

MICA

Uses and Applications

QUALITY MINERAL PRODUCTS ENRICHING OUR DAILY LIFE

Plastics	Advantages	Applications
Thermosets		
Unsaturated Polyester	Improves modulus Reduces warp and shrink	Marine, Automotive, Bath and Shower
Phenolic	Electric properties Dimensional stability, HDT	Appliances, Automotive
Epoxy	Chemical & barrier resistance	Tank lings, coatings
SMC & BMC	Improves modulus, warp and shrink properties	Automotive, farm and recreational equipment
Thermoplastic		
PP, HDPE, Nylon, PBT, & others	Improved HDT, flexure modulus dielectric properties	Automotive, appliances, recreational products
RIM Polyurethane	Higher modulus, lower thermal expansion, warpage	Automotive, fenders, bumper facias, etc.
Foamed PP, HDPE, PS	Good nucleation, increases low temperature impact	Packaging, automotive
Mica/glass/woodfiber/talc plastic combinations	Dimensional stability, lower cost, higher HDT and modulus, lower warpage and shrinkage	Furniture, sports equipment, automotive and recreational equipment
Mica acoustical plastics	Improve acoustic properties, HDT, modulus, lower warpage and shrinkage	Automotive, farm & lawn equipment, motor housing

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The collage displays various forms of mica: fine white powder, golden-brown powder, mica flakes, mica sheets, and mica in industrial machinery. It also includes a table of U.S. imports for mica powder and waste in 2007, and two MSDS reports from PONY and SGS.

Country	Powder		Waste	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Australia	402	\$279	—	—
Canada	12,500	5,410	41	\$78
China	12,200	1,050	—	—
Finland	19	21	—	—
France	32	56	—	—
Germany	370	346	—	—
India	250	218	806	413
Italy	4	5	—	—
Japan	441	3,100	—	—
Korea, Republic of	33	44	—	—
Malaysia	141	35	—	—
Mexico	0	3	—	—
Norway	32	22	—	—
South Africa	18	7	—	—
United Kingdom	9	25	—	—
Total	26,500	11,300	939	491

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Paints	Advantages	Applications
Marine, epoxy, powder coatings	Reduces cracking, chalking, water penetration; lower vapor transmission; improves thixotropy, heat, UV and scrub resistance	Anticorrosive, primer, marine,

Coatings

Epoxy	Improves chemical resistance, modulus; reduces cost	Tank linings
Joint cement	Improves barrier properties; reduces cracking and shrinking; easier to sand	Construction
Mold release	Adds lubricity; improves mold; release, lower co-efficient of friction	Slip & mold release compounds for automotive, plastic, and industrial
Foundry coatings	Improves permeability, green strength, and HDT; reduces shrinkage	Refractory molds and cores

Asbestos Substitute

Cement	Dimensional stability, heat and freeze/thaw resistance	Cement sheets, pipes, and fire boards
Welding rods	Low hydrogen generation at high temperatures	Industrial
Brake linings	Improves friction, reduces heat transfer, water recovery	Brake industry, automotive, rail and motorcycles
Foundry coatings	Improves permeability, green strength, and HDT; reduces shrinkage	Refractory molds and cores

Other

Mica paper	Improves electrical, heat, and arc suppression properties	Electrical insulation
Fire extinguishers	Powder flow aide, prevents coagulation	Fire extinguisher industry
Refractory bricks	Light weight, heat resistance	Refractory industry
Sound & vibration damping SBR, EVA asphaltic	Improves acoustical properties, reduces vibration	Automotive
Gaskets; latex, rubber and cellulose	Resistant to acids, heat, gas, oil; non-conductive; reduces shrinkage; improves modulus and tensile	Automotive and industrial
Fire resistant insulation	Heat resistance, dimensional stability	Construction steel & pipe insulation
Phosphate bonded mica	Fire proofing, acoustical property improvement	Fire & acoustic light weight and dense boards, construction industry
Porous silica	High surface area, high absorbing heat resistant	Catalysts, high purity glass, etc.
Dry anti-stick agent	Lubricity, flat alignment, heat resistant	Rubber & roofing industry
Caulks & sealants, PU, PB, silicone, epoxy	Reduces cracking, permeability improves barrier, heat and chemical resistance	Industrial