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MINOR MINERALS

30.22 TALC, SOAPSTONE AND STEATITE

(ADVANCE RELEASE)

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30-22 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. Talc, Soapstone and Steatite has been declared as Minor Mineral', vide Government of India Notification S.O. 423 (E) dated 10th February, 2015.

RESERVES/RESOURCES

As per NMI data base on the UNFC system, the total reserves/resources of talc/soapstone/steatite as on 1.4.2015 have been estimated at 316 million tonnes of which reserves and remaining resources are 106 million tonnes and 209 million tonnes, respectively. Substantial quantities of reserves/ resources are established in Rajasthan (57%) and Uttarakhand (25%). The remaining 28% resources are in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Sikkim, Tamil Nadu and Telangana by states. By grades, Paper & Textile grade accounts for about (22%) share in total resources followed by Insecticides (21%) and Cosmetics (9%). Resources of Ceramic and Paint grades are negligible. Others, Unclassified and Not-known grades account for about (48%) resources (Table-1).

EXPLORATION & DEVELOPMENT

The exploration & development details, if any, are given in the review on "Exploration & Development" in "General Reviews".

PRODUCTION & STOCKS

As per Govt. of India Notification S.O. 423(E), dated 10th February 2015, 'talc, soapstone and steatite' has been declared as 'Minor Mineral', hence the producers report the production data directly to the respective states and not to IBM. However, efforts were made to collect this information through correspondence with the State Directorates of Mining and Geology of individual states or visiting their websites. All possible information/data that could be gathered has been presented in this Review.

Statewise production of talc, soapstone and steatite is furnished in Table-2.

Table-2: Statewise Production of Talc, Soapstone & Steatite

(In tonnes)

State	Year		
	2014-15	2015-16	2016-17
Andhra Pradesh	86062	45464	74054
Rajasthan	1699051	-	-
Gujarat	100	200	-

Source: *As received from State DGMs and their websites.*
Note : " - " NA.

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

Table – 1 : Reserves/Resourcesof Talc/Soapstone/Steatite as on 1.4.2015
(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	**72172**	**8067**	**26251**	**106490**	**18178**	**13020**	**32221**	**2994**	**8126**	**128620**	**6275**	**209434**	**315924**
By Grades													
Paper & textile	21398	4401	6088	31887	5947	818	7170	575	430	15452	5890	36283	68170
Cosmetics	9094	361	2912	12368	1575	991	4287	1102	844	5986	146	14932	27300
Insecticide	17258	2193	7307	26759	6002	3205	11850	956	217	17066	40	39336	66095
Ceramic	131	10	64	205	17	46	93	-	35	160	17	367	572
Paint	52	300	242	594	57	27	92	-	-	135	30	341	935
Others	544	-	267	811	1314	3603	3539	346	100	2219	-	11122	11933
Unclassified	23359	801	9302	33462	2004	4246	4509	11	6444	78213	147	95573	129035
Not-known	336	-	67	404	1263	84	680	2	56	9388	5	11479	11883
By States													
Andhra Pradesh	1875	482	1001	3358	197	725	1804	184	369	3611	248	7137	10495
Bihar	-	-	-	-	-	-	-	-	-	149	-	149	149
Chhattisgarh	22	-	8	29	-	-	-	-	70	8	-	78	107
Gujarat	-	-	4	4	-	20	9	-	-	4	-	33	37
Jharkhand	336	-	83	419	-	-	54	2	4	243	16	319	739
Karnatka	46	53	182	280	58	78	251	11	208	1196	-	1800	2081
Kerala	-	-	-	-	-	-	-	-	-	14390	-	14390	14390
Madhya Pradesh	185	20	79	283	179	378	1609	-	1679	6107	-	9952	10235
Maharashtra	-	-	-	-	-	-	-	-	2565	14262	-	16827	16827
Odisha	-	2	8	10	106	89	193	151	-	278	-	817	827
Rajasthan	52812	2989	22189	77990	11249	6167	17498	1640	858	63411	151	100975	178965
Sikkim	-	-	-	-	-	-	60	-	-	-	-	60	60
Tamil Nadu	-	-	-	-	559	210	1762	27	-	553	-	3110	3110
Telangana	-	-	-	-	-	-	-	-	-	20	-	20	20
Uttarakhand	16896	4521	2698	24115	5831	5353	8982	978	2372	24388	5860	53765	77881

Figures rounded off. Note : " - " Nil.

adding deodorant and perfumes. Massive steatite when cut into panels is used for switchboards and acid Proof tabletops in laboratory, laundry and kitchen sinks, in tubs and tanks as well as for lining alkali tanks in Paper Industry. Due to its high melting point (1630 ^{0}C), soapstone can be used in refractories and fire places. It is also quite useful in sculpturing.

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

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

POLICY

The Export-Import Policy incorporated in the Foreign Trade Policy, 2015-20, allows imports and exports of talc freely without restrictions under Heading no. 2526.

FUTURE OUTLOOK

India is one of the principal sources of 'lava' grade talc suited for specialised purposes like low ceramic materials and of swan shaped talc. Indian talc is considered to be the second best in the world next to Italian talc. India has large resource base and well-developed production facilities that utilise modern pulverising techniques. Concerted efforts through R & D advancements are necessary to make Indian talc suitable for world market.