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# 硅业制造翘楚

THE MOST OUTSTANDING IN  
THE SILICON MANUFACTURING



## 专注食品级二氧化硅

DEDICATED FOOD-GRADE SILICON DIOXIDE

## 中琦(广东)硅材料股份有限公司

ZHONGQI (GUANGDONG) SILICON MATERIALS CO., LTD.

<https://www.silicaplant.com>



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Nine efficacies & advantages

Typical application and recommended brands of silicon dioxide as food additives.

Adsorbent silicon dioxide

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High-end pet feed silicon dioxide

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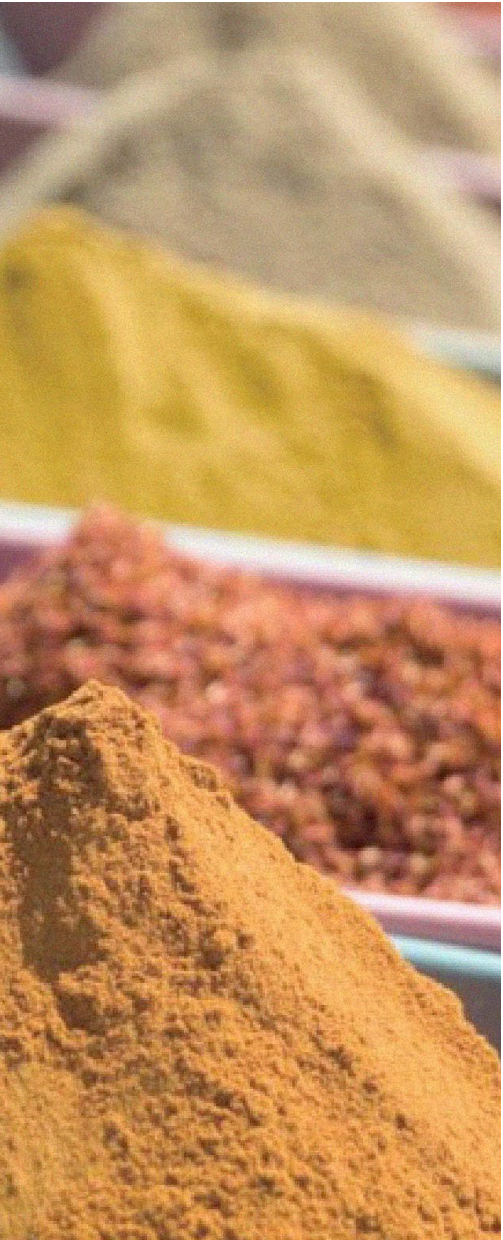
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## GOOD FAITH SERVICES FOREVER

Service networks are distributed nationwide, with 24-hour lines

Integrity of the product parameters





# ZHONGQI, THE LEADER IN FOOD-GRADE SILICA

## 中琦, 食品级二氧化硅的掌舵者

山东中联化学有限公司深耕二氧化硅领域,生产基地设于广东;其母公司中琦(广东)硅材料股份有限公司,系国家级高新技术企业、广东省专精特新企业,更是高端食品级二氧化硅领域的领军者。

中琦秉承“安全、健康品质、细微服务”经营理念,构建覆盖食品、香精香料、保健品、固体饮料、口腔护理、医药、食用油、啤酒、饲料等领域的全维度解决方案矩阵。我们以分子级的匠心,为多家世界500强企业构筑舌尖美味品质的隐形防线。

2021年广东股交所的挂牌钟声,奏响了我们迈向国际的序曲,集团销售公司山东中联化学有限公司全面负责中琦品牌二氧化硅产品海外运营与销售。如今,从本土领先到全球协作,中琦硅业秉持开放的视野,以“中国智造”的精微守护之力,赋能世界食品行业安全体系。

未来,我们仍将以分子级专注,守护每一份安心,以全球化视野,创造更纯粹的品质生活。因为我们坚信:真正的强大,是让看不见的守护,被世界放心看见。

Shandong Zhonglian Chemical Co., Ltd. is deeply engaged in the silica field, with its production base located in Guangdong. Its parent company, Zhongqi (Guangdong) Silicon Materials Co., Ltd., is a national high-tech enterprise and a Guangdong provincial "Specialized, Refined, Characteristic and Innovative" enterprise, and even a leader in the high-end food-grade silica sector.

Adhering to the business philosophy of "safety, healthy quality and meticulous service", Zhongqi has built a full-dimensional solution matrix covering fields such as food, flavors and fragrances, health products, solid beverages, oral care, pharmaceuticals, edible oil, beer, and feed. With the spirit of ingenious craftsmanship, we have built a solid quality barrier for food taste for many Fortune Global 500 companies.

The ringing of the listing bell at Guangdong Equity Exchange in 2021 marked the prelude to our march towards the international market. Shandong Zhonglian Chemical Co., Ltd., the group's sales company, is fully responsible for the overseas operation and sales of silica products under the Zhongqi brand. Today, evolving from a domestic leader to a global collaborator, Zhongqi Silicon Industry adheres to an open vision and, with the meticulous guardianship of "Intelligent Manufacturing in China", empowers the safety system of the global food industry.

In the future, we will continue to maintain molecular-level dedication to safeguard every bit of peace of mind, and with a global perspective, create a purer quality of life. For we firmly believe that true strength lies in making the invisible guardianship visible and trusted by the world.



## SUFFICIENT EXPERIENCE IN APPLICATION AND PROVISION OF OVERALL SOLUTIONS

## 丰富的应用经验，提供整体解决方案

中琦依靠优良品质和细心服务发展壮大，从服务过的成功案例中积累了丰富的二氧化硅食品应用经验，高精端的技术和完善的服务机制使得中琦团队有能力针对不同客户群、不同产品的具体要求给出针对性的服务方案。

Zhongqi develops and expands itself depending on superior quality and considerate services, and has accumulated rich experiences in silicon dioxide food application from successful cases it has served. The high-precision and top technologies and perfect service mechanisms enable the team of Zhongqi to offer purposed service solutions for specific requirements for different customer groups and different products.



### ► 针对未使用过二氧化硅的场景

如果你没有使用过二氧化硅，对如何选择与自己的产品相配合的二氧化硅型号存在疑惑，请选择我们。我们拥有丰富的食品应用经验，有能力针对不同产品(如果粉、调味粉、植脂末等)，给出不同的解决方案。

### ► 针对已使用过二氧化硅的场景

如果你已使用过或正在使用二氧化硅，想寻找更好的方案，请选择我们。我们拥有完备的同行产品资料库，有能力针对不同的同行产品，提供更好的解决方案。

### ► For scenarios where silica has not been used

If you have not used the silicon dioxide before, and have any question about the selection of silicon dioxide models matching your products, please choose us. We boast sufficient experiences in food application and are able to offer different solutions to different products (such as fruit powder, seasoning powder, plant grease powder, etc).

### ► For the existing alternative solutions

If you have used or are using the silicon dioxide, and want to find a better solution, please contact us. We boast perfect database for the products in the same industry, and are able to offer better solutions to different products of the same industry.

ISO 22000:2018/FSSC22000  
FOOD SAFETY SYSTEM FOR  
STANDARDIZED PRODUCTION  
ISO 22000:2018  
食品安全体系规范生产

生产车间按 GMP 标准建设，生产过程严格执行 ISO 22000:2018 食品安全体系各项规定  
除此之外，中琦在数年的经营运行中，不断提高生产工艺，投入巨资引进高端硬件设备以  
监控品质,为保证质量添砖加瓦。

The production workshops are built in accordance with GMP standards, and the production  
process is strictly subject to the requirements set out in the ISO 22000 : 2018 Food Safety System.  
In addition, in years of business operation, Zhongqi has constantly improved production process,  
put huge capital investment in the introduction of top hardware equipment to control quality, which  
adds better elements to quality insurance.

IMPLEMENTING THE GMP AND SYNCHRONIZATION  
WITH INTERNATIONAL STANDARDS  
贯彻GMP，同步世界标准

中琦采用与世界同步的GMP标准建设生产车间，实行全封闭管理，人员进入车间按GMP规  
则运行，物料进出通过雷达感应自动门。

Zhongqi applies the GMP standards keeping pace with the world for the construction of  
production workshops, It carries out a fully closed management, with access of personnel to  
workshops subject to the GMP rules, and entry and exit of materials passing the automatic  
radar sensing gates.



GMP standard warehouse GMP标准仓库



Microbial testing room 微生物检测室

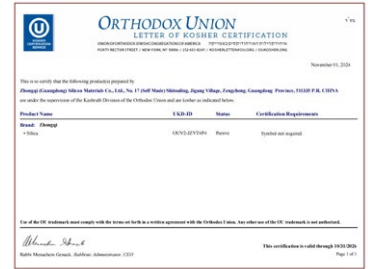
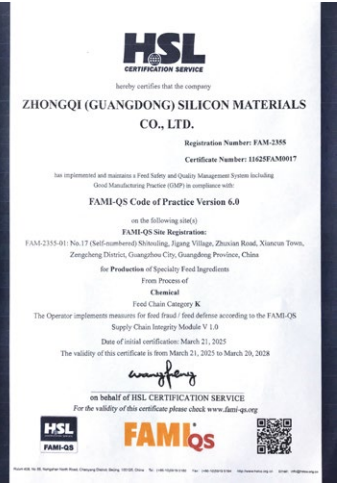


Radar sensor automatic doors  
雷达感应自动门

INTERNATIONAL CERTIFICATION  
AND QUALITY ASSURANCE  
国际认证，品质保证

中琦二氧化硅已获得国家市场监督管理总局颁发的《食品添加剂生产许可证》和国家农业部颁发的  
《饲料添加剂生产许可证》，并通过了 ISO 22000，ISO 9001，HALAL，OU KOSHER，FSSC 22000，  
FAMI-QS，SEDEX，FDA 等各项食品安全管理体系认证。

Zhongqi Silica has obtained the Food Additive Production License and Feed Additive Production License,  
and has passed various food safety management system certifications including ISO 22000, ISO 9001,  
HALAL, OU KOSHER, FSSC 22000, FAMI-QS, SEDEX, and FDA.





# INDEPENDENT RESEARCH AND DEVELOPMENT WITH RECOGNIZED STRENGTH

## 独立研发，实力可鉴

中琦拥有与世界同步的制硅技术，独立的研发应用中心。中琦研发团队由行业高端人才组成，投入先进的实验设备(如“原子荧光光度计”和“激光粒度分析仪”)等世界先进的化验设备，具有强大的研发实力。强大的技术支持使得中琦团队有能力研发不同产品，提供完善的产品应用方案。

Zhongqi boasts silicon production technologies that keep pace with the world, as well as an independent R&D application center. Zhongqi's research and development team consists of top industrial talents, and capital investment in state-of-the-art experimental equipment (such as “atomic fluorescence photometers” and “laser particle size analyzers”) and other internationally advanced chemical analytic equipment, with powerful strength in research and development. The powerful technical support enables the team of Zhongqi to research and develop different products and to provide perfect product application solutions.



# 10K TONS OF OUTPUT TAKES THE LEAD IN THE INDUSTRY

## 万吨产量，领跑行业

中琦硅业现已建成三条生产线，年生产食品、医药级二氧化硅高达6万吨，在福建基地已建成两条万吨级现代化原料生产线，其领先的技术水平和生产量使得中琦成为中国高端食品级二氧化硅行业的佼佼者。

Zhongqi Silicon Industry has built three production lines, with the annual production of food and pharmaceutical-grade silicon dioxide of up to 60,000 tons. At the base in Fujian, it has built two modernized material production lines at the level of 10K tons. The leading technologies and production output enable Zhongqi to be one of the most outstanding manufacturers in the top food-grade silicon dioxide industry in China.





# SILICON DIOXIDE AS FOOD ADDITIVE IS THE SOLUTION TO DIFFICULTIES IN POWDER INGREDIENTS

## 食品添加剂二氧化硅 攻克粉体配料困境

时下，方便快速的食物越来越受欢迎，粉体配料凭借其快捷的速溶性而被经常应用在食品的配方中。由于大部分粉体颗粒细、易粘结，且粉体颗粒的流动性较差，储存时易结块，操作和正确加料都很困难，特别是对于容易受潮的物料，如水果粉、蔬菜粉、香精香料和辣椒粉等。

食品添加剂二氧化硅的出现解决了这一问题，二氧化硅是一种新兴的绿色、安全和健康的食品添加剂，具有卓越的生理惰性、化学稳定性、高流动性、高吸附性，且不在体内聚集，这一特性使得二氧化硅成为食品添加剂的新兴之星。



Currently,instant foods become more and more popular.Powder ingredients are often used in the formula of foods for their instant solubility.As most of powder particles are fine,easy bonding,poor fluidity of powder particles and easy agglomeration during storage,operation and proper dosing becomes very difficult,especially for easily dampened materials such as fruit powder,vegetable powder,flavors and spices and hot pepper powder,etc.

The existence of silicon dioxide as food additive solves this problem.Silicon dioxide is a kind of green,safe and healthy emerging food additive,with outstanding physiological inertness,chemical stability,high fluidity,and high absorption,and will not be aggregated within body.Such a property enables silicon dioxide to be an emerging star of food additives.



# SILICON DIOXIDE AS A FOOD ADDITIVE IS THE SOLUTION TO AGGLOMERATION

## 食品添加剂二氧化硅 解决结块问题

作为原料的生产商，你要运输你的产品到世界各地，在不同的气候条件下储存它们。运输和储存时的温度和湿度的变化会导致产品的结块，这样你的客户在加工它们的时候就变得困难。

中琦二氧化硅的添加可以有效地避免粉体结块，让你的产品无论在世界任何地方，质量始终稳定。



辣椒粉加二氧化硅前后流动性对比  
Mobility contrast of paprika powder between before and after adding silica

As a manufacturer of the material, you will have to deliver your products to different parts of the world, and store them under different weather conditions. Changes in temperature and humidity during transportation and storage will result in the agglomeration of the products.so it is difficult for your customer to have them processed.The addition to Zhongqi silicon dioxide can effectively avoid the agglomeration of powder so that the quality of your products will always be steady at any place around the world.

## SILICON DIOXIDE AS FOOD ADDITIVE MAKES POWDER EASIER AND DOSING MORE ACCURATE

### 食品添加剂二氧化硅使粉体 更容易和精确的加料



当粉体原料如辣椒粉、水果粉或者食盐在生产过程中通常用自动加料系统。控制食品原料的质量，稳定和精确的添加量是非常关键的。粉体的流动性不好会导致加料波动，最终的产品质量就不会令人满意。作为粉体原料的生产商，你可以帮助你的客户把加料变得容易。中琦二氧化硅能改善你的产品的流动性。二氧化硅作为流动助剂包裹在粉体原料的表面，隔开它们的颗粒。另一个优势是它们的高吸收能力，这个特性可以吸收颗粒表面的水分或油脂，大大降低颗粒的粘结。

Generally, the automatic dosing system is used in the production process for powder materials such as hot pepper powder, fruit powder or edible salt. The control over quality of food material and steady and accurate additives are very crucial. Poor fluidity of powder will result in fluctuation in dosing, and final product quality will not be so satisfactory. As a manufacturer of powder materials, you can help your customers make dosing easier. Zhongqi silicon dioxide can improve the fluidity of your products. Silicon dioxide, as a flow agent, is wrapped on surfaces of powder materials to isolate their particles. The other advantage lies in its high absorptive capacity, and such a property can help absorb moisture or grease on particle surfaces, and greatly reduce the agglomeration of particles.

## SPRAY DRYING EFFECT OF SILICON DIOXIDE AS FOOD ADDITIVE

### 食品添加剂二氧化硅之 喷雾干燥作用



很多食品原料是用喷雾干燥加工的。如蔬菜粉、蔬菜提取物、乳清粉、蛋粉、或植脂末。在生产过程中，喷雾干燥的内壁会发生结块问题，这需要经常清理。如果在喷雾塔里，和浆料分开加入中琦二氧化硅就会减少结块问题，缩短停工的次数。而且，二氧化硅直接加入喷雾塔，可以省去后面混合的步骤，提高产量。这是应用二氧化硅作为流动助剂和抗结块剂最有效率的方法。



Many food materials are processed by spray drying such as vegetable powder, vegetable extracts, whey powder, egg powder or plant grease powder. In the production process, the interior walls of spray drying equipment will develop agglomeration, which needs constant clearance. If it is the spray tower, adding Zhongqi's silicon dioxide separately from the slurry will reduce agglomeration and shorten the number of times of stoppage of work. Moreover, direct addition of silicon dioxide to the spray tower can save the subsequent steps of mixing to increase the yield. This is the most effective way of the application of silicon dioxide as the flow agents and anti-caking agents.

NINE EFFICACIES & ADVANTAGES  
九大功效&优势



TYPICAL APPLICATION AND  
RECOMMENDED BRANDS OF SILICON  
DIOXIDE AS FOOD ADDITIVES.

食品添加剂二氧化硅的  
典型应用和推荐牌号



| 二氧化硅型号 Model of silicon dioxide           |           |           |           |            |            |            |             |            |              |             |           |
|-------------------------------------------|-----------|-----------|-----------|------------|------------|------------|-------------|------------|--------------|-------------|-----------|
| 应用 Application                            | ZLSIL-W17 | ZLSIL-W18 | ZLSIL-T38 | ZLSIL-W50S | ZLSIL-W58A | ZLSIL-W58B | ZLSIL-W58BF | ZLSIL-W22S | ZLSIL-W244FP | ZLSIL-W63FP | ZLSIL-R92 |
| 植脂末 Vegetable fat powder                  |           |           |           |            | **         | *          |             | **         |              | **          |           |
| 果糖 Fruit sugar                            |           |           |           |            | *          |            |             |            | **           |             |           |
| 乳化剂 Emulsifier                            |           | *         |           |            |            |            |             |            |              |             |           |
| 香精香料 Flavors and spices                   |           | *         | **        | *          | **         |            | **          | **         |              |             |           |
| 水果粉 Fruit powder                          |           |           |           |            | *          | **         |             |            |              |             |           |
| 大蒜粉 Garlic powder                         |           |           |           | *          | *          | **         |             |            |              |             |           |
| 速溶饮料 Instant beverage                     |           |           |           |            | *          |            |             | **         |              |             |           |
| 速溶汤粉 Soluble soup powder                  |           |           |           | *          | *          |            |             |            |              |             |           |
| 洋葱粉 Onion powder                          |           |           |           | *          | *          |            |             |            |              |             |           |
| 辣椒粉 Hot pepper powder                     |           |           |           | *          |            | **         |             |            |              |             |           |
| 蛋白粉 Protein powder                        |           |           |           |            | **         |            |             | **         |              |             |           |
| 调味粉 Seasoning powder                      |           |           | **        | *          |            | **         |             |            |              |             |           |
| 食盐 Edible salt                            |           |           |           |            | *          |            |             |            |              |             |           |
| 番茄粉 Tomato powder                         | **        | *         |           |            | *          |            |             | *          |              |             |           |
| 蔬菜粉 Vegetable powder                      |           |           |           |            | *          | *          |             |            |              |             |           |
| 奶粉 Milk powder                            |           |           |           |            | *          | **         |             |            |              | **          |           |
| 动植物油 /啤酒 Animal and vegetable oils / Beer | **        |           |           |            |            |            |             |            |              |             | **        |
| 医药 Pharmaceutical Industry                |           |           |           |            |            |            |             |            | **           | **          |           |

## ADSORBENT SILICON DIOXIDE 吸附剂二氧化硅



食品级二氧化硅应用到动植物油、果汁、啤酒领域也被称为吸附剂、脱磷剂，能有效吸附食用油中的磷脂、皂和微量金属元素，提高油品稳定性，与活性白土、硅藻土复配使用，可降低毛油的损耗，改善油品质量，延长油品的储存期限，同时又能很好的保留产品原有的风味。

Food-grade silica, also known as adsorbent or dephosphorization agent when applied in the animal and vegetable oil, fruit juice, and beer industries, can effectively adsorb phospholipids, soaps, and trace metal elements in edible oils to enhance oil stability. When used in combination with activated clay and diatomaceous earth, it can reduce the loss of crude oil, improve oil quality, extend oil storage life, while well preserving the original flavor of the product.



## TOOTHPASTE GRADE SILICA 牙膏级二氧化硅



中琦研发中心针对口腔护理需要开发一系列牙膏级二氧化硅产品，产品有磨擦型、增稠型、综合型满足不同牙膏配方需要。

Zhongqi R&D Center develops a series of toothpaste grade silica products targeted at requirements of Oral care, which have friction type, thickening type, integrated type to meet the different needs of toothpaste formula.

## COSMETIC-GRADE SILICON DIOXIDE 化妆品用二氧化硅

化妆品中二氧化硅功能丰富：磨砂二氧化硅颗粒圆润温和，是面部/身体磨砂优选，去角质更环保；足粉中二氧化硅可吸湿抗菌，让足部干爽；球形二氧化硅凭丝滑触感与柔焦效果，赋能底妆轻薄遮瑕、口红持色，还能优化防晒剂分散；全方位为美妆护理产品赋能，提升使用体验。

Silica in cosmetics boasts versatile functions: Abrasive silica, with smooth and gentle particles, is an ideal choice for facial/body scrubs, enabling eco-friendly exfoliation. Silica in foot powder absorbs moisture and aids in antibacterial protection, keeping feet dry. Spherical silica, with its silky texture and soft-focus effect, enhances light coverage for base makeup and long-lasting color for lipsticks, while also improving the dispersion of sunscreens. It comprehensively empowers beauty and skincare products, enhancing the user experience.



## HIGH-END PET FEED SILICON DIOXIDE 高端宠物饲料二氧化硅

在高端宠物饲料领域，二氧化硅凭借分子级吸附、优异热稳定性及精准控流特性，已成为功能性配方的核心技术支撑，广泛应用于冻干主粮与功能性零食、益生菌与酶制剂预混料、矿物质与维生素载体及口腔护理与功能型日粮。其多孔结构可稳定吸附维生素、酶制剂，还能吸附病原菌毒素以降低腹泻风险、调节肠道pH值、促进营养吸收；同时，硅元素可推动胶原蛋白合成，协同钙镁强化宠物骨骼与被毛健康。

In the field of high-end pet feed, silica has become a core technical support for functional formulas, thanks to its molecular-level adsorption, excellent thermal stability, and precise flow control properties. It is widely used in freeze-dried staple foods, functional snacks, probiotic and enzyme premixes, mineral and vitamin carriers, as well as oral care and functional daily diets.

Its porous structure can stably adsorb vitamins and enzymes; it also adsorbs pathogenic bacteria and toxins to reduce the risk of diarrhea, regulate intestinal pH value, and promote nutrient absorption. Meanwhile, silicon promotes collagen synthesis and works synergistically with calcium and magnesium to enhance the bone health and coat condition of pets.



## PHARMACEUTICAL-GRADE SILICON DIOXIDE 医药级二氧化硅



中琦研发中心针对医药需要开发一系列医药级二氧化硅产品，它们广泛用于原料药、中药粉剂、复合维生素、泡腾片等的制作，起到的作用为抗结剂、流动剂、崩解剂、分散剂等。

Zhongqi R&D Center develops a series of pharmaceutical-grade silica products targeted at medical needs. They are widely used in the production of raw material medicine, traditional Chinese medicine powder agent, compound vitamin, effervescent tablets and play the role as anti-caking agent, flow agent, disintegrating agent, dispersing agent etc.

中琦秉承“安全健康、细微服务”的经营理念，在全球布局服务网络，以满足客户需求、缩短交货周期。为进一步拓展国际市场，旗下销售子公司山东中联化学有限公司，全面负责中琦品牌二氧化硅的海外市场运营与销售业务。

Adhering to the business philosophy of "Safety, Health and Meticulous Service", Zhongqi has established a global service network to meet customer needs and shorten delivery cycles. To further expand the international market, Shandong Zhonglian Chemical Co., Ltd., its sales subsidiary, is fully responsible for the overseas market operation and sales of Zhongqi-branded silica.





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