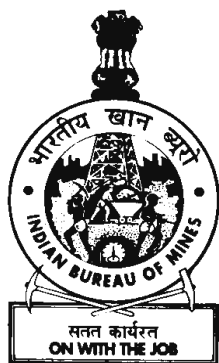


TALC, SOAPSTONE AND STEATITE



Indian Minerals Yearbook 2014

(Part- III : Mineral Reviews)

53rd 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 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. 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 by any central/state govt. agency. during the year 2013-14.

PRODUCTION, STOCKS & PRICES

The production of Talc/ steatite/soapstone in 2013-14 at 865 thousand tonnes decreased by about 11% as compared to that in the previous year.

There were 111 reporting mines in 2013-14 as against 141 in the previous year. Besides production of steatite was reported by eleven mines as associated mineral in 2013-14 as against nine mines in previous year. Ten principal producers accounted for nearly 72% of the total production during 2013-14. In both the years entire production of steatite was reported by private sector mines. About 86% of the total production in 2013-14 was contributed by 28 mines, each producing over 5,000 tonnes annually, whereas about 13% of the total output was reported by 43 mines, each producing 1,000 to 5,000 tonnes. The remaining about 1% of the total production was contributed by 51 mines with annual output below 1,000 tonnes.

About 51% of the production in 2013-14 was of grade other than insecticide and the remaining was of insecticide/DDT grade.

Rajasthan, the major producing state accounted for as much as 83% of the total production in 2013-14. Among the other states, the share of Uttarakhand was 9 % and that of Andhra Pradesh was nearly 7 % and rest 1 % was reported from Gujarat, Madhya Pradesh and Tamil Nadu.

Mine-head stocks at the end of the year were 569 thousand tonnes as against 516 thousand tonnes in the beginning of the year.

The average daily employment of the labour was 2,526 in 2013-14 as against 3,685 in the previous year.

TALC, SOAPSTONE AND STEATITE

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

Grade/States	(In '000 tonnes)												
	Reserves				Remaining resources						Total resources (A+B)		
	Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333		Reconnaissance STD334	
		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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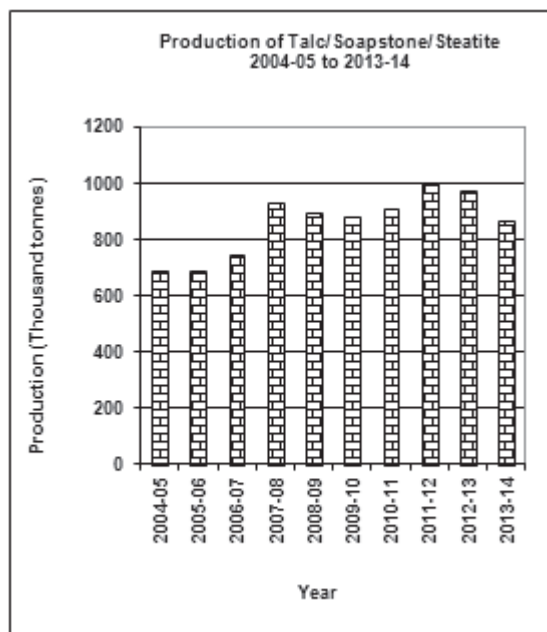


Table – 2: Principal Producers of Talc/Steatite/ Soapstone 2013-14

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

(Contd.)

Table - 2 (Concl.d.)

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
Raj Kumar Pareek Vill. & Post Jalia Via Bigod, Tehsil-Malagarh, Ajmer-311 601	Rajasthan	Bhilwara
Krishna Mines & Traders 3-B, Industrial Estate Pratap Nagar, Udaipur 313 003 Rajasthan.	Rajastha	Rajasamand, Udaipur

TALC, SOAPSTONE AND STEATITE

Table – 3 : Production of Talc/Steatite/Soapstone, 2011-12 to 2013-14 (P)
(By States)

(Qty in tonnes; Value in ₹'000)

State	2011-12		2012-13		2013-14(P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	998438	878590	971778	888390	865126	905216
Andhra Pradesh	91646	34941	85117	30980	62239	29293
Chhattisgarh	316	95	440	132	-	-
Gujarat	2981	426	2626	783	1301	403
Jharkhand	4041	1144	1400	532	-	-
Madhya Pradesh	66	7	140	56	1878	901
Rajasthan	738877	634367	766742	681223	717704	744080
Tamil Nadu	-	-	991	297	1280	384
Uttarakhand	160511	207610	114322	174387	80724	130155

Table – 4 : Production of Talc/Steatite/Soapstone 2012-13& 2013-14 (P)
(By Frequency Groups)

(Qty in tonnes)

Production group	No. of mines		Production for the group		Percentage in total production		Cumulative percentage	
	2012-13	2013-14 (P)	2012-13	2013-14 (P)	2012-13	2013-14 (P)	2012-13	2013-14(P)
All Groups	141(9)	111(11)	971778	865126	100.00	100.00	-	-
Up to 500	62(2)	39(3)	6350	3320	0.65	0.38	0.65	0.38
501 to 1000	12	9	8912	7195	0.92	0.83	1.57	1.21
1001 to 2000	16(1)	14(2)	25180	23923	2.59	2.77	4.16	3.98
2001 to 5000	19(2)	23(4)	75731	89698	7.79	10.37	11.95	14.35
5001 to 10000	13(1)	10(1)	112414	76301	11.57	8.82	23.52	23.17
10001 to 25000	12(3)	10(1)	221940	173434	22.84	20.05	46.36	43.22
25001 & above	7	6	521251	4912255	53.64	56.78	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, 2012-13 & 2013-14 (P)
(By Sector/States/Districts/Grades)

(Qty in tonnes; Value in ₹ '000)

State/District	2012-13					2013-14(P)				
	No.of mines	Quantity			Value	No.of mines	Quantity			Value
		Insecticide/ DDT	Other than Insecticide	Total			Insecticide/ DDT	Other than Insecticide	Total	
India	141(9)	500122	471656	971778	888390	111(11)	421902	443224	865126	905216
Private Sector	141(9)	500122	471656	971778	888390	111(11)	421902	443224	865126	905216
AndhraPradesh	39(5)	70111	15006	85117	30980	29(7)	48200	14039	62239	29293
Anantapur	9(1)	3416	4793	8209	9872	8(2)	2841	5869	8710	13959
Cuddapah	-	-	-	-	-	(1)	402	-	402	141
Kurnool	30(4)	66695	10213	76908	21108	21(4)	44957	8170	53127	15193
Chhattisgarh	1	440	-	440	132	-	-	-	-	-
Kanker	1	440	-	440	132	-	-	-	-	-
Gujarat	1	2626	-	2626	783	1	1301	-	1301	403
Sabarkantha	1	2626	-	2626	783	1	1301	-	1301	403
Jharkhand	1	1400	-	1400	532	-	-	-	-	-
Saraikela	1	1400	-	1400	532	-	-	-	-	-
Madhya Pradesh	1(1)	20	120	140	56	1(1)	20	1858	1878	901
Jabalpur	(1)	20	-	20	2	(1)	20	-	20	2
Narsimhapur	1	-	120	120	54	1	-	1858	1858	899
Rajasthan	65(3)	353872	412870	766742	681223	64(3)	320191	397513	717704	744080
Ajmer#	-	-	-	-	-	1	-	-	-	-
Banswara	1	-	1420	1420	1671	1	-	760	760	608
Bhilwara	15(2)	152940	188691	341631	181517	17(2)	151235	194786	346021	233647
Dungarpur	6	28341	15315	43656	35286	4	23493	5016	28509	18543
Jaipur#	1	-	-	-	-	1	-	-	-	-
Karauli	2	2095	3715	5810	7264	2	1840	1730	3570	4019
Rajsamand	5	16367	2698	19065	10466	7	4482	19501	23983	13343
Udaipur	35(1)	154129	201031	355160	445019	31(1)	139141	175720	314861	473920
Tamil Nadu	1	991	-	991	297	1	1280	-	1280	384
Coimbatore	1	991	-	991	297	1	1280	-	1280	384
Uttarakhand	32	70662	43660	114322	174387	15	50910	29814	80724	130155
Almora	2	640	-	640	454	-	-	-	-	-
Bageshwar	23	68948	40078	109026	170433	13	50910	28936	79846	128838
Pithoragarh	7	1074	3582	4656	3500	2	-	878	878	1317

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

Table – 6 : Mine-head stocks of Talc/ Steatite/Soapstone, 2013-14 (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	355930	160508	516438	438138	131098	569236
Andhra Pradesh	22139	3866	26005	15807	4215	20022
Bihar	31	-	31	31	-	31
Chhattisgarh	770	-	770	-	-	-
Gujarat	1934	-	1934	1745	-	1745
Jharkhand	1979	-	1979	1979	-	1979
Karnataka	3	390	393	3	390	393
Madhya Pradesh	256	215	471	115	2	117
Odisha	342	-	342	-	-	-
Rajasthan	316185	142148	458333	406243	115553	521796
Tamil Nadu	107	-	107	51	-	51
Uttarakhand	12184	13889	26073	12164	10938	23102

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 (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 2013-14. About 56% consumption in 2013-14, 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 2011-12 to 2013-14 is given in Table-11.

Table – 11 : Estimated Consumption of Talc/Steatite/Soapstone, 2011-12 to 2013-14 (P)
(By Industries)

(In tonnes)			
Industry	2011-12	2012-13(R)	2013-14(P)
All Industries	368800	368400	368100
Ceramic	28900(24)	28800(24)	28500(24)
Cosmetic	13700(16)	13300(16)	13300(16)
Paint	75200(32)	75200(32)	75200(32)
Paper	207300(42)	207300(42)	207300(17)
Pesticide	42100(17)	42100 (17)	42100 (17)
Rubber	800 (26)	700 (26)	700 (26)
Others (abrasive, chemical, electrode, electrical fertilizer, foundry, pharmaceutical, refractory, textile and vanaspati)	800 (27)	1000 (29)	1000 (29)

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 8.0 million tonnes in 2013. Principal producing countries were China (28%), followed by India and Mexico (11% each), USA (7%), Brazil (6%) and France (5%) (Table -13).

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

(In '000 tonnes)	
Country	Reserves
World : Total (rounded)	Large
Brazil	45000
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, 2015.

Indias resources of talc/steatite/soapstone as per UNFC system as on 1.4.2010 are estimated at 269 million tonnes.

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

(In '000 tonnes)			
Country	2011	2012	2013
World Total	7400	7700	8000
Argentina@	24	24	24 ^e
Australia ^e	99	135	104
Austria	132	135	135
Brazil@	444	460	500 ^e
Canada	147	154	175
China ^e	2000	2200 ^e	2200 ^e
Egypt	13	22	21 ^e
Finland	429	396	362
France ^e	400	400 ^e	400 ^e
India*	998	972	865
Italy ^e	110	110	110
Japan ^e	24	25	26
Korea, Demo Rep.	50	50	50
Mexico	51	463	847
Russia ^e	150	150	150
Spain	12	09	8
USA	616	515	531 ^e
Other countries	1701	1480	1492

Source: World Mineral Production, 2009-2013.

@ Including talc, agalmatolite and pyrophyllite.

Indias production of talc/steatite/soapstone during 2011-12, 2012-13 and 2013-14 was 998 thousand tonnes, 972 thousand tonnes and 865 thousand tonnes, respectively.

FOREIGN TRADE

Exports

Exports of talc/steatite/soapstone increased considerably to 1,49,343 tonnes in 2013-14 from 1,17,568 tonnes in the previous year. Out of total steatite exported in 2013-14, steatite blocks constituted 2,585 tonnes, steatite lumps 9351 tonnes and steatite powder & others 1,37,407 tonnes. Steatite in different forms was exported mainly to Thailand (21%), Nigeria (8%), Bangladesh (7%), UAE, Nigeria and Indonesia (8% each) Malaysia (6%), Philippines (5%), Kenya and Saudi Arabia (3%) and Japan (2%) (Tables - 14 to 17).

Imports

Imports of steatite increased slightly to 2,935 tonnes in 2013-14 from 2,905 tonnes in the previous year. Out of total steatite imported in 2013-14, steatite lumps were 69 tonnes and steatite powder & others 2,866 tonnes. Imports of steatite blocks was nil in 2013-14. Steatite in different form was imported mainly froms China (53%), Italy (16%) Austria (7%) and Japan (4%).

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	117568	1215354	149343	2028614
Thailand	21589	179780	31477	354216
Philippines	5202	62022	8125	228208
Indonesia	7930	75924	11250	187317
UAE	10257	109205	11245	131640
Nigeria	8880	67004	12433	123804
Bangladesh	10571	97675	10543	105049
Malaysia	8015	71439	9534	102495
Japan	2518	37453	2568	67635
Saudi Arab	4632	49704	5219	66311
Kenya	4428	39227	5039	49879
Other Countries	33546	425921	41910	612060

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	3278	38772	2585	22406
Malaysia	104	732	1458	5009
Switzerland	80	1054	270	4073
Bangladesh	1216	5763	312	2275
Netherlands	53	2776	23	1617
USA	125	2742	23	1291
Nepal	80	627	109	1290
Jordan	1	153	12	969
Pakistan	24	1250	15	909
Poland	-	-	12	696
Singapore	-	-	17	685
Other countries	1595	23675	334	3592

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	4269	49848	9351	104043
Italy	25	259	2575	36825
China	1056	26049	1008	21064
Japan	118	1384	776	13211
Yemen Republic	-	-	1036	10678
Bangladesh	1142	3372	2915	10624
Malaysia	-	-	312	4400
Belgium	166	3200	95	1956
Netherlands	96	1499	73	1343
Vietnam Soc Rep	578	3692	165	1086
UAE	-	-	196	906
Other Countries	1088	10393	200	1950

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	110021	1126734	137407	1902165
Thailand	21589	179780	31373	353541
Philippines	5202	62022	8125	228208
Indonesia	7930	75924	11250	187317
UAE	10254	108944	11040	130329
Nigeria	8880	67004	12433	123804
Malaysia	7911	70707	7764	93086
Bangladesh	8213	88540	7316	92150
Saudi Arabia	4587	49415	5119	65479
Japan	1431	26146	1752	54004
Kenya	4300	37729	5034	49599
Other countries	29724	360523	36201	524648

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	2906	121394	2935	129217
China	1120	41337	1566	60421
Italy	417	24517	458	32397
Austria	447	19827	191	11266
USA	64	5835	115	7140
Japan	193	14875	63	5236
Germany	13	653	37	2312
France	70	2702	57	2216
Belgium	79	4026	32	2169
Nepal	140	699	240	1285
U K	4	696	8	1218
Other Countries	359	6227	168	3557

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	195	2365	69	1020
Pakistan	175	1845	61	852
China	-	-	8	167
Other countries	20	522	++	1

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	2571	118328	2866	128197
China	1100	40814	1566	60421
Italy	417	24517	458	32397
Austria	447	19827	191	11266
USA	64	5835	115	7140
Japan	193	14875	55	5069
Germany	13	653	37	2312
France	70	2702	57	2216
Belgium	79	4026	32	2169
Nepal	-	-	240	1285
UK	4	696	8	1218
Other countries	184	4383	107	2704

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

Country	2012-13		2013-14	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	140	699	-	-
Nepal	140	699	-	-

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 'Iawa' 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.