

TALC, SOAPSTONE AND STEATITE



# Indian Minerals Yearbook 2012

(Part- III : Mineral Reviews)

51<sup>st</sup> 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](mailto:cme@ibm.gov.in)  
Website: [www.ibm.gov.in](http://www.ibm.gov.in)

February, 2014

# 47 Talc, Soapstone and Steatite

**T**alc is a hydrous magnesium silicate. In trade, 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 that give talc a wide variety of uses and markets are its extreme softness and smoothness, good lustre and sheen, high slip and lubricating property, low moisture content, ability to absorb oil and grease, chemical inertness, high fusion point, low electrical and 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 are 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

In 2011-12, GSI in collaboration with DMM, West Bengal carried out reconnaissance survey around Lepcha Basti and Singla in extension area Gok Karmi area of Darjeeling district. Three trenches have been dug to trace the strike extension of the talc lens. Trench-1, exposed was 3.2 m wide, both lumpy and platy talc. Trench-2 (which lies 40m west of Trench-1) exposed 2.5 m wide talc with impurities like Fe, mud and clay.

The continuity of the talc lens has been traced down over a distance of about 120m towards SE of

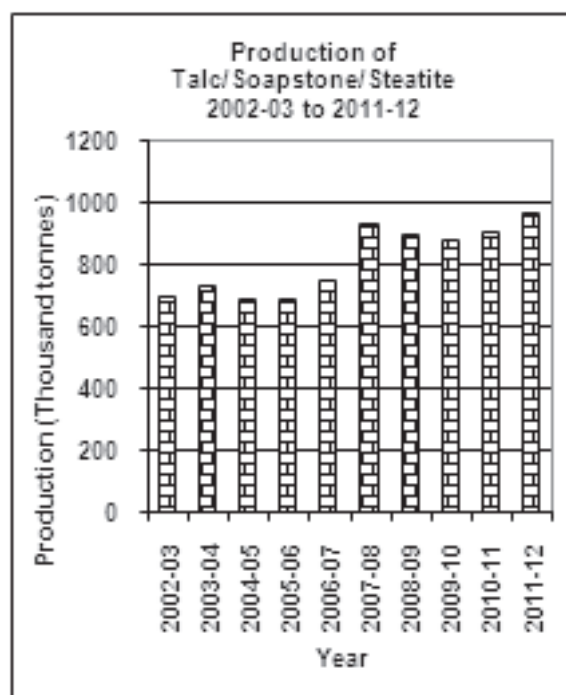
Trench-1. where 1.5m of talc body of both platy and lumpy type has been exposed.

## PRODUCTION, STOCKS & PRICES

The production of steatite in 2011-12 at 959 thousand tonnes increased by about 6% as compared to that in the previous year.

There were 118 reporting mines in 2011-12 as against 123 in the previous year. Besides, production of steatite was reported by eight mines as associated mineral in 2011-12 and four mines in previous year. Twenty principal producers accounted for nearly 80% of the total production during 2011-12. In both the years entire production of steatite was reported by private sector mines. About 86% production in 2011-12 was contributed by 40 mines, each producing over 5,000 tonnes annually, whereas 13% of the total output was reported by 51 mines, each producing 1000 to 5000 tonnes. The remaining about 1% of the total production was contributed by 35 mines with annual output below 1,000 tonnes.

About 53% of the production in 2011-12 was of grade other than insecticide and the remaining was of insecticide/DDT grade.



TALC, SOAPSTONE AND STEATITE

**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		Feasibility STD211	Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334		
		STD121	STD122							STD221
<b>All India</b>	<b>54615</b>	<b>8772</b>	<b>26640</b>	<b>90026</b>	<b>6403</b>	<b>7256</b>	<b>115195</b>	<b>558</b>	<b>178996</b>	<b>269023</b>
<b>By Grades</b>										
Paper & textile	18852	3926	8803	31581	5201	430	13718	-	28721	60302
Cosmetics	18365	1049	6593	26008	232	142	5610	-	8819	34827
Insecticide	11006	2795	5551	19353	941	217	12661	42	31194	50547
Ceramic	410	-	558	968	-	35	212	344	724	1691
Paint	84	374	182	640	-	-	200	-	360	1000
Others	871	104	810	1785	17	100	2209	-	8513	10297
Unclassified	5026	523	4140	9690	11	6276	71195	167	89188	98878
Not-known	-	-	3	3	2	56	9388	5	11477	11479
<b>By States</b>										
Andhra Pradesh	1031	1044	3060	5135	-	369	3777	537	6109	11243
Bihar	-	-	149	149	-	-	3	-	3	152
Chhattisgarh	22	-	8	30	-	70	8	-	78	108
Gujarat	-	-	6	6	-	-	4	-	31	37
Jharkhand	-	-	-	-	-	4	243	16	338	338
Karnataka	35	-	182	217	11	208	1242	-	1851	2068
Kerala	-	-	-	-	-	-	14390	-	14390	14390
Madhya Pradesh	-	-	-	4	-	1679	6107	-	9119	9119
Maharashtra	-	-	-	-	-	2565	14262	-	16827	16827
Odisha	123	178	112	414	-	-	265	-	406	820
Rajasthan	28179	2705	14770	46193	1686	837	50768	5	85969	132162
Sikkim	-	-	-	-	-	-	-	-	60	60
Tamil Nadu	-	-	333	333	-	-	524	-	2328	2661
Uttarakhand	24684	4845	8021	37550	4706	1524	23604	-	41487	79037

Figures rounded off.

TALC, SOAPSTONE AND STEATITE

Rajasthan, the major producing state of steatite accounted for as much as 76% of the total production in 2011-12. Among the other states, the share of Uttarakhand was 15% and that of Andhra Pradesh was nearly 8%. Nominal production was also reported from Chhattisgarh, Gujarat, Jharkhand and Madhya Pradesh (Tables 2 to 5).

**Table – 2: Principal Producers of Steatite, 2011-12**

Name & address of producer	Location of mines	
	State	District
Associated Soapstone Distributing Co. (P) Ltd, 24, Akashwani Marg, P.B.No. 3 Udaipur- 313 003, Rajasthan.	Rajasthan	Udaipur
Udaipur Mineral Development Syndicate (P) Ltd, Golcha Trade Centre (GTC), 4 <sup>th</sup> 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
Ratanlal Deedwaniya D-4,Nagori Garden, Bhilwara, 311 001, Rajasthan.	Rajasthan	Bhilwara
Nalwaya Mineral Industries (P) Ltd, 7/A, Bapu Bazar, Udaipur - 313 001, Rajasthan.	Rajasthan	Dungarpur
Jai Polymers Co. (P) Ltd, Chirwa Ghat, Amberi, Udaipur, Rajasthan.	Rajasthan	Udaipur
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
Mahaveer Trading Co., E – 263, Mewar Industrial Area, Madri, Udaipur – 313 00, Rajasthan.	Rajasthan	Udaipur

(Contd.)

Table - 2 (Concl.)

Name & address of producer	Location of mines	
	State	District
Parvatiya Mines, Rampur Road, Haldwani, Dist. Nainital, Uttara khand.	Uttarakhand	Bageshwar
Buddhra Mineral Aangan 7, New fatteh Pura, Tah-Girwa, Dist –Udaipur Rajasthan-313001.	Rajasthan	Udaipur
G. Radha Reddy* House No 4/194/3 Sunder Singh Colony, Dhone, Dist - Kurnool.	Andhra Pradesh	Kurnool
Krishna Minerals & Traders 3/B Industrial Estate, Pratapnagar, Udaipur 313 005, Rajasthan.	Rajasthan	Rajasamand Udaipur
Ramchandra Bhatt Village –Artoli, Post-Panuawanaula, Dist-Almora, Uttarakhand.	Uttarakhand	Almora
R. B. Mining & Company# C/o Suzuki Textiles Ltd, P.O-Mandal, Rajasthan-311 403.	Rajasthan	Bhilwara
Ashoka Mineral 20 Industrial Estate, Pratapnagar, Udaipur-313 003, Rajasthan.	Rajasthan	Udaipur
Nandini Mineral Industries, B. Sridhar Reddy, 3-1183, BPL Road. P.O. Bethamcherla, Distt. Kurnool – 518 599, Andhra Pradesh.	Andhra Pradesh	Kurnool
B. Venkateswaralu Old Bus stand, P.O.Bethamecherla 518 599, Distt. Kurnool, Andhra Pradesh.	Andhra Pradesh	Kurnool
Tarun Minerals Village & post- Thana, Dist- Dungarpur, Rajasthan.	Rajasthan	Dungarpur
Rajkumar Pareek At/post- Jaliya, Dist- Bhilwara, Rajasthan.	Rajasthan	Bhilwara

\*Associated with dolomite.

# Associated with Kaoline.

TALC, SOAPSTONE AND STEATITE

**Table – 3 : Production of Talc/Steatite/Soapstone, 2009-10 to 2011-12(P)**  
(By States)

(Qty. in tonnes; value in ₹'000)

State	2009-10		2010-11		2011-12(P)	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>India</b>	<b>876548</b>	<b>713708</b>	<b>902686</b>	<b>618286</b>	<b>958746</b>	<b>788833</b>
Andhra Pradesh	77064	24389	59336	25684	75831	28027
Bihar	2235	380	2948	513	-	-
Chhattisgarh	128	32	5	2	316	95
Gujarat	2660	396	2316	289	2981	425
Jharkhand	-	-	-	-	4041	1131
Madhya Pradesh	-	-	-	-	66	7
Rajasthan	647691	529722	664649	420656	730501	593740
Tamil Nadu	1000	200	1295	259	-	-
Uttarakhand	145770	158589	172137	170883	145010	165408

**Table – 4 : Production of Steatite, 2010-11 & 2011-12 (P)**  
(By Frequency Groups)

(Qty in tonnes)

Production group	No. of mines		Production for the group		Percentage in total production		Cumulative percentage	
	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12	2010-11	2011-12
<b>All Groups</b>	<b>123 (4)</b>	<b>118 (8)</b>	<b>902686</b>	<b>958746</b>	<b>100.00</b>	<b>100.00</b>	-	-
Up to 500	32	26(1)	6409	4250	0.71	0.45	0.71	0.45
501 to 1000	8	8	5777	5931	0.64	0.62	1.35	1.07
1001 to 2000	22 (1)	16 (1)	32897	24735	3.64	2.58	4.99	3.65
2001 to 5000	22 (2)	31(3)	76895	96288	8.52	10.04	13.51	13.69
5001 to 10000	24	18(1)	177965	142020	19.72	14.81	33.23	28.50
10001 to 25000	9 (1)	11(2)	144509	162026	16.01	16.90	49.24	45.40
25001 & Above	6	8	458234	523496	50.76	54.60	100.00	100.00

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

TALC, SOAPSTONE AND STEATITE

**Table – 5 : Production of Talc/Steatite/Soapstone, 2010-11 & 2011-12  
(By Sector/States/Districts/Grades)**

(Qty. in tonnes; value in ₹ '000)

State/District	2010-11					2011-12 (P)				
	No. of mines	Quantity			Value	No. of mines	Quantity			Value
		Insecticide/ DDT	Other than Insecticide	Total			Insecticide/ DDT	Other than Insecticide	Total	
<b>India</b>	<b>123(4)</b>	<b>349856</b>	<b>552830</b>	<b>902686</b>	<b>618286</b>	<b>118(8)</b>	<b>450732</b>	<b>508014</b>	<b>958746</b>	<b>788833</b>
Private Sector	123 (4)	349856	552830	902686	618286	118(8)	450732	508014	958746	788833
<b>Andhra Pradesh</b>	<b>25 (2)</b>	<b>38967</b>	<b>20369</b>	<b>59336</b>	<b>25684</b>	<b>28(4)</b>	<b>52583</b>	<b>23248</b>	<b>75831</b>	<b>28027</b>
Anantapur	5	-	5869	5869	6141	6(1)	5790	7118	12908	8302
Kurnool	20 (2)	38967	14500	53467	19543	22(3)	46793	16130	62923	19725
<b>Bihar</b>	<b>1</b>	<b>2948</b>	<b>-</b>	<b>2948</b>	<b>513</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Munger	1	2948	-	2948	513	-	-	-	-	-
<b>Chhattisgarh</b>	<b>1</b>	<b>5</b>	<b>-</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>316</b>	<b>-</b>	<b>316</b>	<b>95</b>
Kanker	1	5	-	5	2	3	316	-	316	95
<b>Gujarat</b>	<b>1</b>	<b>2316</b>	<b>-</b>	<b>2316</b>	<b>289</b>	<b>1</b>	<b>2981</b>	<b>-</b>	<b>2981</b>	<b>425</b>
Sabarkantha	1	2316	-	2316	289	1	2981	-	2981	425
<b>Jharkhand</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>4041</b>	<b>-</b>	<b>4041</b>	<b>1131</b>
Saraikela	-	-	-	-	-	1	4041	-	4041	1131
<b>Madhya Pradesh</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(1)</b>	<b>66</b>	<b>-</b>	<b>66</b>	<b>7</b>
Jabalpur	-	-	-	-	-	(1)	66	-	66	7
<b>Rajasthan</b>	<b>56(2)</b>	<b>237122</b>	<b>427527</b>	<b>664649</b>	<b>420656</b>	<b>52(3)</b>	<b>317001</b>	<b>413500</b>	<b>730501</b>	<b>593740</b>
Banswara	1	-	1280	1280	1024	1	-	2425	2425	1940
Bhilwara	5(1)	58424	172674	231098	142155	7(2)	108566	173688	282254	153210
Dausa	1	424	-	424	85	-	-	-	-	-
Dungarpur	6	11588	33332	44920	26858	6	28112	14576	42688	25986
Jaipur	1	-	4590	4590	3277	-	-	-	-	-
Karauli	2	650	4200	4850	4363	2	2120	4160	6280	7046
Rajsamand	7	5242	11026	16268	6633	7	8062	13409	21471	9725
Udaipur	33(1)	160794	200425	361219	236261	29(1)	170141	205242	375383	395833
<b>Tamil Nadu</b>	<b>1</b>	<b>1295</b>	<b>-</b>	<b>1295</b>	<b>259</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Coimbatore	1	1295	-	1295	259	-	-	-	-	-
<b>Uttarakhand</b>	<b>38</b>	<b>67203</b>	<b>104934</b>	<b>172137</b>	<b>170883</b>	<b>33</b>	<b>73744</b>	<b>71266</b>	<b>145010</b>	<b>165408</b>
Almora	1	-	5005	5005	3554	1	1760	1090	2850	2024
Bageshwar	28	62514	86758	149272	154942	26	57103	69279	126382	143377
Pithoragarh	9	4689	13171	17860	12387	6	14881	897	15778	20007

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

Mine-head stocks at the end of the year were 1008 thousand tonnes as against 825 thousand tonnes at the beginning of the year (Table - 6).

The average daily employment of the labour was 3,259 in 2011-12 as against 3,748 in the previous year. The domestic prices of talc/ steatite/ soapstone are furnished in the General Review on 'Prices'.

## TALC, SOAPSTONE AND STEATITE

**Table – 6 : Mine-head Stocks of Talc/ Steatite/Soapstone, 2011-12(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
<b>India</b>	<b>168453</b>	<b>656716</b>	<b>825168</b>	<b>27088</b>	<b>737014</b>	<b>1007802</b>
Andhra Pradesh	9652	1721	11373	17122	3373	20495
Bihar	31	-	31	31	-	31
Chhattisgarh	359	-	359	670	-	670
Gujarat	15	-	15	1999	-	1999
Jharkhand	-	-	-	1000	-	1000
Madhya Pradesh	-	-	-	200	-	200
Odisha	-	-	-	342	-	342
Rajasthan	145960	634733	780693	234118	718295	952413
Tamil Nadu	6	-	6	-	-	-
Uttarakhand	12430	20262	32692	15306	15346	30652

**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 developments, 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 graded into 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

Since the industry is demanding fine powder, the technology is advancing in this direction. The pulverisers/hammer mills developed and manufactured in India are capable of giving 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; while talc particles size 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 sought after in cosmetic, filler and weighing



TALC, SOAPSTONE AND STEATITE

applications. Talc having more than 92% brightness, less than 1% Fe<sub>2</sub>O<sub>3</sub> and less than 1.5% CaCO<sub>3</sub> 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 given 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 <sub>2</sub> O <sub>3</sub> ) 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 <sup>0</sup> (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.

TALC, SOAPSTONE AND STEATITE

**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 <sub>2</sub> ) % by mass, min	–	60	56
Alumina (as Al <sub>2</sub> O <sub>3</sub> ) % by mass, max	–	1.5	2.5
Iron oxide (as Fe <sub>2</sub> O <sub>3</sub> ) % 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 <sub>2</sub> O + K <sub>2</sub> 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 <sub>2</sub>	60%	0.1-1.0%	–
CaO	1% (max)	–	–
Al <sub>2</sub> O <sub>3</sub>	4% (max)	–	–
Fe <sub>2</sub> O <sub>3</sub>	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 2011-12 and 369 thousand tonnes in 2010-11. About 56% consumption in 2011-12, 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 2009-10 to 2011-12 is given in Table-11.

## 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.

**Table – 11 : Reported Consumption of Talc/ Steatite/Soapstone, 2009-10 to 2011-12 (By Industries)**

Industry	(In tonnes)		
	2009-10	2010-11(R)	2011-12(P)
<b>All Industries</b>	<b>375300</b>	<b>368900</b>	<b>367900</b>
Ceramic	24000(22)	28100(23)	28100(23)
Cosmetic	12000 (14)	12000 (16)	13600(16)
Paint	74300 (31)	75000(32)	75200(32)
Paper	221300(43)	210100(42)	207300(42)
Pesticide	42100 (16)	42100 (17)	42100 (17)
Rubber	800 (26)	800 (26)	800 (27)
Others (abrasive, chemical, electrode, electrical fertilizer, foundry, pharmaceutical, refractory, textile and vanaspati)	800 (26)	800 (27)	800 (27)

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.

## 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 7.8 million tonnes in 2011. Principal producing countries were China (28%), followed by India (12%), Brazil & USA (8% each) and Finland (6%) (Table -13).

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

(In '000 tonnes)	
Country	Reserves
<b>World : Total (rounded)</b>	<b>Large</b>
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, 2013.

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

(In '000 tonnes)			
Country	2009	2010	2011
<b>World Total</b>	<b>7500</b>	<b>7400</b>	<b>7800</b>
Argentina@	22	25	25 <sup>e</sup>
Australia <sup>e</sup>	92	80	99
Austria	111	138	132
Brazil@	578	655	650 <sup>e</sup>
Canada	44	100	147
China <sup>e</sup>	2300	2000	2200
Egypt	72	35	13
Finland	375	419	429
France <sup>e</sup>	420	420	420
India <sup>e</sup>	876	896	939
Iran	66	95	95
Italy <sup>e</sup>	110	110	110
Japan <sup>e</sup>	25	24	24
Korea, Dem.P.R. of <sup>e</sup>	50	50	50
Mexico	33	01	51
Russia <sup>e</sup>	150	150	150
Spain	47	52	12
USA	511	604	615
Other countries	1618	1546	1639

Source: World Mineral Production, 2007-2011.

@ Including talc, agalmatolite and pyrophyllite.

**FOREIGN TRADE****Exports**

Exports of steatite decreased to 1,00,562 tonnes in 2011-12 from 1,15,581 tonnes in the previous year. Out of total steatite exported in 2011-12, steatite blocks constituted 5,599 tonnes, steatite lumps 3,004 tonnes and steatite powder & others 91,959 tonnes. Steatite in different forms was exported mainly to Thailand (16%), UAE (9%), Japan and Malaysia (6% each) and Indonesia, Bangladesh, Kenya, Nigeria & Philippines (5% each) (Tables - 14 to 17).

**Imports**

Imports of steatite decreased to 5022 tonnes in 2011-12 from 10,087 tonnes in the previous year. Out of total steatite imported in 2011-12, steatite lumps were 868 tonnes and steatite powder & others 4122 tonnes. Steatite blocks imports were 32 tonnes. Steatite in different form was imported mainly from China (47%), Pakistan (21%), Japan (7%), Italy (4%), Austria (3%), Norway & USA (2% each) and Portugal, France & UK (1% each) (Tables 18 to 21).

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>115581</b>	<b>837966</b>	<b>100562</b>	<b>913949</b>
Thailand	17294	101844	16061	100772
UAE	12509	90348	8824	73504
Japan	8370	77484	6473	67871
Indonesia	4034	32433	5465	54079
Bangladesh	3980	24643	5239	51580
Malaysia	4208	42850	6069	49456
Philippines	4894	33694	4882	43604
Kenya	3426	25810	4853	37574
Nigeria	4911	27835	4841	33592
Saudi Arabia	2872	23499	3084	28092
Other countries	49083	357526	34771	373825

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>3970</b>	<b>23890</b>	<b>5599</b>	<b>52364</b>
Japan	2477	15963	3341	30117
China P Rp	66	868	625	5627
Germany	36	160	73	2548
USA	20	1236	35	2068
Algeria	-	-	253	1967
Nepal	196	804	377	1862
Bangladesh	848	1579	416	1855
Belgium	1	36	231	1846
Netherlands	290	2236	47	1532
France	-	-	64	1294
Other countries	36	1008	137	1648

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>9727</b>	<b>44820</b>	<b>3004</b>	<b>21198</b>
China P Rp	45	690	201	4084
Spain	3251	11078	1013	3160
Netherlands	116	1515	161	2232
USA	20	501	219	2199
Belgium	212	3405	112	1862
Malaysia	-	-	141	1486
Bangladesh	950	2574	475	1045
Japan	80	1245	60	910
Germany	22	338	44	880
Kenya	53	261	60	816
Other countries	4978	23213	518	2524

TALC, SOAPSTONE AND STEATITE

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>101884</b>	<b>769256</b>	<b>91959</b>	<b>840387</b>
Thailand	17294	101844	16061	100772
UAE	8124	70495	8602	72797
Indonesia	4034	32433	5465	54079
Bangladesh	2182	20490	4348	48680
Malaysia	4203	42833	5875	47776
Philippines	4894	33694	4882	43604
Japan	5813	60277	3072	36844
Kenya	3373	25549	4793	36758
Nigeria	4911	27835	4839	33562
Saudi Arabia	2580	21917	3084	28092
Other countries	44476	331889	30938	337423

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>3492</b>	<b>92285</b>	<b>4122</b>	<b>136174</b>
China	1904	50275	2365	71729
Japan	117	5805	361	17171
Italy	142	6541	196	10252
Austria	53	2214	151	7626
USA	94	5747	111	6391
Norway	159	2390	112	2910
Portugal	60	2426	60	2670
UK	54	3085	41	2463
France	71	2659	48	2166
Germany	7	126	66	2087
Other countries	831	11017	611	10709

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>10087</b>	<b>130423</b>	<b>5022</b>	<b>141498</b>
China P Rp	1904	50275	2365	71729
Japan	117	5805	361	17171
Italy	142	6541	196	10252
Austria	53	2214	151	7626
USA	95	5876	111	6391
Pakistan	7198	41590	1037	6118
Norway	159	2390	112	2910
Portugal	60	2426	60	2670
UK	54	3085	41	2463
France	71	2659	48	2166
Other countries	234	7562	540	12002

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>1</b>	<b>129</b>	<b>32</b>	<b>401</b>
Chinese Taipei/ Taiwan	-	-	4	235
Pakistan	-	-	28	166
Other countries	1	129	-	-

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

Country	2010-11		2011-12	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
<b>All Countries</b>	<b>6594</b>	<b>38009</b>	<b>868</b>	<b>4923</b>
Pakistan	6594	38009	688	4072
Russia	--	--	180	851

## FUTURE OUTLOOK

The apparent domestic demand for talc-steatite is 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 'lawa' 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.