



» PRODUCT BULLETIN

Gravi-Tech™ Density-Modified Formulations High-Performance Alternative to Lead and Other Traditional Metals

PRODUCT DESCRIPTION

Gravi-Tech™ polymer-metal composites offer a high-performance thermoplastic-based alternative to lead and other traditional dense metals. Using a variety of metallic fibers and particles, these compounds have densities similar to traditional metals, while offering design and processing flexibility because of the polymer matrix, which can be extruded, molded, calendered, or thermoformed into the final desired shape.

VALUE SOLUTION

Improve safety and reduce costs with Gravi-Tech formulations

When Gravi-Tech polymer metal composites are substituted for lead, manufacturers can avoid the regulatory, disposal and employee exposure challenges associated with lead. Several grades of Gravi-Tech composites used for radiation-shielding applications provide protections similar to traditional lead-based materials, yet these Gravi-Tech polymer-metal composites are 37 percent lighter. Other radiation-shielding grades are available that match the density of lead (11 gm/cm³).

KEY CHARACTERISTICS

The primary features and benefits of Gravi-Tech formulations are:

- **Customized density**, offering a wide range of specific gravities from 1.2 to 11 gm/cm³
- **Broad modulus range**, from very flexible to very rigid grades
- **Corrosion resistance**, withstanding oxidation for long-term use and benefit
- **Chemical resistance**, withstanding fuels, oils and other harsh chemicals
- **Metallization and electroplating**, delivering the look and feel of metal

Additional features include:

- Design flexibility and processing ease
- Good impact strength
- Elevated heat deflection temperature



TARGET MARKET AND APPLICATIONS

Gravi-Tech composites are an excellent choice for applications in a full range of markets, including:

Consumer

Luxury packaging, golf clubs, fishing tackle, casino/gaming chips, exercise weights, hunting supplies, cutlery, appliances and hunting ammunition

Healthcare

X-ray shielding, nuclear medicine transport containers, and laboratory furniture and equipment

Industrial

Ammunition, reactor shielding, vibration and acoustical damping, military/tactical equipment, airport x-ray shielding, various food ware, building and construction equipment, inertial weighting, and underwater cable weighting



TECHNICAL PROPERTIES

Base Resin	Specific Gravities
Nylon 6	2.3, 2.7, 3.5, 4, 4.5, 5, 6
TPE	2.6, 3.9
TPU	2.6, 3, 4.5, 7.5, 9
PP	1.15-4
ABS	1.2-3
PPS	4
Nylon 12	4, 6.9, 11

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