

Market Research of Magnesium Sulphate in China

June 2018

The First Edition

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1. Introduction

Market Research of Magnesium Sulphate in China, finished in June 2018, is CCM's first edition report on China's magnesium sulphate industry. This intelligent report attaches importance to the following parts:

- Magnesium sulphate quality standards in China.
- Magnesium sulphate consumption and price in China.
- Production technology and cost analysis of magnesium sulphate production

2. Approach for this report

This report is based on data collected with diverse methods, which are listed as follows:

Desk research

This includes access to published magazines, journals, government, industrial statistics, association seminars as well as information from the Internet. A lot of work has gone into the compilation and analysis of the obtained information. Data collected and compiled are variously sourced from:

- CCM's database
- Published articles from periodicals, magazines, journals, and third-party database
- Statistics from governments and international institutes
- Comments from industrial experts on various platforms
- Information from the Internet

Telephone interview targets

- Key producers
- Key traders
- Industrial associations
- Industrial experts

Data compilation and crosscheck

Data obtained from various sources have been combined and cross-checked to ensure that this report is as accurate and methodologically sound as possible.

3. Executive summary

Magnesium sulphate is an important inorganic chemical raw material, mainly applied in secondary industry, agriculture, food and medicine. So far, there are XXX major effective national standards of magnesium sulphate in China, according to its downstream application areas.

In 2017, China's output of magnesium sulphate exceeded XXX tonnes, XXX of which was consumed domestically and the remaining XXX was for export. For domestic market, most of the magnesium sulphate consumed in China was industrial grade, accounted for XXX of the total. East China ranked the first in the consumption of magnesium sulphate of various specifications in 2017, followed by South China and Central China.

In 2017, the price of magnesium sulphate in China rose slightly as a whole, mainly due to the tightening environmental protection regulations and increasing labor cost.

There are mainly two methods for the preparation of magnesium sulphate in China, namely sulphuric acid reaction method and salt lake brine method. Sulphuric acid reaction method is mostly adopted in the production of magnesium sulphate, as the products obtained through this method are of higher quality, which are widely applied in industrial use, feed and food industries.

Production costs of magnesium sulphate through sulphuric acid reaction method can be broken down into equipment capital, running capital, staff pay, production cost, and waste treatment costs. In 2017, the annual average cost of operating a XXX t/a production magnesium sulphate line ranged from USDXXX to USDXXX varied by product grades.

4. What is in the report?

Note: Key data/information in this sample page is hidden, while in the report it is not.

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1.2 Quality standards of magnesium sulphate

Table 1.2-2 National Chemical Industry Standard on Magnesium Sulphate for Industrial Use (HG/T 2680-2017)

| Item | Index | | | | |
|---|--|------------|-----------|--|-----------|
| | Grade I (MgSO ₄ ·7H ₂ O) | | | Grade II (MgSO ₄ ·H ₂ O) | |
| | Premium | First-rate | Qualified | First-rate | Qualified |
| Magnesium sulphate (MgSO ₄ ·7H ₂ O) w/% ≥ | XXX | XXX | XXX | XXX | XXX |
| Magnesium sulphate (Mg) w/% ≥ | XXX | XXX | XXX | XXX | XXX |
| Chloride (Cl) w/% ≤ | XXX | XXX | XXX | XXX | XXX |
| Iron (Fe) w/% ≤ | XXX | XXX | XXX | XXX | XXX |
| Water insoluble matter w/% ≤ | XXX | XXX | XXX | XXX | XXX |
| Water w/% ≤ | XXX | XXX | XXX | XXX | XXX |

Source: HG/T 2680-2017

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2.2 Consumption of magnesium sulphate

Table 2.2-1 Consumption of magnesium sulphate by product specification in different end-use industries in China, 2017

| Specification | Consumption volume, tonne | | | | | |
|---|---------------------------|-------------|---------------|---------------|-----------------------|-----------------------------|
| | Secondary industry | Agriculture | Feed additive | Food additive | Pharmaceutic adjuvant | Chemical reagent and others |
| Industrial grade I MgSO ₄ ·7H ₂ O (premium, 99.5%) | XXX | XXX | XXX | XXX | XXX | XXX |
| Industrial grade I MgSO ₄ ·7H ₂ O (first-rate, 99.0%) | XXX | XXX | XXX | XXX | XXX | XXX |
| ... | XXX | XXX | XXX | XXX | XXX | XXX |
| Food grade MgSO ₄ ·7H ₂ O (99%) | XXX | XXX | XXX | XXX | XXX | XXX |
| Food grade MgSO ₄ ·n H ₂ O (2 < n < 3) (99%) | XXX | XXX | XXX | XXX | XXX | XXX |
| Pharmaceutical grade MgSO ₄ (99%) | XXX | XXX | XXX | XXX | XXX | XXX |
| Others | XXX | XXX | XXX | XXX | XXX | XXX |
| Total | XXX | XXX | XXX | XXX | XXX | XXX |

Source: CCM

...

2.3 Major end-users of magnesium sulphate by downstream industry

Table 2.3-1 Actual consumption of magnesium sulphate by major end-users in China, 2017

| Company | Industry | Application/target product | Consumption volume, tonne |
|--|----------|----------------------------|---------------------------|
|  http://www.cnchemicals.com/ | | | |

Source: CCM

3 Price of magnesium sulphate in China by grade, 2017

Table 3.1-1 Monthly ex-works price of magnesium sulphate by product grade, 2017, USD/t

| Item | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|------|------|-------|-------|-----|------|------|------|-------|------|------|------|
|  <p style="font-size: 2em; color: green; margin: 0;">CCM</p> <p style="color: green; margin: 0;">http://www.cnchemicals.com/</p> | | | | | | | | | | | | |

Source: CCM

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4 Production method and cost analysis of magnesium sulphate in China

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4.2 Production routes of magnesium sulphate adopting sulphuric acid reaction method by product specification

4.2.1 Industrial grade, agricultural use and feed grade magnesium sulphate heptahydrate

Figure 4.2.1-1 Production route of industrial grade, feed grade and agricultural use magnesium sulphate heptahydrate ($MgSO_4 \cdot 7H_2O$) in China



Source: CCM

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4.3 Cost analysis of magnesium sulphate production

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Table 4.3-4 Industrial grade I MgSO₄·7H₂O (premium, 99.5%) cost breakdown in China, 2017

| Item | Unit price, USD/t | Unit consumption, t/t | Unit cost, USD |
|--|-------------------|-----------------------|----------------|
|  http://www.cnchemicals.com/ | | | |

Note: The cost breakdown in this chart is calculated on the basis of a 30,000 t/a magnesium sulphate production line.

Source: CCM

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4.3.2 Cost analysis of magnesium sulphate production by product specification

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Table 4.3.2-1 Cost analysis of magnesium sulphate production by product specification, 2017, USD/a

| Item | Equipment capital | Running capital | Staff pay | Production cost | Liquid waste treatment | Gaseous waste treatment | Solid waste treatment | Total |
|--|-------------------|-----------------|-----------|-----------------|------------------------|-------------------------|-----------------------|-------|
|  http://www.cnchemicals.com/ | | | | | | | | |

Source: CCM

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If you want more information, please feel free to contact us

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