

Current Situation and Development Trends of China's Diatomite Industry

I. Overview of Diatomite

Diatomite is a siliceous sedimentary rock formed by the deposition of ancient diatom remains, with silicon dioxide ($\text{SiO}_2 \cdot n\text{H}_2\text{O}$) as its main component. It has the following characteristics:

- Porous structure: Internally filled with a large number of ordered micropores, with a porosity of over 90% and a large specific surface area.
- Low density: Lightweight, with a density of approximately 0.4-0.9g/cm³.
- Chemical stability: Acid and alkali resistant, non-toxic and harmless, environmentally friendly.

Main applications:

- Filter aids: Liquid filtration in beer, beverages, pharmaceuticals, edible oils, water treatment and other fields.
- Fillers: Functional additives in plastics, rubber, coatings, building materials and other industries.
- Adsorbents: Sewage treatment, industrial waste gas treatment, oil absorption.
- Thermal insulation materials: Insulation bricks, insulation boards, heat insulation products.
- Agricultural applications: Soil amendments, fertilizer carriers, pesticide carriers.

Among these, filter aids and fillers account for more than 60% of total consumption.

China has formed a diatomite industrial cluster centered on three major bases in Jilin, Zhejiang and Yunnan, with approximately 500 registered enterprises. However, only 8% of them have an annual capacity of over 100,000 tons, and the industry concentration is gradually increasing. The top five enterprises account for 63.8% of the total capacity. The following are the main enterprises ranked by capacity and market influence:

II. Major Global Manufacturers

The global diatomite market presents an oligopolistic competition pattern, with the top five manufacturers controlling over 42% of the market share. Among them, Imerys (France) leads with a market share of approximately 18%.

1. Top Five Global Diatomite Manufacturers

Enterprise Name	Headquarters	Core Advantages	Representative Products/Features
Imerys	Paris, France	The world's largest producer, owning the world's largest diatomite mine (Lompoc, California, USA)	High-quality filter aids for food and beverages, pharmaceuticals, water treatment
EP Minerals	USA	Leading adsorbent technology	Industrial and environmental adsorption solutions, pet litter
Showa Chemical	Japan	Leading in the Asian market	Food-grade and pharmaceutical-grade diatomite products
Kuraray (Calgon Carbon)	Japan	Comprehensive technology of activated carbon and diatomite	Diatomite products dedicated to water treatment
Dicalite Minerals (Dicaperl)	USA	Diversified product lines	Filter-grade and filler-grade diatomite

Other important international enterprises: Domolin (Russia), CECA Chemical (a subsidiary of Arkema, France), Diatomite CJSC (Ukraine), American Diatomite (USA)

III. Major Chinese Manufacturers

China's diatomite reserves are approximately 320 million tons, with proven reserves exceeding 2 billion tons, mainly concentrated in Jilin, Zhejiang and Yunnan provinces, forming three major production bases.

1. First Echelon: Leading Enterprises (Annual capacity over 100,000 tons)

- **Jilin Yuantong Mining Co., Ltd.**
 - Capacity: 300,000 tons/year (ranking first in the industry)
 - Status: Asia's largest diatomite manufacturer, with resource reserves accounting for over 75% of the country's proven resources, owning 20 production lines and 19 subsidiaries.
 - Technology and applications: Independently developed the "gradient calcination and micron-grade classification purification" process, producing high-purity products widely used in high-end fields such as food and beverage filtration, pharmaceutical purification, water treatment and fine chemicals. Its

pharmaceutical-grade filter aids account for over 25% of the domestic market share.

- Headquarters: Diatomite Industrial Park, Linjiang City, Baishan City, Jilin Province
- **Shengzhou Huaili Diatomite Products Co., Ltd. (Zhejiang)**
 - Capacity: 95,000 tons/year, market share of approximately 14.5% (ranking second in the industry)
 - Advantages and applications: Leading enterprise in Zhejiang, with products mainly including building insulation materials (accounting for 50% of capacity) and functional fillers for coatings. It has passed ISO9001 and EU CE certifications, and some insulation products are exported to Southeast Asia.
- **Tengchong Tenglei Diatomite Development Co., Ltd. (Yunnan)**
 - Capacity: 78,000 tons/year, market share of approximately 11.9% (ranking third in the industry)
 - Features and applications: Relying on Tengchong's high-purity diatomite resources (SiO_2 content $\geq 85\%$), its products mainly include low-end filter aids (industrial wastewater filtration), fillers and lightweight wall materials, with significant cost-performance advantages, serving domestic small and medium-sized manufacturing enterprises.
- **Yunnan Tengchong Diatomite Co., Ltd. (Yunnan)**
 - Capacity: 45,000 tons/year, market share of approximately 7% (ranking fourth in the industry)
 - Note: One of the representative enterprises in Yunnan's second-largest production area (annual output of approximately 150,000 tons, accounting for 22% of the country), focusing on agricultural soil amendments and basic adsorption materials.
- **Zhejiang Huate New Materials Co., Ltd. (Zhejiang)**
 - Capacity: Approximately 150,000 tons/year, forming the first echelon of the industry together with Jilin Yuantong and Yunnan Tenglei.
 - Features and applications: Specializing in high-end coating matting agents, rubber and plastic reinforcing fillers, and daily chemical carriers. Its products have high technological content and have entered the supply chain of well-known coating enterprises such as Nippon Paint and Dulux.

2. Second Echelon: Regional Leading Enterprises (Annual capacity 50,000-100,000 tons)

- **Linjiang Dayuan Diatomite Co., Ltd. (Jilin)**
 - Capacity and products: 120,000 tons/year, with product lines covering four major series including beer filtration aids and coating matting agents. It has passed ISO9001 and food-grade safety certifications, serving enterprises such as Tsingtao

Beer and Snow Beer.

- **Linjiang Changbaishan Filter Aid Co., Ltd. (Jilin)**
 - Features and applications: One of China's largest diatomite filter aid manufacturers, with an annual output of approximately 80,000 tons. Its products are mainly used in liquid filtration fields such as beer, beverages and pharmaceuticals, and its pharmaceutical-grade products have passed GMP certification.
- **Hebei Xinxu Mineral Products Co., Ltd.**
 - Positioning and layout: A leader in the entire industrial chain, covering the entire chain from raw ore mining and primary processing to deep processing, with a market share of approximately 5%. It focuses on industrial wastewater treatment adsorbents and feed additive carriers.
- **Baoshan Guiyuan New Materials Co., Ltd. (Yunnan)**
 - Features and capacity: An important enterprise in Yunnan's second-largest production area, forming the Yunnan base together with Tengchong diatomite enterprises. It has an annual output of approximately 60,000 tons, with products mainly including lightweight wall materials and low-end fillers, supplying the building materials market in Southwest China.
- **Qingdao Chuanyi/Chuanshan Diatomite Co., Ltd. (Shandong)**
 - High-end market advantages: A core participant in the high-end market, focusing on pharmaceutical-grade filter aids and chemical catalyst carriers. Its products have entered the supply chain of multinational enterprises such as BASF and Dow Chemical, with a high-end market share of 35%.

3. Third Echelon: Characteristic Enterprises and Emerging Forces

- **Shandong Lvyuan New Materials Co., Ltd.**
 - Characteristic positioning: A pioneer in environmentally friendly diatomite, focusing on special adsorbents for industrial waste gas treatment and municipal sewage treatment materials. It has a market share of approximately 3% and has participated in multiple industrial park environmental governance projects.
- **Zhejiang Kechuang Mining Co., Ltd.**
 - Technological R&D advantages: A technology-driven enterprise specializing in the functional modification of diatomite. It has developed nano-scale diatomite fillers for lithium battery separator coatings, obtained 3 invention patents, and is in the pilot test stage.
- **Henan Antong Environmental Protection Technology Co., Ltd.**
 - High-end focus: Specializing in the R&D and production of high-purity (SiO_2 content $\geq 92\%$) diatomite. Its products are mainly used for high-end pharmaceutical filtration and electronic-grade cleaning agent carriers, serving pharmaceutical enterprises in North China.

- **Jiangsu Jieneng Environmental Protection Materials Co., Ltd.**
 - Market and sales: Focusing on cost-effective industrial adsorption materials, with sales of approximately 32,000 tons in 2024 and a market share of approximately 4.5%. It mainly serves domestic pet product manufacturers (cat litter carriers) and industrial adsorption distributors.

IV. Regional Industrial Pattern

1. Pattern determined by resource endowment: Jilin has more than 75% of the country's high-quality diatomite resources, forming an absolute leading advantage.
2. Obvious differences in product structure:
 - Enterprises in Jilin are dominated by filter aids (accounting for over 60% of their output), with high product quality and strong price premium capacity.
 - Enterprises in Zhejiang are dominated by thermal insulation materials (accounting for over 50% of their output), mainly used in the building energy-saving field.
 - Enterprises in Yunnan are dominated by low-end filter aids, fillers and lightweight wall materials, with fierce price competition.
3. Rising market concentration:
 - The top five enterprises (Jilin Yuantong, Huali, Tinglei, Tengchong Diatomite, Huate New Materials) account for 63.8% of the total capacity.
 - The industry is evolving from "small-scale and fragmented" (over 500 enterprises) to "centralization and specialization". The number of enterprises with an annual capacity of over 100,000 tons has increased to 12, with a total capacity accounting for 58.6% of the country.
4. Differentiation in technical level:
 - First-echelon enterprises have mastered core technologies such as calcination modification and surface treatment, and their products have entered the international high-end market.
 - Most small and medium-sized enterprises are still in the stage of raw ore mining and primary processing, with a deep processing rate of less than 45% (20 percentage points lower than the international average).

Region	Capacity Share	Leading Products	Core Advantages and Representative Enterprises
Jilin Base	Approximately 40%	High-end filter aids, pharmaceutical-grade materials, functional fillers	High-quality ore resources (SiO ₂ content ≥90%), leading technology; Representative enterprises: Jilin Yuantong, Dayuan Diatomite, Changbaishan Filter Aid

Region	Capacity Share	Leading Products	Core Advantages and Representative Enterprises
Zhejiang Base	Approximately 25%	Building insulation materials, high-end coating fillers	Adjacent to the Yangtze River Delta market, advanced processing technology; Representative enterprises: Huali Diatomite, Huate New Materials
Yunnan Base	Approximately 22%	Low-end filter aids, fillers, lightweight wall materials	Abundant resources, low cost; Representative enterprises: Tenglei Diatomite, Tengchong Diatomite, Baoshan Guiyuan
Other Regions	Approximately 13%	Environmental adsorbents, characteristic functional materials	Focus on niche markets; Representative enterprises: Hebei Xinxu, Shandong Lvyuan, Qingdao Chuanyi

V. Current Market Situation (2025)

1. Market size and growth: China's diatomite market size was approximately 8.6 billion yuan in 2024, a year-on-year increase of 7.2%. It is expected to exceed 9.2 billion yuan in 2025, with a growth rate maintaining between 6.5% and 7.5%. The growth momentum mainly comes from the demand for water treatment and waste gas treatment driven by environmental policies, as well as the growth in consumption of high-end products brought about by the upgrading of downstream industries such as pharmaceuticals and high-end coatings.

2. Differentiated price trends:

- High-end products (pharmaceutical-grade filter aids, nano-scale fillers): Due to high technical barriers, prices are stable at 18,000-35,000 yuan/ton, a year-on-year increase of 5%-8%, mainly affected by raw material purification costs and R&D investment.
- Mid-range products (food-grade filter aids, coating fillers): Price range of 8,000-15,000 yuan/ton, with a year-on-year fluctuation of 3%-5%, significantly affected by the seasonal demand of downstream food and beverage, coating industries.
- Low-end products (wall materials, basic fillers): Price range of 3,000-6,000 yuan/ton, prices remain flat year-on-year due to fierce competition, and some small and medium-sized enterprises cut prices by 1%-2% to seize the market.

3. Characteristics of supply-demand pattern:

- Demand side: Filter aids (35%), fillers (28%), and adsorbents (20%) are the main demand areas. Among them, the demand for pharmaceutical-grade filter aids grows the fastest (12% annually), followed by environmental adsorbents (9% annually).
- Supply side: The total industry capacity is approximately 1.6 million tons, with an

actual utilization rate of 78%. Leading enterprises (such as Jilin Yuantong) have a capacity utilization rate of over 90%, while the average utilization rate of small and medium-sized enterprises is less than 60%, resulting in structural surplus.

4. Import and export situation:

- Exports: Export volume was approximately 180,000 tons in 2024, a year-on-year increase of 6%. The main export products are mid-range filter aids and thermal insulation materials, with destinations concentrated in Southeast Asia (45% of exports) and Africa (20%).
- Imports: High-end products rely on imports. Import volume was approximately 70,000 tons in 2024, a year-on-year increase of 4%, mainly including pharmaceutical-grade high-purity diatomite and modified fillers. The main import source countries are France (Imerys) and the United States (EP Minerals), and the import price is 2-3 times that of domestic similar products.

5. Driving factors and challenges:

- Driving factors: The "dual carbon" policy promotes the growth of demand for building insulation materials; the upgrading of GMP certification in the pharmaceutical industry forces the high-endization of filter aids; the upgrading of industrial wastewater treatment standards drives the consumption of adsorbents.
- Main challenges: The backward technology of small and medium-sized enterprises leads to a deep processing rate of less than 45% (20 percentage points lower than the international average); the intensification of vicious competition in the low-end market; the risk of over-exploitation of some high-quality ore resources.

VI. Summary

China's diatomite industry has formed an industrial cluster of "three bases and multiple cores". Jilin Yuantong Mining ranks first in the industry with an annual capacity of 300,000 tons, forming the first echelon together with Huali Diatomite, Tenglei Diatomite, etc. The top five leading enterprises control over 60% of the national market share. From the perspective of market situation, the industry as a whole shows a trend of "high-end growth, mid-range stability, and low-end pressure". Pharmaceutical-grade and environmental protection high-end products are the core growth points in the future. Although China is rich in resource reserves (approximately 320 million tons), 40% of high-end products still rely on imports. The industry needs to improve concentration through the integration of small and medium-sized enterprises and increase investment in modification technology R&D to alleviate the structural supply-demand imbalance.

Note: The above data is as of November 2025. Capacity data is sourced from official enterprise information and industry association statistics. Market situation data refers to the report "Opportunities and Risks Analysis of the Diatomite Industry Under the Background of Carbon Neutrality" and customs import and export statistics.
