

DIASPORE



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MINOR MINERALS 30.5 DIASPORE

(FINAL RELEASE)

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30-5 Diaspore

Diaspore is a dimorphous form of boehmite, with chemical formula $\text{AlO}(\text{OH})$ (beta monohydrate of aluminium). It is an important constituent of bauxite. It is used chiefly for making high-alumina refractory bricks. It is also used as a filler in Plastic Industry and in jewellery as a gemstone.

RESERVES/RESOURCES

Diaspore occurs as thin veins, stringers and geode like bodies in association with pyrophyllite in Uttar Pradesh and Madhya Pradesh. The host rock mainly comprises granite, quartz and pyrophyllite of Bundelkhand Super Group, and as a common constituent of bauxite in Jammu & Kashmir.

As per NMI data base, based on UNFC System of resource classification, the total reserves/resources of diaspore as on 1.4.2015 have been placed at 10.19 million tonnes of which about 7.56 million tonnes (74%) are located in Madhya Pradesh, 2.63 million tonnes (26%) in Uttar Pradesh and a nominal quantity in Jammu & Kashmir. About 7.88 million tonnes (77%) of these resources are placed under Reserves category & the remaining 2.31 million tonnes (23%) are placed under Remaining Resources. Out of the total reserves/resources, 8.85 million tonnes (87%) are grouped under Refractory grade I & II, while 1.3 million tonnes (13%) resources fall under Unclassified, Not-known, Others and Ceramic grades (Table- 1).

PRODUCTION

As per Govt. of India Notification S.O. 423(E), dated 10th February 2015, 'Diaspore' has been declared as 'Minor Mineral', hence the producers report the

production data directly to the respective States and not to IBM. However, production data for any of the States was not available.

USES & SPECIFICATIONS

Diaspore mainly finds application in the manufacture of high alumina refractories either on its own or by bonding with flint or plastic clay as per content of alumina needed in the finished product. The domestic refractory manufacturers use indigenous diaspore, analysing Al_2O_3 56 to 62%, Fe_2O_3 1 to 4% , TiO_2 0.8 to 1.5%, Pyrometric Cone Equivalent (PCE) 36 (min.) and of size between 75 and 150 mm.

In addition to its industrial applications, diaspore is also used for making decorative items such as small figurines, lampshades, flower-vase, etc.

It is commonly used in refractories, cosmetic & soaps, ceramics, paper, rubber, potteries, insecticides, toys and statues.

FUTURE OUTLOOK

Diaspore (aluminium oxide hydroxide), is one of the three minerals constituents of the bauxite ore of aluminium. Principally it is used in the manufacture of high alumina refractories. India has large reserves of diaspore for its indogeneous supply and has adequate resources to meet its future requirements. Gem variety of diaspore called zultanite is not found in indian reserves.

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

(In 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		Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)
All India : Total	3242363	884525	3755546	7882434	114789	498756	480663	14241	110358	1045944	46068	2310817	10193251
By Grades													
Ceramic	5646	6274	3137	15057	-	55	-	-	-	252	-	307	15364
Refractory-I	3040191	716408	2763636	6520235	68546	145566	177894	545	-	391151	-	783701	7303936
Refractory-II	105310	129983	973195	1208488	37833	140249	43345	693	31542	86238	-	339900	1548388
Unclassified	45918	-	13917	59835	-	6628	32392	-	67205	5453	46068	157746	217581
Not-known	-	-	-	-	-	4522	3290	-	9950	10966	-	28728	28728
Others	45298	31860	1661	78819	8410	201736	223742	13003	1661	551884	-	1000436	1079255
By States													
Jammu & Kashmir	-	-	-	-	-	-	-	-	566	711	-	1277	1277
Madhya Pradesh	2380710	341047	2814601	5536358	96241	488094	460808	13696	109792	810667	46068	2025365	7561723
Uttar Pradesh	861653	543478	940945	2346076	18548	10662	19855	545	-	234566	-	284175	2630251

Figures rounded off. Note : " - " Nil