

Indian Minerals Yearbook 2022

(Part-III: Mineral Reviews)

61st Edition

MINOR MINERALS 30.22 TALC, SOAPSTONE AND STEATITE

(ADVANCE RELEASE)

GOVERNMENT OF INDIA MINISTRY OF MINES INDIAN BUREAU OF MINES

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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 enable 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, based on the UNFC system, the total reserves/resources of talc/soapstone/steatite as on 1.4.2015 has 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 18% resources are in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Sikkim, Tamil Nadu and Telangana. 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 covered in the Review on "Exploration & Development" under "General Reviews".

PRODUCTION

As per Govt of India Notification S.O. 423(E), dated 10th February 2015, 'talc, soapstone and steatite' have 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. But data of only a few States could be collected. All possible information/data that could be gathered has been presented in this Review.

Statewise production of talc, soapstone and steatite during 2019-20 to 2021-22 is furnished in Table-2.

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

(In tonnes)

| State | | Year | |
|----------------|---------|---------|---------|
| | 2019-20 | 2020-21 | 2021-22 |
| Rajasthan | 1484000 | 1590395 | 1350430 |
| Andhra Pradesh | 110921 | 102260 | - |
| Karnataka | 432 | 721 | - |
| Gujarat | - | - | - |

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

Table – 1: Reserves/Resources of Talc/Soapstone/Steatite as on 1.4.2015 (By Grades/States)

| Provided States Production | | | | | | | | | | | | | (In '00 | (In '000 tonnes) |
|--|-----------------|--------|--------|----------|--------|-------------|--------|--------|----------|-----------|--------------|----------------|---------|------------------|
| Proved Probable Trouble Trouble <t< th=""><th>Grade/States</th><th></th><th></th><th>Reserves</th><th></th><th></th><th></th><th></th><th></th><th>Re</th><th>maining Resc</th><th>urces</th><th></th><th></th></t<> | Grade/States | | | Reserves | | | | | | Re | maining Resc | urces | | |
| Control STD121 STD121 STD121 STD121 STD121 STD221 STD222 | | Proved | Pro | obable | | Feasibility | Pre-fe | | Measured | Indicated | Inferred | Reconnaissance | | Resources |
| ce circlic 8.04 2.621 1.04.0 18178 1.302 3.221 9.94 8126 1.286.0 6275 2.09444 se circlic 2.138 3.1887 3.94 1818 1.302 3.221 1.286 1.86 2.049 4.41 6.86 3.1887 3.94 4.87 1102 844 5.886 1.46 1.492 ic 1.238 2.138 1.387 9.91 4.887 1102 844 5.886 146 1492 ic 1.238 2.136 6.02 3.26 1182 9.94 4.887 1102 844 5.886 146 1492 ic 1.238 2.929 1.72 1.887 9.94 4.887 1102 844 5.886 4.94 39.36 4.94 39.36 4.94 4.998 4.94 4.998 4.94 4.998 4.94 4.998 4.94 4.998 4.94 4.998 4.94 4.998 4.94 4.998 4.94 <th></th> <th>310111</th> <th>STD121</th> <th>STD122</th> <th></th> <th>31D211</th> <th>STD221</th> <th>STD222</th> <th>166716</th> <th>S1D332</th> <th>311233</th> <th>+cc716</th> <th>(g)</th> <th>(A+B)</th> | | 310111 | STD121 | STD122 | | 31D211 | STD221 | STD222 | 166716 | S1D332 | 311233 | +cc716 | (g) | (A+B) |
| ctextile 1338 4401 688 31887 844 1770 575 430 15452 5890 36283 s 4401 6088 31887 5947 818 7170 575 430 15452 5890 3623 s 17288 2193 7307 26759 6002 3205 11830 956 217 1706 40 403 367 s 17288 2193 7307 26759 6002 3205 11830 956 217 1706 40 40 9336 s 131 10 64 205 17 46 93 - 135 10 46 403 - - 135 361 | All India | 72172 | 8067 | 26251 | 106490 | 18178 | 13020 | 32221 | 2994 | 8126 | 128620 | 6275 | 209434 | 315924 |
| textile 1338 4401 6088 31887 5947 818 7170 575 430 15452 5890 36283 s s s s s s s s s s s s s s s s s s s | By Grades | | | | | | | | | | | | | |
| s 9094 361 1236s 1575 901 4287 1102 844 5986 146 14932 le 1728s 2193 2673 602 3265 1180 956 217 1706 40 3936 is 131 10 64 2673 602 326 186 95 217 1706 40 3936 is 131 10 64 267 811 134 3639 346 100 2219 9 111 644 78213 147 3938 is 23359 801 3346 104 426 4509 11 644 78213 147 3633 vindesh 1835 101 1263 84 680 2 388 197 72 8 36 314 9533 r 20 20 20 20 20 20 388 311 414 3813 | Paper & textile | 21398 | 4401 | 8809 | 31887 | 5947 | 818 | 7170 | 575 | 430 | 15452 | 5890 | 36283 | 68170 |
| te 17258 2193 7307 26759 6002 3205 11850 956 217 17066 40 93936 131 10 64 205 17 46 93 9. 35 160 17 36 | Cosmetics | 9094 | 361 | 2912 | 12368 | 1575 | 991 | 4287 | 1102 | 844 | 2986 | 146 | 14932 | 27300 |
| 131 10 64 205 17 46 93 - 35 160 17 367 347 347 348 | Insecticide | 17258 | 2193 | 7307 | 26759 | 6002 | 3205 | 11850 | 926 | 217 | 17066 | 40 | 39336 | 96099 |
| sed 32 300 242 594 57 27 92 - - 135 30 341 sed 534 - 267 811 1314 3693 3539 346 100 2219 - 11122 vn 3359 801 992 3442 2004 4246 4509 11 6444 78213 147 95573 11122 vn 336 10 4246 4269 11 6444 78213 147 95573 11122 vn 482 1001 3358 197 725 1804 184 369 3611 244 78213 147 95573 11479 gath 187 482 1001 3358 197 72 184 369 3611 369 3611 369 3611 369 3611 369 3611 369 3611 369 3611 369 3611 369 | Ceramic | 131 | 10 | 64 | 205 | 17 | 46 | 93 | • | 35 | 160 | 17 | 367 | 572 |
| icd 23359 844 - 267 811 1314 3603 3539 346 100 2219 - 11122 vn 3356 - 67 404 1263 84 680 2 56 9388 5 11179 radesh 1875 482 1001 3358 197 725 1804 184 369 3611 248 11479 radesh 1875 482 180 184 369 3611 248 11479 radesh 1875 482 187 725 1804 184 369 3611 248 11479 radesh 2 2 2 2 2 2 4 4 149 2 4 4 149 2 4 4 149 2 4 4 149 2 4 4 149 4 4 149 2 4 4 149 <t< td=""><td>Paint</td><td>52</td><td>300</td><td>242</td><td>594</td><td>57</td><td>27</td><td>92</td><td>•</td><td>•</td><td>135</td><td>3.0</td><td>341</td><td>935</td></t<> | Paint | 52 | 300 | 242 | 594 | 57 | 27 | 92 | • | • | 135 | 3.0 | 341 | 935 |
| ied 23359 801 9302 33462 2004 4246 4509 11 6444 78213 147 95573 1 1 | Others | 544 | • | 267 | 811 | 1314 | 3603 | 3539 | 346 | 100 | 2219 | 1 | 11122 | 11933 |
| vn 336 - 67 404 1263 84 680 2 56 9388 5 11479 1188 randesh 1875 482 1001 3358 197 725 1804 184 369 3611 248 7137 1194 randesh 182 28 79 - - 149 - | Unclassified | 23359 | 801 | 9302 | 33462 | 2004 | 4246 | 4509 | 111 | 6444 | 78213 | 147 | 95573 | 129035 |
| radesh 1875 482 1001 3358 197 725 1804 184 369 3611 248 7137 104 ach - - - - - - - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - 149 - - 4 - 4 - - 4 - 33 - 149 - 33 - - 4 - 4 - - 4 - 4 - - 4 - - 4 - - - - - - - - - - - - - - - - - | Not-known | 336 | • | 29 | 404 | 1263 | 84 | 089 | 2 | 99 | 9388 | 5 | 11479 | 11883 |
| ssh 1875 482 1001 3358 197 725 1804 184 369 3611 248 7137 104 - - - - - - - - 149 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - 189 - - 189 - - 189 - - - | By States | | | | | | | | | | | | | |
| 14 14 14 14 14 14 14 14 | Andhra Pradesh | 1875 | 482 | 1001 | 3358 | 197 | 725 | 1804 | 184 | 369 | 3611 | 248 | 7137 | 10495 |
| 122 - 8 8 29 6 4 4 - 20 | Bihar | 1 | • | | 1 | ı | • | • | | 1 | 149 | 1 | 149 | 149 |
| 4 4 4 20 9 4 4 5 5 319 73 336 - 83 419 - 280 - 54 - 54 - 4 - 319 77 46 - 53 182 - 280 - 58 - 78 - 51 - 11 - 208 - 1196 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 18300 - 183000 - 18300 - 18300 - 18300 - 183000 - 183000 - | Chhattisgarh | 22 | • | ∞ | 29 | • | | | • | 7.0 | ∞ | 1 | 7.8 | 107 |
| 336 - 83 419 - 54 2 4 243 16 319 7 46 53 182 280 58 78 251 11 208 1196 - 1800 20 184 2 2 2 2 2 2 14390 - 14390 143 185 2 2 2 2 2 14390 - 14390 143 185 2 2 2 2 2 2 14390 - 14390 143 185 2 2 3 179 378 160 2 278 1640 858 63411 151 100975 1789 186 1 | Gujarat | 1 | • | 4 | 4 | • | 20 | 6 | • | • | 4 | • | 33 | 37 |
| 46 53 182 280 58 78 251 11 208 1196 - 1830 - 1830 - 1830 - 1830 - 1839 - | Jharkhand | 336 | • | 83 | 419 | | ı | 54 | 7 | 4 | 243 | 16 | 319 | 739 |
| cesh 185 20 79 283 179 378 1609 - - 14390 - 14390 - 14390 - 14390 - 14390 - 14390 - 14390 - 14390 - 9952 102 - - - - - - - 2565 14262 - 16827 1789 1789 1789 1640 858 63411 151 100975 1789 1789 - < | Karnataka | 46 | 53 | | 280 | 58 | 78 | 251 | 11 | 208 | 1196 | ı | 1800 | 2081 |
| lesh 185 20 79 283 179 378 1609 - 1679 6107 - 9952 102 - - - - - - - 16827 1682 168 - - - - - - - 16827 168 168 52812 2989 22189 77990 11249 6167 17498 1640 858 63411 151 100975 1789 - | Kerala | 1 | • | • | • | • | • | • | • | • | 14390 | • | 14390 | 14390 |
| - - - - - - - 16827 1682 | Madhya Pradesh | 185 | 20 | 42 | 283 | 179 | 378 | 1609 | • | 1679 | 6107 | 1 | 9952 | 10235 |
| - 2 8 10 106 89 193 151 - 278 - 817 8 52812 2989 22189 77990 11249 6167 17498 1640 858 63411 151 100975 1789 - | Maharashtra | 1 | • | • | • | • | • | • | • | 2565 | 14262 | • | 16827 | 16827 |
| 52812 2989 22189 77990 11249 6167 17498 1640 858 63411 151 100975 1789 -< | Odisha | 1 | 2 | 8 | 10 | 106 | 68 | 193 | 151 | • | 278 | • | 817 | 827 |
| 60 60 60 - 60 - 60 - 60 6 | Rajasthan | 52812 | 2989 | 22189 | 77990 | 11249 | 6167 | 17498 | 1640 | 858 | 63411 | 151 | 100975 | 178965 |
| 559 210 1762 27 - 553 - 3110 31 20 - 20 16896 4521 2698 24115 5831 5353 8982 978 2372 24388 5860 53765 778 | Sikkim | 1 | • | • | • | • | | 09 | • | • | • | 1 | 09 | 09 |
| 20 16896 4521 2698 24115 5831 5353 8982 978 2372 24388 5860 53765 778 | Tamil Nadu | 1 | • | • | • | 559 | 210 | 1762 | 27 | • | 553 | 1 | 3110 | 3110 |
| 16896 4521 2698 24115 5831 5353 8982 978 2372 24388 5860 53765 | Telangana | 1 | • | • | • | | ı | • | • | • | 20 | ı | 20 | 20 |
| | Uttarakhand | 16896 | 4521 | 2698 | 24115 | 5831 | 5353 | 8982 | 876 | 2372 | 24388 | 5860 | 53765 | 77881 |

Figures rounded off.

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 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 (1,630 °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% 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 (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

As per Import Policy under Schedule I of ITC (HS) 2022 and Exports Policy under Schedule II of ITC (HS) 2022, Natrual Steatite whether or not roughly trimmed or merely cut by sawing or otherwise, into blocks or slabs of a rectangular (inculding square) shape is allowed; while for talc exports aer allowed freely without restrictions.

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 utilises modern pulverising techniques. Concerted efforts through R & D advancements are necessary to make Indian talc suitable for world market.