

39 Fuller's Earth

Fuller's earth, like bentonite, is also known as 'bleaching clay' because of its inherent bleaching properties. 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. Activated fuller's earth is mainly used in bleaching and refining of vegetable and mineral oils.

RESOURCES

The reserves/resources of fuller's earth as per UNFC system as on 1.4.2005 are placed at 256.7 million tonnes. Out of these, only 58,200 tonnes placed under 'reserves' category while about 99.98% are placed under 'resources' category. About 74% resources are located

in Rajasthan. The remaining resources are in Andhra Pradesh, Arunachal Pradesh, Assam, Karnataka and Madhya Pradesh. 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 2006-07 at Rs. 9.3 crore was 16% higher than that of the previous year.

Production of fuller's earth was reported from the States of Andhra Pradesh, Madhya Pradesh, Karnataka and Rajasthan.

As in the earlier years, Andhra Pradesh reported substantial production of fuller's earth. In terms of value, the State accounted for the maximum share of 90.87% followed by Rajasthan 6.55% in the total value of production of fuller's earth during 2006-07 (Table - 2).

**Table - 1 : Reserves/Resources of Fuller's Earth as on 1.4.2005
(By States)**

Grade/State	(In tonnes)						
	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							
Andhra Pradesh	-	-	-	-	25523983	25523983	25523983
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

Figures rounded off.

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**Table - 2 : Production Value of Fuller's Earth
2004-05 to 2006-07
(By States)**

(In Rs. '000)			
State	2004-05	2005-06	2006-07(p)
India	74816	80409	93366
Andhra Pradesh	53386	72766	84846
Rajasthan	7807	4959	6123
Karnataka	-	1707	1707
Madhya Pradesh	13623	977	690

Source : State Governments

USES

Fuller's earth is generally used in fertilizer industry in India. Fuller's earth is also used usually after activation in decolourising vegetable oils, petroleum, lubricants, etc. Recently, the growth in its consumption,

in this sector, has been affected because of advent of more sophisticated techniques in refining and effective substitutes like activated bauxite and magnesium silicate. Consumption, however, is expected to rise in other unconventional uses as absorbent, cleaning oil spillage on factory floors, as carrier for insecticides and fungicides and as a mineral filler and extender.

CONSUMPTION

The consumption of fuller's earth was at 5,100 tonnes in 2007-08 (Table-3). Vanaspati industry, the largest consumer, accounted for about 94% consumption, followed by chemical 6%. 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 purposes are not available.

**Table - 3 : Reported Consumption of Fuller's Earth, 2005-06 to 2007-08
(By Industries)**

(In tonnes)			
Industry	2005-06(R)	2006-07	2007-08(p)
All Industries	3200	4700	5100
Chemical	300(1)	300(1)	300(1)
Petroleum refining	100(3)	++ (3)	++(3)
Vanaspati	2800(12)	4400(13)	4800(13)

Figures rounded off.

Data collected on non-statutory basis.

Figures in parentheses denote the number of units in organised sector reporting consumption.

WORLD REVIEW

The world production of fuller's earth increased to 4.04 million tonnes in 2007 from 3.93 million tonnes in the previous year. The USA

was the top producer accounting for about 66% of the world production. Other principal producers were Spain, Senegal, Morocco and Japan (Table-4).

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

(In '000 tonnes)

Country	2005	2006	2007
World : Total*	4190	3932	4043
India ^e	93	50	80
Japan ^e	110	110	110
Korea, Republic of	85	46	65
Mexico	107	102	34
Morocco	31	29	122
Pakistan	17	16	11
Senegal (Attapulгите)	127	140	140
South Africa (Attapulгите)	34	49	65
Spain (Attapulгите & Sepiolite)	828	827	724
UK	6	-	-
USA	2730	2540	2670 ^e
Other countries	22	23	22

* Including Attapulгите & Sepiolite.

Source: World Mineral Production, 2003-2007.

FOREIGN TRADE

Exports of Fuller's earth increased to 84,015 tonnes in 2007-08 from 39,592 tonnes in 2006-07. Exports were mainly to Malaysia (63%),

UAE (12%), Kuwait (10%) and Saudi Arabia (9%). There were no imports of fuller's earth in 2007-08 as against 2,696 tonnes in the previous year (Tables - 5 and 6).

**Table - 5 : Exports of Fuller's Earth
(By Countries)**

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	39592	101807	84015	173576
Malaysia	13545	25870	52916	86949
UAE	11020	27861	9946	23339
Kuwait	3542	12684	8738	20763
Saudi Arabia	6355	9750	7435	17712
Bangladesh	-	-	1307	5039
Nepal	815	2941	953	3307
Sri Lanka	617	2643	748	3269
Qatar	598	2668	550	2571
Bahrain	449	2557	296	1430
Chinese Taipei/Taiwan	587	5626	-	-
Other countries	2064	9207	1126	9197

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**Table - 6 : Import of Fuller's Earth
(By Countries)**

Country	2006-07		2007-08	
	Qty (t)	Value (Rs.'000)	Qty (t)	Value (Rs.'000)
All Countries	2696	48441	-	-
Australia	3	233	-	-
China	66	617	-	-
France	22	1376	-	-
Germany	162	4018	-	-
Indonesia	2042	30950	-	-
South Africa	25	1867	-	-
Spain	13	326	-	-
USA	363	9054	-	-