

DIASPORE



# Indian Minerals Yearbook 2016

(Part- III : Mineral Reviews)



**55<sup>th</sup> Edition**

**DIASPORE**

**(FINAL RELEASE)**

**GOVERNMENT OF INDIA  
MINISTRY OF MINES  
INDIAN BUREAU OF MINES**

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# 14 Diaspore

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**D**iaspore 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 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 & 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 & STOCKS

As per the Government of India Notification S.O.423(E), dated 10<sup>th</sup> February 2015, diaspore has been declared a 'Minor Mineral'. Hence, the production for 2015-16 (beyond January, 2015) is not

available with IBM. List of producers of diaspore is given in Table-2.

## MINING AND MARKETING

Diaspore is normally mined manually by opencast method. Mining has been carried out by formation of benches in overburden and mined up to a depth of 25 m. The average  $\text{Al}_2\text{O}_3$  content in the mined ore ranges from 42-72% and  $\text{Fe}_2\text{O}_3$  from 0.7- 4.45%.

Chhatarpur, Shivpuri and Tikamgarh districts in Madhya Pradesh and Lalitpur, Jhansi and Mahoba districts in Uttar Pradesh are the mining centres of diaspore in the country.

## CONSUMPTION & USES

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  $\text{Al}_2\text{O}_3$  56 to 62%,  $\text{Fe}_2\text{O}_3$  1 to 4% ,  $\text{TiO}_2$  0.8 to 1.5%, Pyrometric Cone Equivalent (PCE) 36 (min.) and of size between 75 and 150 mm. In 2015-16, about 17,400 tonnes diaspore was consumed almost entirely in the refractory industry as compared to 14,800 in the previous year registering a considerable increase of 18% (Table - 3).

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.

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

*Figures rounded off.*

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**Table – 2 : Producers\* of Diaspore**

Name and address of producer	Location of mine	
	State	District
Jindutt Minerals Pvt. Ltd, Post Box No. 27, Dhadari, Chhatarpur-471 001, Madhya Pradesh	Madhya Pradesh	Chhatarpur*
The Ishwar Industries Ltd, Room No.1, 'Charan kamal', 7, Ishwar Nagar, Mathura Road, New Delhi-110 065.	Uttar Pradesh	Lalitpur*
J.K.Minerals, C-1 & C-2 Industrial Estate, Gwalior Road, Jhansi-284 003, Uttar Pradesh.	Uttar Pradesh	Jhansi* Lalitpur*
Khajuraho Minerals Post Box No.25, Chhatarpur-471 001, Madhya Pradesh.	Madhya Pradesh	Chhatarpur*
Eastern Minerals 35,Vivekanand Marg, Cantonment, P.O. Jhansi-284 001, Uttar Pradesh.	Madhya Pradesh	Chhatarpur*

\* Produced as an associated mineral with pyrophyllite.

## DIASPORE

**Table – 3 : Consumption\* of Diaspore  
2013-14 to 2015-16  
(By Industries)**

(In tonnes)

Industry	2013-14	2014-15(R)	2015-16 (P)
<b>All Industries</b>	<b>11400</b>	<b>14800</b>	<b>17400</b>
Ceramic	++	++	++
Refractory	11400	14800	17400

*Figures rounded off.*

*\*Includes actual reported consumption and/or estimates made wherever required and due to paucity of data, coverage may not be complete.*