



**Trade Development Authority of Pakistan**

Report on

**Gypsum**



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**NATURAL GYPSUM** The mineral Gypsum precipitated some 100 to 200 million years ago when sea water evaporated. From a chemical point of view it is Calcium Sulphate Dihydrate ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) deposited in sedimentary layers on the sea bed. Under high pressure and temperature Gypsum turns into Anhydrite ( $\text{CaSO}_4$ ). In nature, Gypsum and Anhydrite occur as beds or nodular masses up to a few meters thick. Gypsum is formed by the hydration of Anhydrite. The depth of hydration can range from the surface of the deposit down to three hundred meters, depending on temperature and pressure, topography and the structure of the deposit. Anhydrite is often mined in the conjunction with Gypsum, but is comparatively limited in its technical applications.

### **Formation of Gypsum**

Gypsum is the more common name for a mineral compound called calcium sulphate dihydroxide, or sulphate of lime. Gypsum is generally found underground near deposits of limestone or other minerals formed by evaporation. One of the most common form of raw gypsum is a pure white crystal called alabaster. An other form of unprocessed gypsum occur in desert terrain and its crystals resemble the petals of a flower.

### **Extracting Natural Gypsum**

Gypsum/ Anhydrite are produced from open-cast mines, or underground mines using pillar and hall mining methods, that give extraction rates of up to 75% Gypsum is normally screened to remove 'fines' (mainly mudstones), then crushed and finely ground. Gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) is ground to a powder and heated at 150 to 165 C, three-quarters of its combined water is removed producing hemi-hydrate plaster ( $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$ ), commonly known as the 'Plaster of Paris'. When this powder is mixed with water, the resulting paste sets hard as the water, recombines to produce Gypsum again. This process can be repeated almost indefinitely, with important implications for recycling.

### **Synthetic Gypsum**

The Gypsum Industry is working towards building value for society by offering safe, economic and recyclable products as substitutes to natural Gypsum whenever possible, in order to reduce the pressure on natural resources.

### **FGD Gypsum**

An intelligent alternative is Gypsum that comes from the Flue Gas Desulphurization plant (FGD) of the power station industry. This FGD Gypsum is the end product of a wet purification procedure with natural lime, that essentially forms according to the same laws as natural Gypsum- but in a speeded-up process taking only a few hours. FGD Gypsum is an important supplement of the use of natural Gypsum. This synthetic Gypsum has a higher purity ( Gypsum content of 96%) than most natural Gypsum (80%). This means that lower quality Gypsum can be blended with high purity Desulphogypsum, allowing material that would not have been mined in the past to be classified as exploitable reserves.

### **Characteristics of Gypsum ( sulphate of lime)**

The softness of gypsum is its most prominent physical feature. It is distinguished by its softness ( Mohs Hardness of 2 ). Anhydrite is distinguishable from gypsum because of its higher specific gravity and greater hardness. When scratched with a piece of copper, gypsum will be gouged. When Gypsum ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) is ground to a powder and heated at 150-165 C, its water is removed, producing hemi-hydrate plaster (  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$ ), commonly known as the 'Plaster of Paris' when this powder is mixed with water the resulting paste sets hard as the water recombines to produce Gypsum again.

**Mining** Commercial quantities of gypsum are found in Brazil, Pakistan, Jamaica, Iran (world's second largest producer), Thailand, Spain ( the main producer in Europe), Germany, Italy, England, Ireland, in British Columbia, Manitoba, Ontario, Nova Scotia and Newfoundland in Canada, and in New York, Michigan, Indiana, Texas ( in the Palo Duro Canyon), Iowa, Kansas, Oklahoma, Arizona, New Mexico, Colorado, Utah, Arkansas and Nevada in the United States. There is also a large open pit quarry located at Plaster City, California, in Imperial County , and in East Kutai, Kalimantan. Several small mines also exist in places like Kalbarri in Western Australia where gypsum is sold to private buyers for changing the pH levels of soil for agricultural purposes. Crystals of gypsum up 11 meters (36ft) long have been found in the caves of the Naica Mine of Chihuahua, Mexico. The crystals that thrived in the cave's are extremely rare and stable natural environment.

**World Resources:** Gypsum is spread all over the world. It is extensively mined in Europe, the UK, Russia, the USA, Canada and African and Asian countries. In Asia, India is the largest producing country and possesses extensive reserves which are available for export to Ceylon, Japan and other far-east countries. At present Japan is getting supplies of gypsum from Canada.

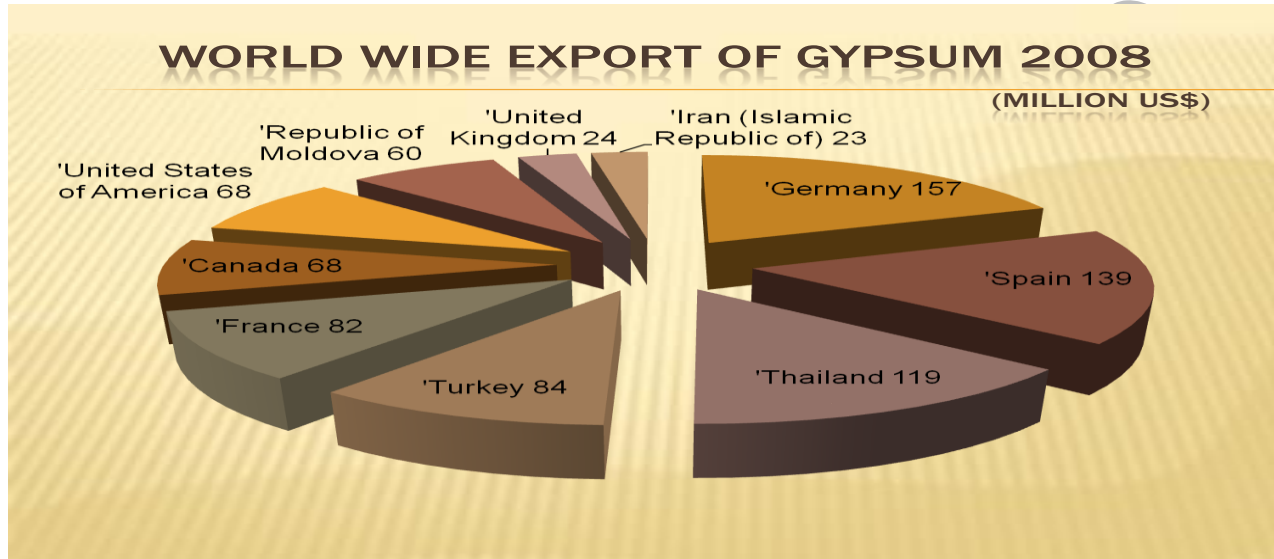
**World Mine Production and Reserves:**

World Mine Production and Reserves 'In tons'

Countries\ Mine production	2008	2009	Reserves
United States	14,400	9,400	700,000
Algeria	1, 670	1,700	
Argentina	1, 200	1,200	
Australia	4,000	4,000	
Austria	1,000	1,000	
Brazil	2,100	2,100	1,300,000
Canada	5,740	5,500	450,000
China	46,000	42,000	
Egypt	2,000	2,000	
France	4,800	4,800	
Germany	1,900	1,900	
India	2,550	2,600	
Iran	12,000	12,000	
Italy	5,400	5,400	
Japan	5,800	5,800	
Mexico	5,140	4,500	
Poland	1,580	1,300	
Russia	2,300	2,300	
Saudi Arabia	2,300	2,300	
Spain	11,500	11,500	
Thailand	8,000	8,000	
Turkey	3,000	3,000	
U. K.	1,700	1,700	
Other Countries	12,700	16,000	

World Total (rounded)	159,000	152,000	Large
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Reserves are large in major producing countries, but data from most are not available.



### World Top Importers of Gypsum- 2009-10

Value in '000'US \$

Sr. #	Importers	Value	%age Share
01.	'World	158	100
02.	Sri Lanka	80	50.6
03.	South Africa	45	28.5
04.	'Afghanistan	18	11.4
05.	Malaysia	9	5.7
06.	United Arab Emirates	4	2.5

## World-Top 10 Gypsum Exporters 2009

Source: ITC

Values in Million US\$

Sr. #	Country	Value in 2009	%age Share
	World	816.24	100.00
1	Germany	129.56	15.87
2	Thailand	121.18	14.85
3	Spain	69.32	8.49
4	Turkey	67.35	8.25
5	France	66.81	8.18
6	United States of America	54.02	6.62
7	Canada	46.72	5.72
8	Iran (Islamic Republic of)	21.86	2.68
9	United Kingdom	20.04	2.46
10	Tunisia	16.84	2.06



## World-Top 10 Gypsum Importers 2009

Source: ITC

Values in Million US\$

Sr. #	Country	Value in 2009	%age Share
	World	1,085.93	100.00
1	United States of America	79.06	7.28
2	Netherlands	69.24	6.38
3	Japan	56.71	5.22
4	Nigeria	54.76	5.04
5	Belgium	52.81	4.86
6	Indonesia	43.26	3.98
7	France	41.16	3.79
8	India	39.64	3.65
9	United Kingdom	33.75	3.11
10	Malaysia	32.63	3.00

## **USA and European Region**

**USA** In the USA, gypsum is mined in many states, the important producing states being California, Iowa, Michigan, Texas and New York. It is found to occur in horizons from Silurian to Pliocene age.

**Canada** The World's third largest producer of gypsum is Canadian deposits are found in British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia and Ontario. The important producing centres are Windermere, British Columbia; Gypsumville and Amaranth, Manitoba; Havelock and Hillsborough, New Brunswick; Flat Bay Station, Millers Creek, Wentworth, Makay Settlement and Nappan Little Narrows (Cape Breton Island), Cheverie, Milford and Walton in Nova Scotia and Hagersville, Caledonia in Ontario. At Milford, a gypsum bed, of some 135 meters thickness, underlain by dolomite is found. Finely crystalline to selenitic type gypsum is found. Gypsum is worked by quarrying except at Hillsborough, New Brunswick where underground operation is resorted.

**Mexico** Gypsum is mined in the following states in Mexico: Nuevo Leon, Coahuila, Colima, Chihuahua, Sonora, Puebla, Oaxaca, Jalisco and Baja California del Sur. A significant amount of gypsum in Mexico is used internally in the manufacture of Portland cement. Mexico is a significant exporter of gypsum to the Pacific coast of the United States and periodically to Pacific Rim countries such as Japan. Export to the US in 2003 were about 1.8 Mt. Gypsum wall board is currently manufactured at only three sites in Mexico.

**Spain** Spain has abundant resources of gypsum located predominantly in the eastern half of the country and the Balearic Islands of Mallorca, Ibiza, and Menorca. The Triassic age gypsum deposits are significant in terms of reserves, quality and minability ( Regueiro and Barros ). In Most cases, Tertiary-age gypsum deposits have a gypsum purity of 93% to 96 %. Triassic-age gypsum deposits are significant In terms of the economic, potential, continuity, thickness and quality.

**Cyprus** Abundant reserves of gypsum are found in Cyprus. It occurs in two well-defined groups of deposits, one in a narrow arcuate zone which is remarkably parallel to the trend of the Kyrenia range, in the north of the island; this includes in the important

Lupatza gypsum outcrop and the other occurs on the periphery of the Troodos igneous massif. Both these deposits are of upper Miocene age.

### Asia Region

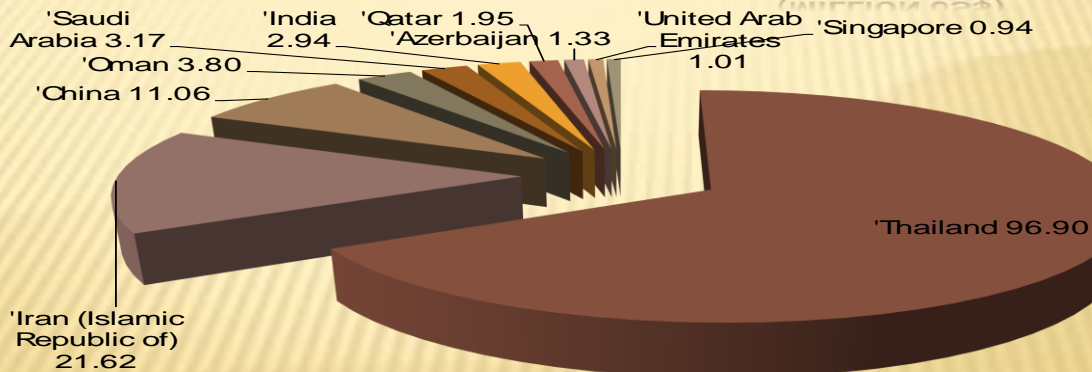
## ASIA – TOP EXPORTERS OF GYPSUM 2008

(MILLION US\$)

Exporters	Value exported in 2008	Share in world exports, %
'World	473.289	100
'Thailand	96.902	20.47
'Iran (Islamic Republic of)	21.622	4.57
'China	11.059	2.34
'Oman	3.798	0.8
'Saudi Arabia	3.166	0.67
'India	2.936	0.62
'Qatar	1.950	0.41
'Azerbaijan	1.334	0.28
'United Arab Emirates	1.006	0.21
'Singapore	0.938	0.2

## ASIA – TOP EXPORTERS OF GYPSUM 2008

(MILLION US\$)





### Asia-Top 10 Gypsum Importers 2009

Source: ITC

Values in Million US\$

Sr. #	Country	Value in 2009	%age Share
	World	1,085.93	100.00
	Asia Aggregation	338.67	31.19
1	Japan	56.71	5.22
2	Indonesia	43.26	3.98
3	India	39.64	3.65
4	Malaysia	32.63	3.00
5	Viet Nam	25.36	2.33
6	United Arab Emirates	21.21	1.95
7	Republic of Korea	16.02	1.48
8	Israel	11.42	1.05
9	Philippines	11.37	1.05
10	Bangladesh	9.48	0.87

### Asia-Top 10 Gypsum Exporters 2009

Source: ITC

Values in Million US\$

Sr. #	Country	Value in 2009	%age Share
	World	816.24	100.00
	Asia Aggregation	263.96	32.34
1	Thailand	121.18	14.85
2	Turkey	67.35	8.25
3	Iran (Islamic Republic of)	21.86	2.68
4	China	15.87	1.94
5	Bhutan	9.59	1.18
6	Kuwait	3.65	0.45
7	India	2.85	0.35
8	Oman	2.80	0.34
9	Japan	2.56	0.31
10	Qatar	2.13	0.26

## India

In India, Rajasthan accounts for 94% of gypsum. It is second largest mineral producing state in India and houses about 90% of the total mineral reserves of the country.

## **Iran**

Iran is the second largest producer of gypsum products in the World. The measured reserves some 3 billion tons whilst the total indicated gypsum reserves of Iran is about 24 billion tons. The potential reserves, when full explorations carried out, are expected to far exceed these values. There are about 200 gypsum quarries in Iran. Most of these quarries are small with discontinuous or little daily output that often feed small local plaster producers. The total output of gypsum rock in Iran reaches some 15 million tons per year consistently to ranks second or third in the World.

About three quarters of the gypsum rock produced in Iran is used for production of plasters of different types. The rest are used in cement, agriculture, construction industries.

## **Thailand**

Two main provincial areas of gypsum producing in Thailand are in Nakhon Sawan-Phichit in the north and Surat Thani-Nakhon Si Thammarat in the south. The other area was explored, as reported by Jacobson and others, in Wang Saphung of Loei province. Who had done detailed exploration in the area for 2 years of about 40million tons. At the same time gypsum deposits were investigated in the some areas of Surat Thani and Nakhon Si Thammarat Provinces, where gypsum has been produced mainly form export about 4.5 million tons a year.

Thailand have customers from Japan, Malaysia, Korea, Taiwan, Singapore, Sri-lanka, India, Bangladesh, Indonesia and the Philippines.

## **Japan**

The production comes principally from the northern area of Honshu. There are about 30 mines with an average annual production of 8 lakh tones. Domestic production is mainly utilized in the manufacture of cement. Japan imports over a lakh tones of uncalcined gypsum per year, mainly from the USA, Mexico and Australia.

## **China**

The Annual production of gypsum for all uses in China is about 11 to 12 Mt., primarily from the provinces of Shandong, Hubei, Jiangsu, Hunan, Shanxi, Sichuan, and Gansu. About 65% of China's gypsum resources occur in Shandong Province, Gypsum deposits in Hubei and Hunan provinces provide high purity gypsum to the growing market for industrial gypsum product in the cities of Guangzhou and Shanghai. The reported reserves vary from 57 to 100 billion ton. In the mid 1990's gypsum reserves of 114 billion ton were identified in Hubei Province along. Snow and fiber gypsums are used in the manufacture of ceramic plaster ( sanitary and dinnerware) , dentals and orthopedic plaster, are plasters, chalk, glass-reinforced gypsum ceiling panels, and decorative architectural details such as cornices. Some land plaster is produced for the brewery and tofu industries.

### **Gypsum importers of China**

01. Zhenjiang zhong lian I & E Co., Ltd.,  
No 155, Zhenrong Road, Zhengjiang, Jiangsu, China,212000  
Tel: 86-511-4510-818  
Fax: 86-511-4510-378
02. Linyi Anheng Imports & Export Co.,Ltd  
Lingi City, Shandong  
China 276001  
Tel: 86-0539-7389-828
03. Qingdao CABOT Import & Export CO.,Ltd  
NO.9 ZHANGZHOU ROAD2,QINGDAO  
Qingdao, Shandong  
China 26671  
Tel: 86-532-8575-5447  
Fax: 86-532-8571-1444
04. Shijiazhuang Pusi Bo Trade Co.,  
Shengjindasha 1015 Zhonghuadajie Qiaoxiqu Shijiazhuang He Bei, China  
Shijiazhuang, Hebei  
Tel: 86-0311-8093-3629

## 05. Shijiazhuang Tengchuang Trade Co.,Ltd

Huai an Rode No.96

Shijiazhuang,Hebei China 050000

[Tel:86-0311-8592-5465](tel:86-0311-8592-5465)

Fax: 86-0311-8592-5465

## 06.AST COPRATION LIMTID

JIANGSU CHINA, XUZHOU, Jiangsu,

China 221100

Tel: 86-1377-6750-648

Fax: 86-516-86-8604-1052

## 07.Taishan Gypsum Co., Ltd

DAWENKOU, Jiangsu

China 221100

Tel: 86-538-8812-677

Fax:86-538-8812-679

## 8.Hebei Xinhua Machinery Co.Ltd,

East Develping Area, Langfang City , Hebei Province, China.

Hebei China 05001

Tel: 86-311-6611-7357

Fax: 86-31-8589-4938

## 9. Jinzhou Huaxin Construction Mterials &amp; Machinery Co.,Ltd

Room 605, Building B, Beautiful East International,

Guang'an Street No. 11

Shijiazhuang, Hebei, China 050011

Tel: 86-311-8961-0688

Fax: 86-311-8961-2816

## 10. lin yi hudawood, co ltd

Lie fang road 60, Lingi, Shandong,

China 276000

Tel: 86-539-8215-699

Fax: 86-539-8218-399

## 11. Pingyi Baier Building Materials Co.,Ltd

Baier Road Ziqiu Pingyi, Linyi City,

Shandong Province , China

Tel: 86-539-493788

Fax: 86-539-4983788

**Pakistan Exports to China(Gypsum )**

1. M/s. Jallo Pints & chemical  
Shop No.06 ghondi street bohrapir  
Karachi  
009-021-2725017  
0092-321-2106839
2. M/s. Al Makkah Associates,  
22,,C Main Bukhari Commercial Street Defence Ph VI,  
Karachi.
3. M/s. Khawaja interprises  
Mr.Shahid Siraj  
AMB2/45,Khawaja Center  
Ph: 5685323-83,
4. M/s. Marwat Gypsum Suppliers  
Opp Khushali Bank West Circular Road,  
Dera Ismail Khan
5. M/s.Hussaini and co  
19-Jubilee Centre Behind, Liaquat Market,  
M.A.Jinnah Road,  
Karachi  
Ph &Fax # 2417130

6. M/s.rabka mining corporation  
Suit # 109 Progressive Center,  
Shahra-e-Faisal, Karachi.  
Ph: 92-21-438-2884  
Fax: 92-21-438-2886
7. M/s. S.A.Latif & Sons,  
Contact Person Mr. FAWAD LATIF  
Abdullah Haroon Road, Karachi  
Ph: 92-021-5211716  
Fax:92-021-5211716
8. M/s. Aquib Enterprise  
G-409 Erum apartment,  
Gulshan e Iqbal 17, Karachi.
9. M/s. Imperial Steel,  
M. amjad Aziz,  
Manager Marketing (Mineral Division)  
18-Baber Boock, New Garden Town  
Lahore  
Ph#:0092-300-4004685  
Fax: 0092-42-35940793

### **Pakistan**

#### **Pakistan Mine production & Reserves:**

Tons

Mineral	Baluchistan	KPK	Punjab	Sindh	Total
Gypsum/ Anhydrite	-	173,147	657,563	-	830,710

#### **Year-wise Mineral Production in Pakistan from 2003-04 to 2007-08**

Tons

Mineral	2003-04	2004-05	2005-06	2006-07	2007-08
Gypsum/Anhydrite	343,911	529,834	569.491	567,621	830,710

## **GYPSUM DEPOSITS IN PAKISTAN**

- The Gypsum deposits of Pakistan found in Punjab (Dera Ghazi Khan, Mianwali and Jhelum areas of Salt Range & Suleman Range), Khyber Pukhtoonkhwa (Kohat-Bannu Region) and Baluchistan (Sibi Region).

Reserves: 5.6 billion tones

Average Production: 0.4 million tons per annum.

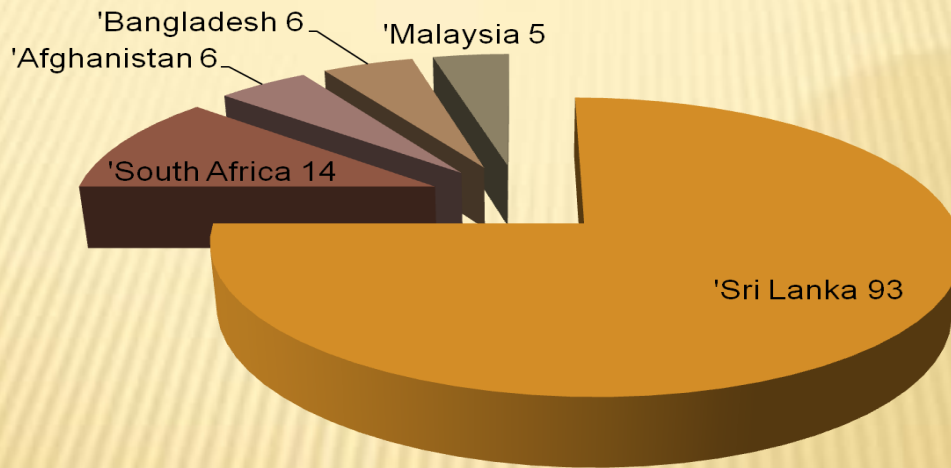
- Gypsum deposits of Pakistan have remained almost untapped for industrial uses particularly I building industry. They are generally on the surface and lend themselves to economic open cast quarrying. More-over they are well connected with existing infrastructure and can be developed without any huge expenditure and technical constrains for larger domestic use and considerable export.

## **GYPSUM EXPORTED FROM PAKISTAN 2008**

**(MILLION US\$)**

	Exported value 2008	Share in Pakistan's exports, %
'World	0.135	100
'Sri Lanka	0.093	68.9
'South Africa	0.014	10.4
'Afghanistan	0.006	4.4
'Bangladesh	0.006	4.4
'Malaysia	0.005	3.7

## GYPSUM EXPORTED FROM PAKISTAN 2008 (MILLION US\$)



### Gypsum-Pakistan Export 2007-10

Source: RAD, TDAP

Million US\$

FY09 -10		FY08 -09		FY07 - 08
% age change from last FY	Export	% age change from last FY	Export	Export
<b>1.35</b>	<b>0.163</b>	<b>4.27</b>	<b>0.161</b>	<b>0.154</b>



**PAKISTAN**  
**GYPSUM-Product wise Analysis (FY 09-10)**

Source: FBS

Million US\$

Sr. No	HS Code	Products	Export FY (Jul-June)		Change	
			(09-10)	(08-09)	Value	%
1	25201010	GYPSUM	0.0819	0.0859	(0.0039)	(4.59)
2	25201020	ANHYDRITE	-	0.0083	(0.0083)	(100.00)
3	25202000	PLASTERS OF CALCINED GYPSUM	0.0810	0.0666	0.0145	21.73
<b>TOTAL</b>			<b>0.1630</b>	<b>0.1608</b>	<b>0.0022</b>	<b>1.35</b>

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## GYPSUM

### Pakistan Export Markets July-Dec (FY2010-11)

Source: SBP

Value in '000US\$

S r. #	Country	Export July-Dec (10-11)				Export July-Dec (09-10)				Change	
		HS Code	HS Code	HS Code	Total	HS Code	HS Code	HS Code	Total	Value	%
		25201010	25201020	25202000		25201010	25201020	25202000			
		Gypsum	Anhydrite	Plasters of Calcined Gypsum		Gypsum	Anhydrite	Plasters of Calcined Gypsum			
1	India	269.3			269.3				0	269.3	100.0
2	Sri Lanka	29.2		42.2	71.4	44.1		8.0	52.1	19.3	37.0
3	China			50.9	50.9			130.4	130.4	(79.5)	(61.0)
4	South Africa	8.2			8.2	12.5			12.5	(4.3)	(34.4)
5	U. A. E.	2.5			2.5			4.6	4.6	(2.1)	(45.7)
6	Bangladesh			5.3	5.3				0	5.3	100.0

7	Hong Kong			3.0	3.0			11.0	11.0	(8.0)	(72.7)
8	Philippines				0			71.2	71.2	(71.2)	(100.0)
9	Malaysia				0			6.2	6.2	(6.2)	(100.0)
	<b>Total</b>	<b>309.2</b>		<b>101.4</b>	<b>410.6</b>	<b>56.6</b>		<b>231.4</b>	<b>288.0</b>	<b>122.6</b>	<b>42.6</b>

### **Free Trade Agreement (FTA) with Sri-Lanka**

Sri Lanka is a big market of Gypsum Powder, Gypsum Plaster, Gypsum Boards & Gypsum Ceiling Tiles and Pakistan after the development of production facilities of these items can capture the big share of market of Sri Lanka after the enlistment of Gypsum product range is Free Trade Agreement w.e.f. 1st of January 2011. Pakistan will have the price advantage over China & Thailand ( the existing exporting countries ) due to geographical proximity.

### **Free Trade Agreement (FTA) with China**

Free Trade Agreement (FTA) is Signed between China and Pakistan 24-11-2006. According to the to the agreement, China and Pakistan will reduce the tariffs on all goods in two phases. In the first phase, both sides will reduce the tariffs on 85% percent of goods by different margins within five years of the agreement entering into force, and 36 percent of the goods will be tariff free within three years. China will mainly reduce tariffs on livestock, aquatic products , vegetables, mineral products and textiles, while Pakistan will mainly reduce tariffs on beef and mutton, chemicals and electronic and mechanical products.

December 17, 2010

- Pakistan is expecting breakthrough regarding establishment of 1 gig watt (GW) nuclear power plant during the Chinese Prime Minister Wen Jiabao's three day visit to Pakistan starting from December 17, on Monday.

- According to the highly placed government al and diplomatic sources, officials of Pakistan and China have been engaged in extensive talks on setting up a nuclear power plant in Pakistan having a capacity of producing 1 GW electricity.
- It is important to mentioned here that China has already completed construction of one nuclear power plant of 300MW in Pakistan while another plant of the same capacity is likely to be complete next year. Meanwhile, the project of constructing 1 GW nuclear power plant is likely to be finalized during Wen Jiabao's visit to Islamabad.
- During Jiabao's visit, both the sides are expected to final 'Currency swap agreement' while Pakistan will stress for making full use of the Pak-China free Trade agreement for increasing bilateral trade to \$15 billion per year. The China-Pakistan business summit in Islamabad would look at the ways to reduce trade deficit between the two countries while taking steps for increasing the total trade volume, In view of the importance of Pakistan-China relations, the number of business delegates has been increased from 150 to 260.

### **Widely used mineral(Gypsum)**

Gypsum is one of the most widely used minerals in the World. Some 90 countries mine gypsum, producing more than 100 million tons (91 million )metric tons) annually Low-grade gypsum is manufactured synthetically at coal-fired electric power plants as a by-product of pollution-control processes that remove sulfur from flue gas. Synthetic gypsum production exceeds 110 million tons (100 million metric tons ) annually.

### **Cement**

Cement output in Asia rose from 831 Mt in 1996 to 1,057Mt in 2003 , and average annual increase of 3.5%. The largest rise in Asian cement production took place in China, where output grew from 490Mt to 750 Mt. The Chinese supply of natural gypsum appears insufficient to meet demand, and it is likely that large amounts of phosphogypsum and other synthetic gypsum are used in addition.

## **Plasterboard**

The Eastern European and Asian plasterboard markets have seen investment in new capacity and have the potential to become important market because of their large populations and current low per capita consumption.

The supply of gypsum in developed economies is also growing as the recycling of gypsum waste becomes more common. As estimated 4 Mtpy of waste in the USA is recycled, and increasingly significant amounts are recovered in the EU and Japan.

## **Cost houses**

Gypsum Boards, Gypsum Plasters have big market in our neighboring countries, Investors are needed to develop Gypsum deposits for their processing & manufacturing of its products. With little marketing effort, Pakistan can develop export of Gypsum and its products to the level of at least US \$ 5 million per annum from the existing export of less than US\$ 1 Million within a couple of years.

Gypsum, or hydrated calcium sulfate, has been an import construction material for centuries. It is mined from hardened ocean and saline-lake brine deposits. Natural supplies of the material are abundant, particularly in the United States, Canada, France, Italy, and Britain.

## **Proposals/Recommendations for establishment of Gypsum Trade**

The export of Gypsum has increased from US \$ 0.160 Million (2008-09 to US\$0.163 Million in FY (2008-09):

- Gypsum in powder form ( Ground Gypsum ) can be easily exported as corrector of low quality tube wells water and in the production of plaster sand blocks with gypsum mortar for the construction of low are also the very attractive regional markets for the export of Gypsum and its products; Sri Lanka, Japan, Indonesia , India, Malaysia, UAE, Bangladesh, China, Korea, Taiwan, Singapore and Philippines.
- Sri Lanka is a big market of Gypsum Powder, Gypsum Plaster, Gypsum Boards & Gypsum Ceiling Tiles and Pakistan after the development of the production

facilities of these items can capture the big share of market of Sri Lanka after the enlistment of Gypsum product range in Free Trade.

- Agreement Pakistan will have price advantage over China & Thailand ( the existing exporting countries) due to geographical proximity. Gypsum is expected to be duty free in FTA with Sri Lanka w.e.f. 1st January,2011.
- Japan, Indonesia, India, Malaysia, UAE & Bangladesh are also the very attractive regional markets for export of Gypsum and its products.
- Gypsum is powder form (Ground Gypsum) can be easily exported as corrector of low quality tube wells water and in the production of plaster sand blocks with gypsum mortar for the construction of low cost houses.
- Gypsum Boards, Gypsum Plasters have big market in our neighboring countries. Investors are needed to develop Gypsum deposits for their processing & manufacturing of its products.
- With little marketing efforts, Pakistan can develop export of Gypsum and its products to the level of at least US\$ 5 Million per annum from the existing export of less than US \$ 1 Million within a couple of years.

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