

74 Talc, Soapstone and Steatite

Talc 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%), soft and soapy to feel. 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

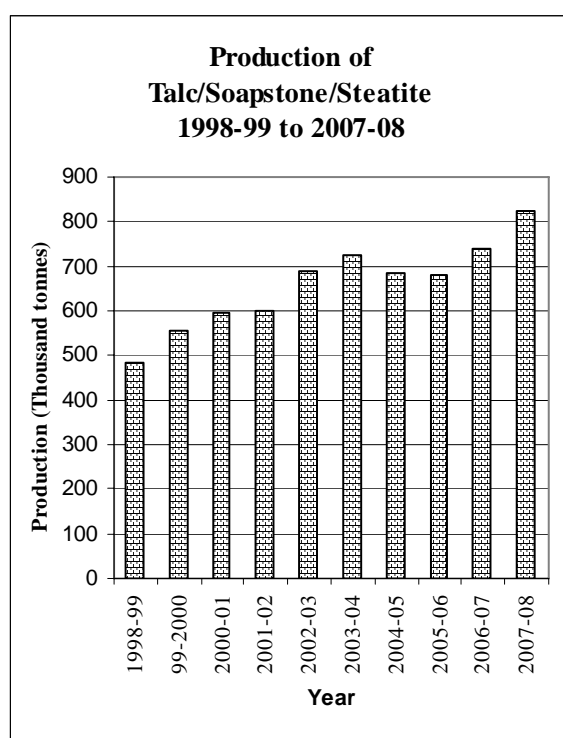
As per the UNFC system the total reserves/resources of talc/steatite/soapstone as on 1.4.2005 are estimated at 312 million tonnes of which reserves and remaining resources are 115 million tonnes and 197 million tonnes, respectively. Substantial quantities of resources are established in Rajasthan (50%) and Uttarakhand (32%). The remaining 18% resources are in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Orissa, Sikkim and Tamil Nadu. By grades, cosmetic grade accounts for about 26% share in total resources followed by paper and textiles (21%) and insecticides (14%). Resources of ceramic and paint grades are negligible (Table-1).

PRODUCTION, STOCKS & PRICES

The production of talc/soapstone/steatite in 2007-08 at 826 thousand tonnes

increased by about 12% as compared to that in the previous year owing to increase in demand in Uttarakhand.

There were 132 reporting mines in 2007-08 as against 139 in the previous year. thirteen principal producers for 2007-08 accounted nearly 80% of the total production during the year. In both the years entire production of steatite was reported by private sector mines. About 84% of the total production in 2007-08 was contributed by 31 mines, each producing over 5,000 tonnes annually, whereas 15% of the total output was reported by 50 mines, each producing 1000 to 5000 tonnes. The remaining about 1% of the production was shared by 51 mines, each with an annual output below 1,000 tonnes. About 70% of the production in 2007-08 was of grade other than insecticide and the remaining was of insecticide/DDT grade.



TALC, SOAPSTONE AND STEATITE

**Table – 1 : Reserves/Resources of Talc/Steatite/Soapstone as on 1.4.2005
(By Grades/States)**

(In '000 tonnes)

Grade/State	Reserves			Remaining resources					Total resources (A+B)
	Proved STD111	Probable STD121 STD122	Total (A)	Feasibility STD211	Pre-feasibility STD221 STD222	Measured STD331 STD332	Inferred STD333	Reconnaissance STD334	
All India : Total	65013	8573 41940	115526	6184	47823 20524	142 6704	115230	202	196809 312335
By Grades									
Paper & textile	24523	1169 13924	39616	6048	262 5833	105 239	13213	197	25898 65514
Cosmetic	19839	1141 9635	30615	14	41773 930	-	7936	-	50652 81266
Insecticide	10536	2028 10021	22584	41	1839 7340	29 207	11868	-	21325 43909
Ceramic	-	-	-	-	-	-	36	-	36 36
Paint	707	88 345	1141	-	-	-	267	-	267 1407
Others	1290	3570 2754	7615	-	60 129	- 100	2175	-	2465 10080
Unclassified	6815	526 4633	11974	81	3805 6177	- 5388	66761	-	82212 94186
Not known	1303	51 628	1982	-	84 115	8 770	12974	5	13955 15937
By States									
Andhra Pradesh	3134	131 2082	5346	-	-	13 143	3615	-	3771 9117
Bihar	62	- 2	63	-	-	-	1	-	1 65
Chhattisgarh	22	- 8	30	-	-	- 70	8	-	78 108
Gujarat	8	1 8	16	-	18 8	-	4	-	29 45
Jharkhand	4	5 22	31	1	- 54	2 4	250	-	311 341
Karnataka	97	- 82	179	20	135 344	- 30	1213	-	1742 1921
Kerala	-	-	-	-	-	-	14390	-	14390 14390
Madhya Pradesh	4	65 402	471	-	276 522	- 1679	6086	-	8563 9034
Maharashtra	-	-	-	-	-	-	14262	-	16827 16827
Orissa	137	95 129	361	-	2 73	-	268	-	343 704
Rajasthan	22631	3206 17908	43745	175	46407 16422	23 689	49724	5	113445 157190
Sikkim	-	- 60	60	-	-	-	-	-	- 60
Tamil Nadu	194	210 1618	2023	-	- 181	-	524	-	705 2727
Uttarakhand	38720	4861 19621	63202	5987	985 2921	105 1524	24884	197	36604 99806

Figures rounded off.

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Rajasthan, the major producing State accounted for as much as 70% of the total production in 2007-08. Among the other states, the share of Uttarakhand was 22% and that of Andhra Pradesh was 8%. Very nominal production was also reported from Orissa, Tamil Nadu, Bihar, Gujarat, Karnataka, Chhattisgarh and Madhya Pradesh (Tables - 2 to 5).

Mine-head stocks at the end of the year were 154 thousand tonnes as against 216 thousand tonnes in the beginning of the year (Table-6).

The average daily employment of the labour was 3,410 in 2007-08 as against 3461 in the previous year. Domestic prices of talc are furnished in Table-7.

Table – 2 : Principal Producers of Talc/Steatite/Soapstone, 2007-08

Name & address of producers	Location of mine	
	State	District
Associated Soapstone Distributing Co. (P) Ltd. 24, Akashwani Marg, P.B.No. 3, M.I.A. Road, Udaipur-313 003, Rajasthan.	Rajasthan	Udaipur
Udaipur Mineral Development Syndicate (P) Ltd. Prem Prakash Building, SMS Highway, Jaipur-302 003, Rajasthan.	Rajasthan	Bhilwara
Parwatiya Mines, Rampur Road, Haldwani, Distt. Nainital, Uttarakhand.	Uttarakhand	Bageshwar
Nalwaya Mineral Industries (P) Ltd, 7/A, Babu Bazar, Udaipur-313 001, Rajasthan.	Rajasthan	Dungarpur Udaipur
Katiyar Mining & Industrial Corpn, E - 5, Panki Industrial Area, Site - III, Kanpur-208 022, Uttar Pradesh.	Uttarakhand	Bageshwar
Jai Polymers Co. (P) Ltd., 99, Moti Magri Scheme, Udaipur, Rajasthan.	Rajasthan	Udaipur
Mahaveer Trading Co., E - 263, Mewar Industrial Area, Madri, Udaipur-313 001, Rajasthan.	Rajasthan	Udaipur
Dharti Dhan (P) Ltd, South Sundarwar, P.B.No.3, Station Road, Udaipur-313 001, Rajasthan.	Rajasthan	Udaipur
Nandini Mineral Industries, 3-1183, B.P.L. Road, P.O. Bethamcherla, Distt. Kurnool-518 599, Andhra Pradesh.	Andhra Pradesh	Kurnool
B. Venkateswaralu, P.O. Bethamcherla-518 599, Dist. Kurnool, Andhra Pradesh.	Andhra Pradesh	Kurnool
Almora magnesite Ltd. Magnesite house, Ranidara Road, Almora, Uttarakhand.	Uttarakhand	Bageshwar
Krishna Miners & Traders, 3/B, Industrial Estate, Pratabnagar Udaipur-313 005, Rajasthan.	Rajasthan	Udaipur
J.C.Tewari, C/O Nandita Tewari, Tirupati Malli Bamori, Haldwani, Nainital, Uttarakhand.	Uttarakhand	Bageshwar

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**Table – 3 : Production of Talc/Stealite/Soapstone, 2005-06 to 2007-08
(By States)**

(Qty. in tonnes; value in Rs. '000)

State	2005-06		2006-07		2007-08(p)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	681534	363835	739849	401169	825986	519568
Andhra Pradesh	74046	23691	79148	24572	67869	20552
Bihar	1466	221	1633	137	1799	284
Chhattisgarh	-	-	228	81	361	129
Gujarat	336	34	1065	107	472	47
Karnataka	925	102	970	107	358	36
Madhya Pradesh	2710	271	169	17	60	6
Orissa	8983	1040	3634	420	225	26
Rajasthan	458814	273105	478049	295805	575941	389393
Tamil Nadu	3200	480	2680	402	-	-
Uttarakhand	131054	64891	172273	79521	178901	109095

**Table – 4 : Production of Talc/Steatite/Soapstone, 2006-07 and 2007-08
(By Sector/States/Districts/Grades)**

(Qty. in tonnes; value in Rs. '000)

State/District	2006-07					2007-08(p)				
	No. of mines	Quantity			Value	No. of mines	Quantity			Value
		Insecticide /DDT	Other than Insecticide	Total			Insecticide /DDT	Other than Insecticide	Total	
India	139(4)	307684	432165	739849	401169	132(2)	247045	578941	825986	519568
Private sector	139(4)	307684	432165	739849	401169	132(2)	247045	578941	825986	519568
Andhra Pradesh	37(2)	53456	25692	79148	24572	27(2)	48743	19126	67869	20552
Anantapur	5	1270	2335	3605	1027	1	290	1010	1300	1000
Kurnool	32(2)	52186	23357	75543	23545	26(2)	48453	18116	66569	19552
Bihar	1	1633	-	1633	137	1	1799	-	1799	284
Munger	1	1633	-	1633	137	1	1799	-	1799	284
Chhattisgarh	1	228	-	228	81	2	361	-	361	129
Kanker	1	228	-	228	81	2	361	-	361	129
Gujarat	2	1065	-	1065	107	2	472	-	472	47
Sabarkantha	2	1065	-	1065	107	2	472	-	472	47
Karnataka	1	970	-	970	107	1	358	-	358	36
Bellary	1	970	-	970	107	1	358	-	358	36
Madhya Pradesh	1(1)	169	-	169	17	1	60	-	60	6
Katni	(1)	20	-	20	2	-	-	-	-	-
Sagar	1	149	-	149	15	1	60	-	60	6
Orissa	3	3632	2	3634	420	2	225	-	225	26
Mayurbhanj	2	3622	2	3624	417	2	225	-	225	26
Sambalpur	1	10	-	10	3	-	-	-	-	-
Rajasthan	57(1)	97343	380706	478049	295805	63	71044	504897	575941	389393
Bhilwara	12(1)	45537	98918	144455	77811	15	31033	175470	206503	128201
Dausa	1	1776	-	1776	444	1	1710	-	1710	428
Dungarpur	6	1582	32179	33761	20056	8	4670	40585	45255	26242
Karauli	-	-	-	-	-	1	1398	-	1398	327
Rajsamand	7	16980	6743	23723	5244	7	9251	7672	16923	4471
Udaipur	31	31468	242866	274334	192251	31	22982	281170	304152	229724
Tamil Nadu	1	2680	-	2680	402	-	-	-	-	-
Coimbatore	1	2680	-	2680	402	-	-	-	-	-
Uttarakhand	35	146508	25765	172273	79521	33	123983	54918	178901	109095
Bageshwar	31	142185	18565	160750	75698	29	115075	54918	169993	105720
Pithoragarh	4	4323	7200	11523	3823	4	8908	-	8908	3375

Figures in parentheses indicate the number of associated mines with limestone/clay (others), quartz/asbestos/kaoline and dolomite.

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Table – 5 : Production of Talc/Steatite/Soapstone, 2006-07 and 2007-08 (p)
(By Frequency Groups)

(Qty. in tonnes)

Production group	No. of mines		Production for the group		Percentage in total production		Cumulative percentage	
	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08
All Groups	139(4)	132(2)	739849	825986	100.00	100.00	-	-
Up to 500	44(1)	43	10292	7012	1.39	0.85	1.39	0.85
501 to 1000	14	8	11197	5384	1.51	0.65	2.90	1.50
1001 to 2000	19	24	25930	34576	3.51	4.19	6.41	5.69
2001 to 5000	28(3)	26(2)	90925	86337	12.30	10.45	18.71	16.14
5001 to 10000	16	17	109898	115902	14.85	14.03	33.56	30.17
10001 to 25000	14	7	211188	114451	28.54	13.86	62.10	44.03
25001 & Above	4	7	280419	462324	37.90	55.97	100.00	100.00

Table – 6 : Mine-head Stocks of Talc/Steatite/Soapstone, 2007-08 (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	133802	82526	216328	108036	45644	153680
Andhra Pradesh	10667	3663	14330	15053	2993	18046
Bihar	115	-	115	25	-	25
Chhattisgarh	202	-	202	218	-	218
Gujarat	130	-	130	134	-	134
Karnataka	52	-	52	110	-	110
Madhya Pradesh	410	-	410	260	-	260
Orissa	1637	127	1764	1204	126	1330
Rajasthan	101793	73994	175787	75525	34253	109778
Tamil Nadu	511	-	511	-	-	-
Uttarakhand	18285	4742	23027	15507	8272	23779

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**Table – 7 : Prices of Talc/Steatite/Soapstone, 2005-06 to 2007-08
(Domestic Markets)**

(In Rs. per tonne)

Grade	Market	2005-06	2006-07	2007-08 (p)
Bhaskar powder	f.o.r. Udaipur (Rajasthan)	1180	1200	1200
Special jadhans powder	f.o.r. Udaipur (Rajasthan)	975	1000	1000
Lumps 1st grade	Ex-mine Deopur/Punchpura (Rajasthan)	1530-2295	1530-2295	1600-2500
Lumps 2nd grade gitti	Ex-mine Deopur/Punchpura (Rajasthan)	765-1450	765-1450	800-1600
Lumps 2nd grade	Ex-mine Deopur/Punchpura (Rajasthan)	680-975	680-975	700-1050
Gitti 2nd grade	Ex-mine Deopur/Punchpura (Rajasthan)	470-640	470-640	525-700
Jurry/ruffa	Ex-mine Deopur/Punchpura (Rajasthan)	80-400	80-400	125-450
Paper	Ex-mine Chanawada (Rajasthan)	450	450	450
Insecticide	Ex-mine Chanawada (Rajasthan)	150	109	228
Insecticide	Ex-mine Murela (Rajasthan)	150	130	130
Insecticide	Ex-mine Semal (Rajasthan)	178	150	228
Paper	Ex-mine Semal (Rajasthan)	-	-	800
DDT	Ex-mine Kalyanpur (Rajasthan)	70	70	70
Lower paper	Ex-mine Kalyanpur (Rajasthan)	120	120	120
Paper	Ex-mine Kalyanpur (Rajasthan)	200	200	200

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 with the help of pickaxes/crowbars 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 few mines, hand trimming is practised 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 in to 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. Grade wise whiteness & their specification consuming industries are given in Table-8.

Table – 8 : Grade-wise Consuming Industries of Talc

Grade	Whiteness Percentage	Industry
Grade - A	90 to 95%	i) Pharmaceuticals ii) Cosmetics
Grade - B	85 to 90%	i) Superior grade paper ii) Textile iii) Ceramics
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 micronizing and sterilisation of the product.

Talc is crushed and ground by hammer mills and roller mills into powder; at the same time 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 and 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. Indian talc is considered to be the second best in the world next

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to 'Italian talc'. In the world market, talc, free from grit, having high whiteness and high degree of soapy feeling is very much sought after in cosmetic, filler and weighing applications. Talc having more than 92% brightness, less than 1% Fe₂O₃ and less than 1.5% CaCO₃ 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 (as amended in July 1995 and reaffirmed, 2003) 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 soap stone. 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 - 9. Specifications as per IS : 10429-1982 (Reaffirmed 2001) for ceramic industry and actual user specifications for insecticide industry are furnished in Table-10. BIS has prescribed specifications for use of talc in cosmetic industry vide IS: 1462-1985(Third Revision, reaffirmed 2001). The international specifications of talc for use in ceramic, cosmetic and paint industries are given in Table - 11.

Table – 9 : 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 ₂ O ₃) percentage by mass, max	0.3	0.3	0.3	-
pH8.5 (max)	8.5 (max) (of 10% solution)	8.5 (max) (of 10% solution)	8.5 (max) (of 10% solution)	(of 10% solution)
Whiteness, reflectance to blue light of wavelength 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 – 10 : 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 – 11 : 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 nearly static at 301 thousand tonnes in 2006-07 and 2007-08. About 69% consumption in 2007-08, was in paper industry, followed by pesticide (13%), paint (6%) ceramic (4%) and cosmetic (3%) industries. Remaining 5% consumption was shared by ceramic, fertilizer, paint, rubber, textile, chemicals and vanaspati industries. Consumption of talc during 2005-06 to 2007-08 is given in Table-12.

POLICY

The Export-Import Policy incorporated in the Foreign Trade Policy, 2004-09 allows imports and exports of talc freely without restrictions.

Table – 12 : Reported Consumption of Talc/ Steatite/Soapstone, 2005-06 to 2007-08 (By Industries)

Industry	(In tonnes)		
	2005-06(R)	2006-07	2007-08(p)
All Industries	285600	301400	300800
Ceramic	14600(22)	14500(22)	14500(21)
Cosmetic	11600(16)	11600(16)	11600 (16)
Paint	20800 (29)	20800 (29)	20800 (29)
Paper	195100(46)	211000(47)	210400(47)
Pesticide	42100 (16)	42100 (16)	42100 (16)
Rubber	800 (26)	800 (26)	800 (26)
Others (abrasive, chemical, electrical, fertilizer, foundry, pharmaceutical, refractory, textile and vanaspati)	600 (31)	600 (31)	600 (31)

Figures rounded off.

Data collected on non-statutory basis.

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

Plastic industry also consumes talc of which data is not available.

WORLD REVIEW

The world resources of talc and pyrophyllite are quite large and sufficient to meet the world demand. The world resources of talc and pyrophyllite are given in Table -13. Resources of talc are not available separately.

The world production of talc is estimated at 6.7 million tonnes in 2007. Principal producing countries were China (37%), followed by USA and India (12% each), Finland (8%) and France and Brazil (6% each) (Table -14).

It is reported that China's talc mines are underground operations that are reportedly near exhaustion having been mined at great depths as also due to problems impeding with established producers in USA.

Table – 13 : World Resources of Talc and Pyrophyllite (By Principal Countries)

(In '000 tonnes)

Country	Reserve base
World : Total	Large
Brazil	250000
China	Large
Finland	Large
India	9000
Japan	160000
Korea, Rep. of	18000
USA*	540000
Other countries	Large

* Excludes pyrophyllite.

Source: Mineral Commodity Summaries, 2008.

FOREIGN TRADE

Exports

Exports of steatite increased to 153,813 tonnes in 2007-08 from 112,534 tonnes in the previous year. Out of total steatite exported in 2007-08, steatite blocks constituted 5,806 tonnes, steatite lumps 6,278 tonnes and steatite powder & others 141,729 tonnes. Steatite in different forms was exported mainly to UAE (42%), Thailand (10%), Spain and Malaysia (5% each) (Tables - 15 to 18).

Imports

Imports of steatite increased to 1,213 tonnes in 2007-08 from 882 tonnes in the previous year. Out of total steatite imported in 2007-08, steatite lumps were 40 tonnes and steatite powder & others 1,173 tonnes. Steatite in different forms was imported mainly from USA (29%), China (23%), Pakistan (22%) and Japan (4%) (Tables - 19 to 22).

TALC, SOAPSTONE AND STEATITE

**Table – 14 : World Production of Talc
(By Principal Countries)**

(In '000 tonnes)

Country	2005	2006	2007
World Total	6878	6715	6741
Australia	151	151 ^(e)	151 ^(e)
Austria	167	159	153
Brazil @	413	389	401
China	2700	2500	2500 ^(e)
Finland	508	547	536
France	416	420 ^(e)	420 ^(e)
India*	682	687	816
Italy	141	147	112
Korea, Dem. People's Rep. of	50	50	50 ^(e)
Mexico	65	41	32
Russia	150 ^(e)	150 ^(e)	150 ^(e)
Spain	91	84	85
USA	856	895	839 ^(e)
Other Countries	488	495	496

Source: World Mineral Production, 2003-07.

@ Including talc, agalomatolite and pyrophyllite

*India's production of talc/steatite/soapstone in 2005-06, 2006-07, 2007-08 was 681,534 tonnes, 739,849 tonnes and 825,926 tonnes, respectively.

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

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	5692	24941	5806	28728
Japan	1022	4543	2815	15194
USA	1135	3480	970	3745
Israel	-	-	286	1773
Germany	852	6014	197	1651
Bangladesh	418	1136	400	959
Italy	103	596	68	830
Nepal	733	2176	199	767
Belgium	140	587	200	620
Malaysia	145	706	149	431
Czech Republic	662	2594	-	-
Other countries	482	3109	522	2758

**Table – 17 : Exports of Steatite Lumps
(By Countries)**

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

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	112534	462377	153813	731868
UAE	43697	172946	63840	301260
Thailand	6679	29967	15177	71268
Malaysia	4945	27787	7520	51232
Spain	5432	15743	7374	30134
Japan	2922	12773	5884	29046
Philippines	2360	10537	4292	23823
Belgium	3131	20469	3135	19717
Indonesia	1776	9051	3345	18061
Saudi Arabia	5152	14801	2981	17916
Kenya	2923	14923	3846	15560
Other countries	33517	133380	36419	153846

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	5571	27831	6278	26486
Spain	2223	9387	3578	14217
Belgium	152	1151	222	2016
Turkey	850	4037	359	1631
Italy	-	-	180	1204
Yemen Republic	199	1132	195	1040
Philippines	-	-	150	1004
Bangladesh	300	2730	582	868
UAE	324	1389	50	197
Nepal	328	889	33	132
Kenya	711	4611	-	-
Other countries	484	2505	929	4177

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**Table – 18 : Exports of Steatite Powder & Others
(By Countries)**

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	101271	409605	141729	676654
UAE	43373	171557	63790	301063
Thailand	6639	29787	15057	70311
Malaysia	4800	27081	7371	50801
Philippines	2360	10537	3982	21905
Indonesia	1776	9051	3345	18061
Saudi Arabia	5152	14801	2981	17916
Belgium	2839	18731	2713	17081
Spain	3209	6356	3796	15917
Kenya	2212	10312	3846	15560
Japan	1900	8230	3069	13852
Other countries	27011	103162	31779	134187

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

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	882	30534	1213	32660
USA	389	19242	351	17383
China	278	3855	279	3884
France	++	11	39	2245
Pakistan	-	-	270	1496
Japan	2	80	51	1392
Italy	24	883	24	983
UK	49	2191	24	949
Norway	23	1053	15	832
Germany	19	704	19	542
Portugal	10	550	16	516
Other countries	88	1965	125	2434

**Table – 20 : Imports of Steatite Blocks
(By Countries)**

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	3	60	-	-
Spain	3	60	-	-

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

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	-	-	40	203
Iran	-	-	40	203

**Table – 22 : Imports of Steatite Powder & Others
(By Countries)**

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	879	30474	1173	32457
USA	389	19242	351	17383
China	278	3855	279	3884
France	++	11	39	2245
Pakistan	-	-	270	1496
Japan	2	80	51	1396
Italy	29	883	24	983
UK	49	2191	24	949
Norway	23	1053	15	832
Germany	19	704	19	542
Portugal	90	550	16	516
Other countries	85	1905	85	2231