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FULLER'S EARTH

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GOVERNMENT OF INDIA
MINISTRY OF MINES
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Fuller's earth, like bentonite, is also known as 'bleaching clay' because of its inherent bleaching properties. Fuller's earth is non-plastic clay that can be used to decolorise, filter and purify animal, mineral & vegetable oils and greases. It has great commercial importance like bentonite. Bentonite is a swelling-type clay but fuller's earth is a non-swelling-type clay. This property difference is because of their chemical composition. Bentonite contains sodium, whereas fuller's earth contains calcium. Calcium bentonite, more commonly called fuller's earth, can be converted into sodium bentonite by cation exchange process or acid activation.

RESOURCES

The total reserves/resources of fuller's earth as per UNFC system as on 1.4.2010 are placed at 256.7 million tonnes. Out of these, only 58,200 tonnes are placed under 'reserves' category while about 256.6 million tonnes (99.98%) are placed under 'resources' category. About 74% of the total resources are located in Rajasthan. The remaining resources are in Arunachal Pradesh, Assam, Karnataka, Madhya Pradesh, Rajasthan and Telangana. The statewise reserves/resources of fuller's earth are given in Table-1.

PRODUCTION

Fuller's earth is declared as minor mineral under Mines and Minerals (Development and Regulation) Act, 1957. The value of fuller's earth produced in India in 2013-14 at about ₹ 77 crore was higher by 149% as compared to the previous year. The production was reported from the States of Andhra Pradesh (before bifurcation), Madhya Pradesh, Rajasthan & Karnataka.

Madhya Pradesh was leading producer accounted for 56% of the total value of production of fuller's earth followed by Andhra Pradesh with 41% and the remaining 3% was shared by Rajasthan (2%) Karnataka (1%) (Table - 2).

Table – 1 : Reserves/Resources of Fuller's Earth as on 1.4.2010
(By States)

(In tonnes)

Grade/State	Reserves			Remaining Resources			Total resources (A+B)
	Proved STD111	Probable STD122	Total (A)	Indicated STD332	Inferred STD333	Total (B)	
All India : Total	**–**	**58200**	**58200**	**912340**	**255681539**	**256593879**	**256652079**
Unclassified Grade : Total	**–**	**58200**	**58200**	**912340**	**255681539**	**256593879**	**256652079**
By States							
Arunachal Pradesh	–	–	–	10700	20000000	20010700	20010700
Assam	–	–	–	–	18860000	18860000	18860000
Karnataka	–	58200	58200	551640	1471276	2022916	2081116
Madhya Pradesh	–	–	–	–	117200	117200	117200
Rajasthan	–	–	–	350000	189709080	190059080	190059080
Telangana	–	–	–	–	25523983	25523983	25523983

Figures rounded off.

Table – 2 : Value of Production of Fuller's Earth 2011-12 to 2013-14(P) (By States)

(In ₹'000)

State	2011-12	2012-13	2013-14(P)
India	**242420**	**309502**	**771927**
Andhra Pradesh*	204276	229243	317090
Jammu & Kashmir	-	3631	-
Karnataka	11667	13378	1860
Madhya Pradesh	2387	14550	433766
Rajasthan	24090	48700	19211

Source: *State Governments.*
** Figures mentioned are of districts belonging to Andhra Pradesh before it was bifurcated in Andhra Pradesh and Telangana states.*

INDUSTRY

Fuller's earth Corporation has its own Fuller's Earth mines located at Village Proddutur, Shankarpally Mandal, Ranga Reddy distt, Telangana. The ownership of mines enables it to maintain uniform quality of raw material that is used for manufacturing Activated Bleaching earth.

USES

Fuller's earth is used to decolourise, deodorise, dehydrate and neutralise various minerals, vegetable, animal oils, etc. It is also used in the manufacture of No Carbon Required (NCR) papers. Of late, the growth in consumption in these Sectors, has been affected because of the advent of more sophisticated techniques in refining and due to availability of effective substitutes like activated bauxite and magnesium silicate. Fuller's earth is generally used in Fertilizer Industry as a carrier. In animal feed,fuller's earth is used as binders for pelletised feeds, carriers of supplement free flowing additives for feed in flour and lubricants to reduce dye friction. Consumption, however, is expected to rise in other unconventional uses as absorbent, for cleaning oil spillage on factory floors, as carrier for insecticides, fungicides and as a mineral filler & extender.

CONSUMPTION

The estimated consumption of fuller's earth remained unchanged at 5,600 tonnes in 2014-15. Likewise Vanaspati Industry remained the largest consumer, accounted for about 91% consumption, followed by Chemical Industry with 5%. A sizeable quantity is consumed in rural and urban areas for non-industrial uses like plastering mud walls and washing of hair. However, the consumption data for such non-industrial purposes are not available (Table-3).

Table- 3: Consumption* of Fuller's Earth 2012-13 to 2014-15 (By Industries)

(In tonnes)

Industry	2012-13	2013-14 (R)	2014-15(P)
All Industries	**5600**	**5600**	**5600**
Chemical	300(1)	300(1)	300(1)
Petroleum refining	200(3)	200(3)	200(3)
Vanaspati	5100(12)	5100(12)	5100(12)

Figures rounded off.
Figures in parentheses denote the number of units in organised sector.
**Paucity of data, hence coverage may not be complete.*

WORLD REVIEW

The world production of fuller's earth remained more or less same at 3.42 million tonnes in 2014 as against 3.43 million tonnes in 2013. The USA was the top producer, accounted for about 60% of the world production. Other principal producers were Spain (17%), Mexico (9%) and Senegal (6%) (Table-4).

FOREIGN TRADE

There were no exports and imports of fuller's earth during 2013-14 & 2014-15.

Table- 4: World Production of Fuller's Earth (By Principal Countries)

(In '000 tonnes)

Country	2012	2013	2014
World: Total*	**3336**	**3432**	**3422**
Australia[e]	10[e]	11	10
India[e]	6	6	6
Japan[e]	110	110	110
Korea, Rep. of	58	51	54
Mexico	227	301	300[e]
Morocco	82	59	60[e]
Pakistan	10	12	11
Senegal (Attapulgite)	181	235	191
South Africa (Attapulgite)	16	21	18
Spain (Attapulgite & Sepiolite)	646	626	582
USA	1980	1990	2070[e]
Other countries	10	10	10

Figures rounded off.
Source*: World Mineral Production, 2010-2014.*
** Including Attapulgite & Sepiolite.*