
Investment Opportunities Map

Jordan Investment Board

Surgical Grade Plaster Project

Pharmaceutical Sector

“Project Profile”



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The Project at a Glance	
Project Name	Surgical Grade Plaster Project
Project Production Capacity	500 tons/year
Manpower	9
Total Investment Cost	US\$ 248 Thousand
Initial Working Capital	US\$ 21 Thousand
Internal Rate of Return (IRR)	24.7%
Breakeven Point	34 % of Production Capacity

Surgical Grade Plaster Project

1. Introduction

1.1 Product Uses and Description

Gypsum is one of the most important non-metallic minerals required by many industries. Gypsum, which is well known as Plaster of Paris, is hydrous calcium sulphate with the chemical composition: $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$.

High purity gypsum is used extensively in the ceramic industries and in manufacturing the surgical grade Plaster of Paris.

The surgical grade plaster is used for the following purposes:

- Surgical bandages gauze.
- In orthopedic departments for treatment of fractures and bone joining.
- Other medical purposes in dental treatment.

The main property of surgical grade plaster is its short setting time which, on average, equals about 5 -6 minutes.

The plaster comes in powder form, packed in 25kg multilayer bags.

1.2 Potential Consumers:

- Hospitals
- Health centers and clinics
- Dental clinics
- Producers of surgical bandages

2. Market Aspects

2.1 Trade Balance

External trade statistics give data on plaster for dental purposes and other uses. The average annual imports of plaster for dental uses during 1999 – 2003 was about 38 tons. Data on other types of plaster are shown in Table number (1)

Table (1)
External Trade Statistics
Plaster for other than Dental Purposes (Tons)

Year	Imports	Exports	Re-Exports	Balance
1999	60	10	-	50
2000	167	182	-	- 15
2001	114	-	-	114
2002	330	-	-	330
2003	221	252	-	- 30
Average	178	89	-	90

Source: Department of Statistics

From table (1), the external trade balance of the above types of plaster showed an annual average deficit of 90 tons.

2.2 Estimated Local Demand

The estimated local demand for plaster for different uses is 118 tons/year .There are also imports in the form of plaster bandages representing part of the demand .However, and based on the above data, it could be assumed that the domestic demand on surgical grade plaster is about 100 tons/year.

2.3 Forecasted Future Demand

The annual projected future increase in demand could be based on the following factors:

- The annual population growth in Jordan: 2.8 %.
- The continuous improvement of health care levels.

Consequently, it could be projected that demand will increase at an annual rate of 5 % (table 2).

Table (2)
Forecasted Future Local Demand (Market Size)

Year	2005	2010	2015
Tons	110	141	180

2.4 Imports & Competition

Current imports of plaster are coming mainly from West Europe and the USA. For plastic bandage, there is limited local production in addition to imports. The price of imported bandages is about double the price of the local production.

2.5 Project Capacity

The estimated annual local demand on plaster will reach about 180 tons in 2015. The proposed project will be oriented toward exports. The expected demand in the neighboring and GCC countries will exceed 2000 tons/ year in 1015.

The proposed annual capacity of the project is 500 tons based on 8 working hours per day and 300 days per year.

Table (3) indicates the annual production size development.

Table (3)
Production Size Development

Year	Capacity Utilization	Ton
1	50 %	250
2	75 %	375
3+	100 %	500

2.6 Projected Sales Revenues

The average price of imported plaster is higher than US\$ 400/ton. The project's proposed sales price is US\$ 350 / ton. The estimated project revenues in the first year of production are US\$ 87,500.

Table (4)
Projected Sales Revenues

Year	2	3 +
US\$	131,250	175,000

3. Technical Aspects

3.1 Project Location

The greatest advantage of this project is the availability of the gypsum raw material in Jordan.

Based on the Natural Resources Authority information, the largest reserves of gypsum in Jordan are located in:

- Zarqa river : 10 million tons
- Southern area: 8 million tons.

The project location could be in any of these areas, preferably in the southern province of Jordan as most exports will be via Aqaba port.

3.2 Manpower

Table (5)
Manpower Requirements

Job	Required No.
General Manager	1
Administrative Clerk	2
Technician	2
Laborer	4
Total	9

The total annual salaries and wages of the above employees (including fringe benefits), in addition to overhead and administrative expenses are estimated at US\$ 33 thousand.

3.3 Land & Buildings

Table (6)
Land and Buildings Cost

Item	Area m²	Cost US\$
Land	1,000	15,000
Buildings	300	42,000

3.4 Raw Materials

Mineral gypsum is the locally available raw material required for producing surgical grade plaster. The project's annual consumption of gypsum will be about 430 tons at a price of about US\$ 55 / ton.

3.5 Technology

A major source of machinery and equipment is India.

4. Financial Aspects

Basic Assumptions

The financial analysis and indicators are based on the following assumptions:

1. Project operational life is 10 years.
2. Internal Rate of Return (IRR) is calculated at 100% equity ratio.
3. Income tax is calculated at 15% on net taxable income.
4. Net Present Value (NPV) is calculated at 12% discounted annual rate.
5. Initial working capital is based on the operating expenses needed for three months.
6. Operating expenses comprise raw materials, labor cost and overheads, utilities and other expenses.
7. Pre -operating expenses consist of studies fees, capital issue, licensing, training, trial operations and other similar expenses.

4.1 Project Investment Cost

Table (7)
Total Investment Cost

Item	US\$
Land	15,000
Buildings	42,000
Machinery & Equipment	120,000
Transport means	20,000
Sub- Total (Fixed Assets)	197,000
Contingency (10%)	20,000
Pre – Operating Expenses	10,000
Initial Working Capital	21,000
Total Investment Cost	248,000

4.2 Financial Indicators

- ROI = 22.1 %
- IRR = 24.7 %
- NPV = 154 Thousand US\$
- BEP = 34 % of production capacity
- Payback Period = 4 Years.