



Elastomer Reinforcement Using Celatom® Diatomaceous Earth

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Celatom® diatomaceous earth (DE) is an economical and highly effective reinforcing filler for use in several types of rubber, silicones, and other elastomers. Celatom is available in several different types and fine particle sizes for these applications.

Celatom is a fine, freshwater DE that has low density, chemical inertness, consistent particle shapes and sizes, and a uniquely strong, open structure which provides strong bonding and is compatible with all types of elastomers. It can be used alone or with organo-silane surface treatments.

Benefits of using Celatom DE

- Improved Shore A hardness and modulus
- Improved (lower) compression set
- Good resistance to oils and fuels
- Good heat dissipation, resistance to heat build-up
- Good release from mixing rollers and molds
- Excellent seal performance at rubber-metal interface
- Can be used as a carrier for liquid ingredient
- Extender for more expensive materials (precipitated silica, carbon black)
- Processing benefits -- reduced viscosity, mixing energy, and/or mixing time
 - ▶ Allows higher filler levels while remaining workable
 - ▶ Optimum ratio 1 part DE to 3 parts precipitated silica

Proven Elastomer Applications for Celatom DE

Nitrile Butyl Rubber (NBR)

- Medical syringe seals
- Rubber gloves
- Print rollers
- Colored sports shoe components

Ethylene Propylene Diene Monomer Rubber (EPDM)

- Automotive weather stripping (injection molded corners)
- Window Seal Profiles

Fluoro-elastomers (FKM)

- Automotive shaft seals
- O-rings
- Gaskets

Silicone Rubber (SR)

- O-rings and seals
- Gaskets
- Print rollers

Styrene-Butadiene Rubber (SBR)

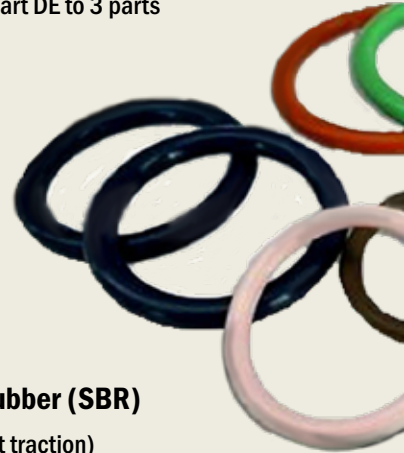
- Automotive tires (wet traction)

Chloroprene Rubber (CR)

- Protective covers for consumer electronics
- Rubber gloves

Acrylic Elastomer (ACM)

- O-rings, oil seals
- Celatom Products for Elastomers



Grade #	CelaBrite®	MW-25	LCS-3	MN-23	FP-22
Median Particle					
Diameter (microns)	10.9	12.6	12.4	8.0	8.5
Density (lbs/ft³)					
Wet Bulk	25	25	22	33	25
Density (g/l)					
Wet Bulk	400	400	350	530	400
Brightness (Y)	91	90	83	65	-
Oil Absorption ²	120	120	170	130	-

(2) Gardner-Coleman [lbs/100lbs]

E L A S T O M E R S

Optimum performance is usually achieved with a 25% substitution of DE for precipitated silica, which allows many of the performance and processing benefits of DE to be realized with minimal reductions in tensile strength and elongation.

