



Nanjing Chemical Material Corp.

Expandable Microspheres

Features of Expandable Microspheres

- Product Name: Expandable microspheres
- Chemical Formula: N/A
- CAS No.: N/A
- Dangerous Grade: 9

Technical Data of Expandable Microspheres

Thermoplastic	Shoes
Thermoset	Artificial marbles
Synthetic rubber	Rubber gloves, Silicon rubber
Natural fiber	Printing ink ,Paper, wine stopper
Chemical fiber	Artificial leather, Non-wovens, Paper diaper, Sanitary towel
Coating	Wallpaper, Leather repair, Putty for car repair
Adhesive	Sealant, Removable glue
Composit	Emulsion explosives, Cables and lithium batteries



Package and Storage:

- 50kg/barrel or 200kg/bag
- Store in a cool, dry place. Keep container closed when not in use

Application /Application Industries:

Expandable microspheres are white microscopic spheres (average particle size is 10~30 μm and average density is approximately 1100 kg/m³) that comprise a thermoplastic shell encapsulating a low boiling point liquid hydrocarbon. When heated to a temperature high enough to soften the shell, the increasing pressure of the hydrocarbon will cause the microsphere to expand by 40 to 100 times. The microsphere ceases to expand when its inner pressure, shell tension and external pressure reach a balance. Its density after expansion can be lower than 30 kg/m³ (0.03 g/cm³), making it the most lightweight application material in the world.

Expandable Microsphere Characteristics

Cost-saving: Expandable microspheres can be added to thermoplastic materials (such as PR, PP, PVC, PET, TPR, TPU, TPV, PA, and paper/board) as lightweight fillers and blowing agents. 1kg of expandable microspheres can replace 30kg of PVC or 25-30kg of paper fibers, drastically reducing product density to reduce volume and lower transportation cost. Applications: shoe soles, wood-plastic composites, auto parts, paper and board, nonwovens, coating, etc.



Low density: Since expandable microspheres can achieve a sharp reduction in density when heated, we can lower material density by 10% only by adding 3% of expanded microspheres and can reduce density by 10%-10% by adding 1% of unexpanded microspheres. Lowering product density without increasing its volume and thickness can help reduce energy consumption for cars and make lighter and more comfortable shoe soles. Applications: shoe soles, wood-plastic composites, auto parts, nonwovens, ultra-light clay, etc.

Surface modification: Small particle sizes such as $5\mu\text{m}$ can make a smooth surface, and large particle-sized microspheres can create relatively rough surface. Therefore, different particle sizes achieve different surface effects such as 3D and special cashmere surface, making the surface smooth, soft, and anti-skid. Applications: printing inks, leather coating, paper and board, etc.

Insulation: Microspheres are homogeneous closed-cell structure, so they have good insulation, sound proof, electrical insulation and low water permeability.

Applications: wine corks, auto parts, crack fillers, silicone rubber, emulsion explosives, cables, etc.

Elasticity: Expandable microspheres are thermoplastic core-shell microscopic spheres that are very resilient. They can be compressed with a certain pressure and resume their original volume when the pressure is withdrawn. Applications: wine corks, auto interiors, silicone rubber, leather coating, cables, etc.



Nanjing Chemical Material Corporation. (NCMC), is a professional chemical distributor company which is set up through the restructuring of state-owned Nanjing Chemical Raw Material Head Company. It was founded in 1995 at first and restructured in 2007. The company is headquartered in Nanjing, with 2 offices in Guangzhou and Tianjin. NCMC has established close cooperative relations with BASF, EASTMAN, AkzoNobel, Chevron Phillips, Cabot, Lonza, SABIC, Honeywell, Evonic, Oleon, Showa Denko, Idemitsu, UBE, etc. Based on its own R&D center and production base, NCMC is also engaged in research, manufacturing, storage and logistics, for an integrated service and customized solutions to our suppliers and customers.

NCMC Expandable Microspheres manufacturer support various industries with superior quality products, including lubricants and metal-processing, personal care, C.A.S.E, pharmaceutical and pesticide, oil and water treatment, flavors and fragrances, organic & inorganic chemicals, ect.

The mission in NCMC is to be a bridge connecting dreams between China market and our partner in other countries, on the principle of equality, mutual benefit and win-win cooperation.