

Project Profile
On
Magnesium Sulphate

1. **Product Code (ASICC Code) : 31545**
2. **Quality Control & Standards : As per I.P. Standards.**
3. **Production Capacity : 450 M.T. per Annum.**
4. **Month & Year of Preparation : March, 2010**



Govt. of India,
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1. INTRODUCTION:

Magnesium sulphate is a chemical compound containing Magnesium Sulphur & Oxygen with the formula $MgSO_4$. It has a tendency to absorb water from the atmosphere, so it is often found in hydrated form i.e. $MgSO_4 \cdot 7H_2O$. Magnesium Heptahydrate, also known as Epsom Salt is the most commonly available form of Magnesium sulphate. It is an important raw material used in Pharmaceuticals.

2. MARKET POTENTIAL:

Magnesium Sulphate has a variety of uses, both in anhydrous (powder / flakes) form as well as hydrated form. The product is used in pharmaceutical industries as a purgative and has a wide market in pharmaceutical industries in different parts of the country. Some of the key medicinal values of Magnesium sulphate or Epsom salt are as under :

- When used orally, it acts as a laxative. It helps the removal of undigested food present in the large intestine and by stimulating bowel movement, it acts as a remedy for constipation.
- Magnesium Sulphate when administered in the veins or muscles of pregnant women, helps to delay premature labor and thereby prevent a premature birth.
- Magnesium Sulphate is also used to treat severe attacks of Asthma.
- Epsom salts dissolved in water and applied on the joints can give relief to joint pains of arthritic patients.
- It acts as a cosmetic agent and is easily absorbed in to the skin. Thus it helps in cleanings, soothing inflammations like boils and preventing wrinkling of the skin.
- Epsom salt is also good for many hair – related problems. When applied with shampoo, it absorbs the excess oil from oily hair, and adds glow and bounce to the hair. A warm mixture of Hair conditioner and Epsom salt, when used on hair is said to give it a shine.

In Agriculture & gardening, it is used to correct Magnesium deficiency. Magnesium Sulphate is used in bath salts, particularly in flotation therapy, where high concentrations raise the bath water's specific gravity, effectively making the body more buoyant. Anhydrous Magnesium Sulphate is commonly used as a desiccant in organic synthesis due to its affinity to water.

It may also be used as coagulant for making tofu.

3. BASIS AND PRESUMPTIONS:

- a. The estimates are drawn for a production capacity generally considered techno economically viable for model type of manufacturing activity.
- b. The production is based on single shift of eight hours and 300 working days per annum.
- c. The cost in respect of Plant & Machinery has been taken at the time of preparation of Project Profile, which may vary from place to place and time to time.
- d. Labor charges has been taken as per State Govt. norms.
- e. The project is based on standard type of manufacturing activity utilizing conventional techniques of production at optimum levels of performance.

4. IMPLEMENTATION SCHEDULE:

It will take about eight months to start commercial production as under:

Sr. No.	Activity	Estimated Period
1.	Registration under MSME Act	0-1 Month
2.	Preparation of scheme	0-1 Month
3.	Sanction of loan	1-5 Month
4.	Placement of Order for Plant & Machinery	5-6 Month
5.	Power & Water Connection	5-6 Month
6.	Installation of Plant & Machinery	6-7 Month
7.	Procurement of Raw material & Trial Run	7-8 Month
8.	Commercial Production	8 th Month onwards

5. TECHNICAL ASPECTS:

- a. **Production Capacity** : **450 M.T. Per Annum**
- b. **Quality Control & Standards** : **As per IP Standards**

Physical & Chemical Properties:

- Appearance : Transparent Crystals or White Powder.
Odor : Odorless
Solubility : Soluble in water.
pH : Aqueous solution is neutral or slightly acidic.
Melting Point : 1124°C
Stability : Stable under ordinary conditions of use & storage.

c. Manufacturing Method :

Calcined Magnesite Powder is purified mainly from iron impurities by passing it through magnetic separator. Magnesite powder is then reacted with dilute Sulphuric Acid solution. After completion of the reaction the solution is transferred to evaporator, where it is concentrated. The hot concentrated solution is then fed to Crystallizer. The crystals are then centrifuged, dried and packed.

Handling and Storage :

Keep in a tightly closed containers, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous, when empty since they retain product residues (Dust, solids etc.).

6. FINANCIAL ASPECTS :

Sr. No.	Description	Quantity	Value (Rs.)
a.	Land & Building Factory Shed - 250 Sq.mtrs. Office Godown-50 Sq.mtrs. on rental basis	L.S	10,000.00
b.	Machinery & Equipments		
i)	Magnetic Separator	01 No.	25,000.00
ii)	Stone ware vessels 100 Lit. capacity	15 Nos.	45,000.00
iii)	Evaporator S.S.M.S. Jacket 500 Lit. capacity	02 Nos.	1,00,000.00
iv)	Crystallizer SS with M.S. cooling jacket 500 lit. capacity.	02 Nos.	1,00,000.00
v)	Boiler Cap. 100 psi with chimney pipe line 100 kg/hr.	01 No.	1,20,000.00
vi)	Centrifuge Basket type 24" diam.	01 No.	80,000.00
vii)	Filter Press 16 M.S. Plates	01 No.	60,000.00
viii)	Drier 48 Tray. Model 32"x32"x4" Elec.	01 No.	1,00,000.00
ix)	Laboratory Equipments	01 No.	25,000.00
x)	Misc. equipments such as M.S. Storage tank, pump & furniture etc.	L.S.	50,000.00
xi)	Installation of plant & machinery @ 10% of the cost of plant & Machinery.	L.S.	70,500.00
xii)	Preoperative Expenses	L.S.	25,000.00
		Total	8,00,500.00

c. RAW & PACKING MATERIALS PER MONTH:

Sr. No.	Description	Quantity	Amount (Rs.)
01.	Dead Burnt Magnetic MgO content – 85% approx. @ Rs.6000 per MT	7.5 MTS	45,000.00
02.	Sulphuric Acid 98% @ Rs.5000 per MT	15 MTS	75,000.00
03.	Misc. chemicals & Packing material	L.S.	25,000.00
		Total	1,45,000.00

d. SALARY & WAGES PER MONTH:

Sr. No.	Description	Quantity	Amount (Rs.)
01.	Manager	01 No.	5,000.00
02.	Chemist/Supervisor	01 No.	4,000.00
03.	Accountant/Cashier	01 No.	4,000.00
04.	Skilled workers	02 Nos.	6,000.00
05.	Unskilled workers	06 Nos.	15,000.00
		Total	34,000.00

e. UTILITIES PER MONTH:

Sr. No.	Description		Amount (Rs.)
01.	Electricity @ Rs.5.50 per unit.	10 H.P.	6,000.00
02.	White Coal @ Rs. 3 per Kg	6,500 Kg.	19,500.00
03.	Water	L.S.	1,500.00
		Total	27,000.00

f. OTHER EXPENSES PER MONTH:

Sr. No.	Description	Amount (Rs.)	
01.	Rent	10,000.00	
02.	Telephone Expenses	1,000.00	
03.	Postage & Stationery	1,000.00	
04.	Marketing & Traveling Expenses	10,000.00	
05.	Repairs & Maintenance @ Rs.100 per M.T.	3,750.00	
06.	Insurance 2% of the cost of Plant & Machinery	1,175.00	
07.	Other Misc. Expenses	1,000.00	
		Total	27,925.00

g. WORKING CAPITAL PER MONTH: 2,33,925.00

(c + d + e + f)

h. TOTAL CAPITAL INVESTMENT:

Sr. No.	Description	Amount (Rs.)
01.	Fixed Capital	8,00,500.00
02.	Working capital Three Months	7,01,775.00
	Total	15,02,275.00
	Or say	15,02,000.00

7. FINANCIAL ANALYSIS:

a. COST OF PRODUCTION PER ANNUM:

Sr. No.	Description	Amount (Rs.)
01.	Raw & Packing Materials	17,40,000.00
02.	Salary & Wages	4,08,000.00
03.	Utilities	3,24,000.00
04.	Other Expenses	3,35,100.00
05.	Depreciation on Machinery & Equipments @ 10% p.a.	70,500.00
06.	Interest on borrowed capital @ 13% per annum	1,95,260.00
	Total:	30,72,860.00
	Or Say	30,73,000.00

b. TURNOVER PER ANNUM):

450 MTS @ Rs. 8,000/- per M.T.

Rs.36,00,000.00

c. PROFIT PER ANNUM:

Profit = Total Turnover - Cost of Production
= Rs.36,00,000 - Rs.30,73,000
= **Rs.5,27,000**

d. PROFIT ON SALES:

$$\begin{aligned} \% \text{ Profit} &= \frac{\text{Profit}}{\text{Total Turnover}} \times 100 \\ &= \frac{5,27,000}{36,00,000} \times 100 \\ &= \mathbf{14.6 \%} \end{aligned}$$

e. RATE OF RETURN ON TOTAL CAPITAL INVESTMENT (ROR):

$$\begin{aligned} \text{ROR} &= \frac{\text{Profit}}{\text{Total Capital Investment}} \times 100 \\ &= \frac{5,27,000}{15,02,000} \times 100 \\ &= \mathbf{35 \%} \end{aligned}$$

f. BREAK EVEN ANALYSIS :

FIXED COST :

Sr. No.	Description	Amount (Rs.)
01.	Interest on borrowed capital @ 13 % p.a.	1,95,260.00
02.	Depreciation on Machinery & Equipments @ 10% p.a.	70,500.00
03.	40% of Salary & Wages	1,63,200.00
04.	40 % of Other Expenses	1,34,040.00
	Total	5,63,000.00

BREAK - EVEN POINT (B.E.P.) :

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{Fixed Cost}}{\text{Fixed Cost} + \text{Profit}} \times 100 \\ &= \frac{\text{Rs.5,63,000}}{\text{Rs.5,63,000} + \text{Rs.5,27,000}} \times 100 \\ &= \mathbf{51.7 \%} \end{aligned}$$

NAMES AND ADDRESSES OF MACHINERY & EQUIPMENT SUPPLIERS:

01. M/s. Mani Agro Chem., 5 - A, Sengalpatty 4th Street, Karungalpatty, Salem – 636006, Tamilnadu.
Tel. No. (0427)2466010, 2469599 Fax No. (0427)2465889
Cont. Person : Shri V. Rasappan Mani / Shri Prem Mani
Mobile No. : 09842716688 / 09943068899
E – mail : maniagrochem@eth.net, maniagrochem@gmail.com
02. M/s. Unique Enterprises, 201, Konarka Mugdha Apartment, 36, Saraswati Cooperative Housing Society, Deendayal Nagar, Nagpur – 22.
Tel. No. (0712)2224362, (07104)235675
Cont. Person : Dr. Mukund Moholkar, Mb: 09823116709
Website: www.uniquepulveriser.com,
E – mail: uniquepulveriser@mahamail.com
03. M/s. Qazi Engineering Pvt. Ltd.
G-21, Upsidc Industrial Area, Site No.1, Panki, Kanpur – 208022 (U.P.)
Tel. No.(0512)2692353, 3242808, 6456117, Fax. No. (0512)2692353
Cont. Person: Shri S.H.Qazi, Mb: 9336118246
Website : www.qaziengineering.org.

NAMES AND ADDRESSES OF RAW MATERIAL SUPPLIERS:

1. M/s. Almorah Magnestite Ltd., Nirmal Sadan, Mali Road, Almorah-Uttaranchal.
2. M/s. Swastik Acids & Chemicals, Near Sai Mandir, Opp: Methi Hospital, Chandrashekar Azad Square, Behind Arafat Hotel, Central Avenue, Nagpur – 440032. Tel No. (0712)2764908, 2763548, Fax No. 2770343.
E – mail: swachem@gmail.com
3. M/s. Jain Acids & Chemicals, 19 / A, Central Avenue Road, Gandhibagh, Nagpur.
Cont. Person : Shri Suraj Jain / Shri Satish Jain
Tel No.(0712)2766923, 2761233

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