	7626	379	17163
Japan	361	17171	160	13841
USA	111	6391	67	4678
Belgium	19	1374	79	4026
France	48	2166	70	2702
Germany	66	2087	74	2563
Pakistan	1037	6118	175	1845
Korea, Rep. of	2	165	13	1282
Other countries	666	16419	374	7829

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

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	868	4923	195	2367
Pakistan	688	4072	175	1845
China	-	-	20	522
Other countries	180	851	-	-

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

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4122	136174	2570	118328
China	2365	71729	1102	41534
Italy	196	10252	392	23409
Austria	151	7626	379	17163
Japan	361	17171	160	13841
USA	111	6391	67	4678
Belgium	19	1374	79	4026
France	48	2166	70	2702
Germany	66	2087	74	2563
Korea, Rep. of	2	165	13	1282
Netherlands	48	1520	22	1082
Other countries	755	15693	212	6048

**Table – 21: Imports of Steatite Blocks
(By Countries)**

Country	2011-12		2012-13	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	32	401	140	699
Nepal	-	-	140	699
Other countries	32	401	-	-

FUTURE OUTLOOK

The apparent domestic demand for talc-steatite was estimated to be 879 thousand tonnes in 2011-12 and 1.35 million tonnes by 2016-17 at 9% growth rate. India is one of the principal sources of 'lawar' grade talc suited for specialised purposes like low ceramic materials and of sawn 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. India has large resource base and well-developed production facilities that utilise modern pulverising techniques. Therefore, concerted efforts are necessary to increase exports by making Indian talc suitable through R & D efforts for world market.