

The central part of the image features a circular collage of various applications for hollow glass microspheres. The collage includes bowling pins and a red ball, orange buoys in blue water, a close-up of a glass sphere being formed, a worker in a yellow safety suit and respirator using a spray gun, and an offshore oil rig. Overlaid on this collage is a white circle containing the 'Microlite' logo (with a small bird icon above the 'i') and the text 'HOLLOW GLASS MICROSPHERES' in white, bold, sans-serif capital letters.

Microlite
HOLLOW GLASS
MICROSPHERES

INNOVATING THE FUTURE OF
**LIGHTWEIGHT
MATERIALS**

www.petrachem.in

About Us



Pioneering the Future of Lightweight Innovation

At Petra Industries, we believe in engineering materials that make the world stronger, lighter, and more sustainable. As one of India's leading suppliers of advanced hollow glass microspheres, Petra combines global expertise with indigenous innovation to deliver materials that redefine performance and efficiency.

With decades of experience in high-performance filler technology, Petra has built a legacy of precision, reliability & quality. Our products are trusted by industries across construction, automotive, marine, aerospace, coatings & energy for their consistency & transformative impact.

Petra's state-of-the-art manufacturing facilities across India and international technological collaboration ensure controlled production, consistent particle uniformity, and strict quality assurance - empowering clients to innovate with confidence.

Through continuous R&D, Petra developed its specialized product line - Microlite™ Hollow Glass Microspheres - a symbol of excellence in lightweight engineering.

Each sphere represents Petra's core philosophy: maximum strength with minimum weight, designed to elevate material performance, reduce resource consumption, and support sustainability goals. From concept to creation, Petra drives innovation that floats, insulates, protects, and strengthens - fueling industries that shape the future.

About Microlite Hollow Glass Microspheres - The Power of Strength in Lightness

Petra Microlite™ Hollow Glass Microspheres are precision-engineered, ultra-lightweight fillers crafted from soda-lime borosilicate glass. These microspheres feature a perfectly spherical, thin-walled hollow structure that provides an exceptional strength-to-weight ratio, making them the ideal solution for a wide range of high-performance applications.

Smart Material, Limitless Possibilities

Microlite™ offers a breakthrough in lightweight filler technology. By replacing traditional, irregular fillers, Microlite™ significantly reduces resin demand, enhances flow, and improves moldability - enabling manufacturers to produce lighter, stronger, and more cost-efficient components.

Their spherical geometry ensures uniform stress distribution, dimensional stability & reduced shrinkage - making them invaluable in plastics, composites, paints, coatings, sealants, adhesives, and syntactic foams.

Engineered for Performance

- ✓ **High Strength, Low Density**
Enables weight reduction of up to 15–20% without loss of mechanical integrity.
- ✓ **Moisture & Chemical Resistance**
Borosilicate composition ensures durability in extreme environments.
- ✓ **Eco-Consious & Recyclable**
Chemically inert and reprocessable, supporting sustainable manufacturing.
- ✓ **Thermal & Acoustic Benefits**
Low thermal conductivity and noise-dampening properties for comfort & energy efficiency.
- ✓ **Easy Processing**
Spherical shape enhances flow and reduces tool wear, leading to faster production & lower energy use.

Applications That Redefine Possibility

From solar-reflective paints and marine buoyancy systems to lightweight automotive components and thermal insulation coatings, Petra Microlite™ drives performance where every gram counts. Trusted by global innovators, Microlite Hollow Glass Microspheres are more than fillers - they are enablers of next-generation material design, providing strength, stability, and efficiency for the industries that move the world forward.

Diverse Applications Across Industries Petra Microlite

Rubber & Plastic

- ✓ Injection-molded parts and extruded shapes
- ✓ SMC and BMC materials for structural use
- ✓ Wood-polymer composites and cladding
- ✓ Transport applications in auto, aero & marine sectors
- ✓ Components for electronics and household appliances
- ✓ Decorative molded furniture elements
- ✓ Flexible and durable packaging materials
- ✓ Equipment and gear for sports and recreation



Construction Materials

- ✓ Sealants & joints
- ✓ Spray/lay-up systems
- ✓ Coatings & paints
- ✓ Cultured marble
- ✓ Wall repair fillers
- ✓ Potting compounds
- ✓ Mastics & adhesives
- ✓ Precast concrete
- ✓ Putties & pastes



Paints and Coatings

- ✓ Thermal barrier coatings
- ✓ Solar reflective paints
- ✓ Lightweight primers
- ✓ Anti-corrosive coating
- ✓ Marine and industrial coatings
- ✓ Fire-retardant paints



Mining, Oil & Gas

- ✓ Eight syntactic foams
- ✓ Insulation for deepwater pipelines and flowlines
- ✓ Low-density drilling muds and fluids
- ✓ Enhanced emulsion-based explosives
- ✓ Buoyancy aids for risers and subsea structures
- ✓ Reduced-weight cement slurries for well integrity

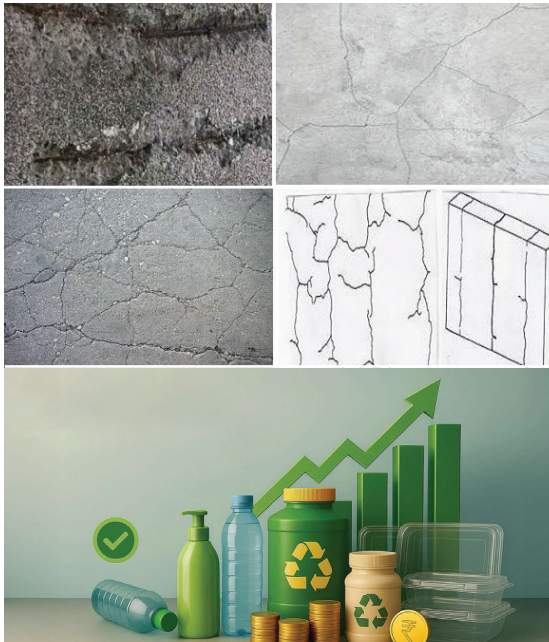
Why Spherical Design Matters

Small spheres. Massive results. Inspired by nature's most efficient shape, Petra™ Microlite are free-flowing powders made from thin-walled, hollow glass microspheres. Their high strength-to-weight ratio allows them to withstand rigorous processing while offering significant weight reduction. Crafted from soda-lime borosilicate glass, they are chemically inert, water-resistant, and feature smooth, nonporous surfaces-providing a clear edge over irregular fillers and additives.

Reduced resin demand The sphere offers the least surface area per volume of any shape. That allows Petra Microlite to help reduce resin demand in a variety of applications - for lower raw material costs. "r" Enhanced Flow & Moldability r Efficient Volume Utilization & Resin Savings r More Performance Per Gram Whether improving productivity, solving complex engineering challenges, or opening doors to new design possibilities, Petra™ Microlite are trusted by industries around the globe to fuel what's next. Petra™ Microlite empowers lighter, stronger, and cleaner innovations-from deep seas to outer space.

The spherical design of Petra™ Microlite offers several inherent benefits compared to irregularly shaped mineral fillers or glass fibers.

Advantages in Real-World Uses



✓ Lighter Parts, Same Strength Petra

Petra Microlite are widely utilized to reduce weight in a variety of materials, including plastics, thermosets, structural foams, elastomers, and both sheet- and bulk-molded composites. Few grades of Petra™ Microlite can deliver weight reductions of 15% or more in many polypropylene blends, and over 18% in glass fiber-reinforced polyamide systems - all without requiring significant changes to materials or manufacturing processes. Importantly, these reductions come with no compromise in mechanical performance.

✓ Consistent Shape, Reduced Shrinkage

Lighter components not only appeal to end users but also enhance sustainability by contributing to better fuel efficiency. Petra™ Microlite help reduce shrinkage and warpage in plastics, wood composites, spackling materials, and more-leading to fewer defects and less rework. Their support for high filler loading improves stiffness and dimensional accuracy while promoting even polymer cooling. This helps prevent sink marks and ensures uniform solidification. Furthermore, their spherical geometry enables more even stress distribution, reducing warpage in high aspect ratio filler systems.

✓ Faster Production, Lower Energy

In processes like injection molding and extrusion, Petra™ Microlite replace heavier materials, minimizing the thermal mass that needs to be heated and cooled. This leads to faster cooling times for filled resins, allowing manufacturers to produce more parts per hour while still achieving weight reduction targets. In real-world production environments, cooling time improvements of up to 15–25% have been observed.

✓ Eco-Friendly, Recyclable, and Resource-Efficient

While the benefits of lightweighting are especially evident in transportation-where fuel efficiency & emissions reduction are critical-many other industries also gain a competitive edge through lower shipping costs enabled by lighter components. Petra™ Microlite further support sustainability by contributing to the recyclability of plastic materials. In fact, many plastics containing Microlite can be reprocessed & re-ground up to five times with minimal degradation in performance. Because Petra™ Microlite are composed of chemically inert soda-lime borosilicate glass, they present minimal environmental impact & pose virtually no challenges during disposal.

Engineered for Next-Level Performance

✓ Low Thermal Conductivity for Critical Applications

Petra™ Microlite lowers thermal conductivity in resins, ideal for insulating foams in deep-sea and heat-sensitive automotive interiors.

✓ Superior Moisture Resistance for Long-Term Durability

Made from soda-lime borosilicate, Petra™ Microlite resists water & retains strength even after extended boiling.

✓ High Buoyancy for Marine & Offshore Solutions

Its high strength and low density make Petra™ Microlite ideal for buoyancy modules, drill riser supports, ROVs & floating products like fishing boots.

✓ Easy to Cut, Shape & Sand

These microspheres improve machining, delivering smoother cuts, cleaner edges, and easier sanding with less tool wear.

✓ Brighter Surfaces with Light-Scattering Properties

Petra™ Microlites spherical shape scatters light, making it ideal for solar films, paints & reflective coatings.

✓ Ideal for Low-Dielectric Electrical Applications

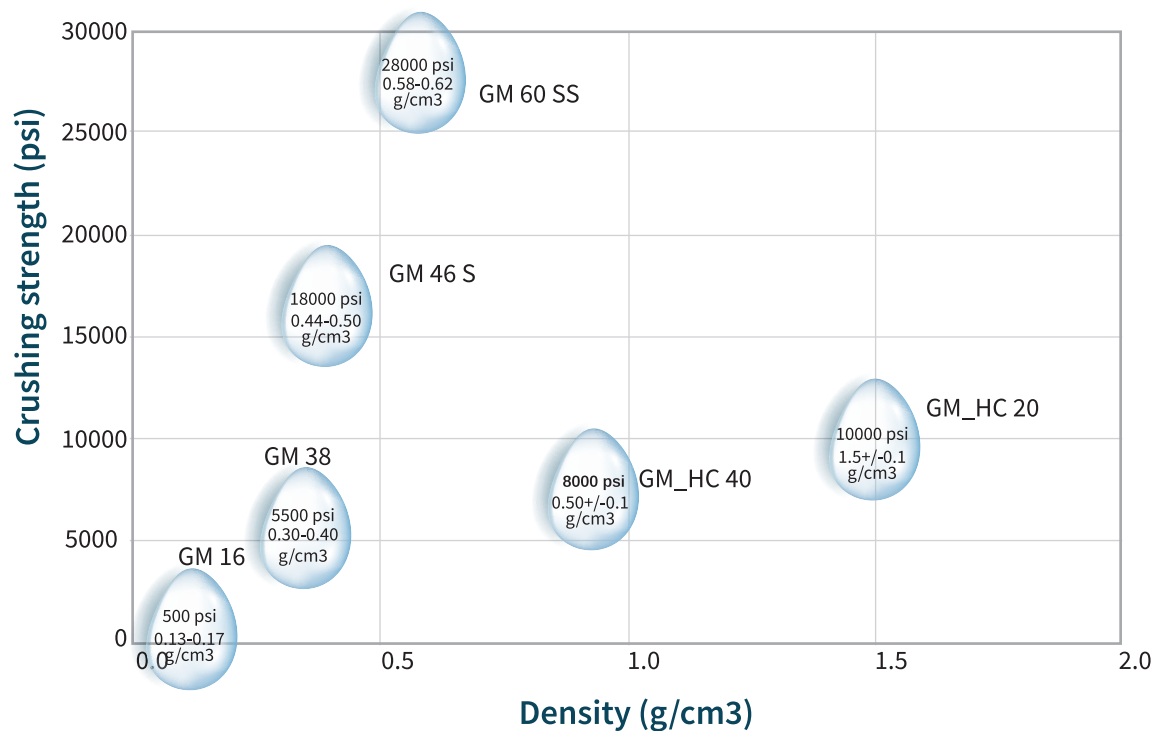
The hollow structure of Petra™ Microlite results in a low dielectric constant, making them ideal for creating lightweight materials with specific electrical characteristics. Typical applications include printed circuit boards, radomes, and packaging materials.

✓ Better Film Separation & Lower Permeability

As antiblocking agents, Petra™ Microlite prevents film sticking and reduces permeability due to its inert glass composition

Tailored Properties to Match Your Application

Petra Microlite are available in a wide range of grades with varying densities, crush strengths and particle diameters. Here are some general guidelines to get you started:



Choosing the Right Grade for Your Needs

LOW DENSITY GRADES

Type	True Density (g/cm3)	Bulk Density (mpa/psi)	Compressive Strength (mpa/psi)	D50 (Microns)	D90 (Microns)
GM 16	0.13-0.17	0.08-0.09	4/500	85	120
GM 20	0.18-0.22	0.10-0.12	4/500	65	110
GM 25	0.23-0.27	0.13-0.15	5/750	65	100
GM 32	0.30-0.34	0.17-0.19	14/2000	45	80
GM 35	0.33-0.37	0.19-0.21	21/3000	40	70
GM 38	0.36-0.40	0.21-0.22	38/5500	40	65
GM 40	0.38-0.42	0.19-0.23	28/4000	40	70

LOW DENSITY GRADES

Type	True Density (g/cm3)	Bulk Density (mpa/psi)	Compressive Strength (mpa/psi)	D50 (Microns)	D90 (Microns)
GM 42	0.40-0.44	0.21-0.24	55/8000	40	70
GM 46	0.44-0.48	0.23-0.26	41/6000	40	70
GM 50	0.48-0.52	0.25-0.27	55/8000	40	60
GM 60	0.58-0.62	0.29-0.34	83/12000	40	65
GM 60 S	0.58-0.63	0.30-0.34	124/18000	35	55

LOW DENSITY HIGH COMPRESSIVE STRENGTH GRADES

Type	True Density (g/cm3)	Bulk Density (mpa/psi)	Compressive Strength (mpa/psi)	D50 (Microns)	D90 (Microns)
GM 20 S	0.18-0.22	0.10-0.12	7/1000	60	90
GM 22 S	0.20-0.24	0.11-0.13	8/1200	45	70
GM 28 S	0.27-0.30	0.15-0.17	28/4000	45	65
GM 38 S	0.36-0.40	0.19-0.22	38/5500	30	50
GM 42 S	0.40-0.44	0.21-0.24	55/8000	25	40
GM 46 S	0.44-0.50	0.22-0.25	110/16000	20	30
GM 60 SS	0.58-0.62	0.29-0.33	193/28000	16	25
GM 65 S	0.63-0.67	0.30-0.33	207/30000	13	20
GM 70 S	0.75-0.80	0.33-0.35	207/30000	10	15

SMALL PARTICLE SIZE, HIGH COMPRESSIVE STRENGTH GRADES

Type	True Density (g/cm3)	Compressive Strength (mpa/psi)	D90 (Microns)
GM_HC 10	2.1+/-0.1	10000 psi	10+/-2
GM_HC 15	1.85+/-0.1	10000 psi	15+/-2
GM_HC 20	1.5+/-0.1	10000 psi	10+/-2
GM_HC 30	1.0+/-0.1	10000 psi	30+/-3
GM_HC 40	0.95+/-0.1	8000 psi	40+/-3
GM_HC 50	0.55+/-0.3	6000 psi	50+/-3

GM MC SOLID MICROSPHERES

Type	True Density (g/cm3)	D50 (Microns)	D90 (Microns)
GM-MC80	2.55 ± 0.15 g/cm3	35 ± 5 µm	80 ± 5 µm
GM-MC50	2.55 ± 0.15 g/cm3	30 ± 5 µm	50 ± 5 µm
GM-MC30	2.55 ± 0.15 g/cm3	16 ± 3 µm	30 ± 3 µm
GM-MC20	2.55 ± 0.15 g/cm3	12 ± 3 µm	20 ± 3 µm
GM-MC15	2.55 ± 0.15 g/cm3	8 ± 2 µm	15 ± 2 µm
GM-MC9808	2.55 ± 0.15 g/cm3	2.5 ± 1 µm	D98≤9



FILLER TECHNOLOGY THAT REDEFINES LIGHTWEIGHT STRENGTH

VISIT US AT

 **+91-70690 02172**

 **sales@petraindiagroup.com**

 www.petraindiagroup.com | www.indiacenosphere.com | www.petrachem.in

Get in Touch

Corporate Office

BLOCK NO 396, OFFICE NO 1107 & 1108, THE ONE WORLD WEST, S.P RING ROAD,
GHATLODIA, NEAR VAKIL BRIDGE, AMBLI, AHMEDABAD, GUJARAT, 380058.

Registered office

PLOT NO. 2211/B2, FLAT NO.103, STERLING CORNER COMPLEX, SANSKAR MANDAL,
BHAVNAGAR, GUJARAT, 364002.

Manufacturing Plant

SURVEY NO. 63 PAIKI, GOKULNAGAR, AIRPORT ROAD,
ROOWA, BHAVNAGAR, GUJARAT, 364001.

Manufacturing Plant

BLOCK SURVEY NO. 271, PLOT NO 25/26, MADHAV INDUSTRIAL HUB,
BAREJA, KENERA, KHEDA , GUJARAT, 387540.

Warehouse Plant

SURVEY NO. 37/2, PLOT NO. 1 & 2, GODOWN NO.07,
NANA KAPAYA, MUNDRA, KUCHCHH, GUJARAT, 370405.

Warehouse Plant

HOUSE NO. 1448, KH NO. 255, 214, KHADGAIN RD,
WADI, NAGPUR, MAHARASHTRA, 4420023.