MATERION

Data Sheet

Phosphor Materials

The LED industry is rapidly evolving to meet market demands for better colorization, improved performance/price ratios, longer lifetime and superior energy efficiency. A critical component in LEDs is phosphor material, which is difficult to produce. Manufacturers must meet stringent requirements for purity, oxygen levels, and moisture protection. Innovative companies are in need of high quality products with improved shelf life as well as trusted partners to assist with new product development.

Materion offers high-purity phosphor precursors for the fabrication of LED phosphors and services to support the development of new products.

Improved Material Characteristics

- Broad range of chemistries
- Unique manufacturing capabilities
- Richer color displays
- Increased levels of luminous output
- High quality alkali earth nitrides; rare earth nitrides and hydrides

Research & Development

- Partnering from prototype to full production
- Materials expertise
- Customizable alloys, size and purity
- New experimental materials with tailored physical properties

Benefits

- Reactive gas processing produces the broadest variety of unique materials
- Controlled atmosphere handling of environmentally sensitive materials improves performance
- Particle size, purity and packaging optimized for customer processes
- Convenient worldwide facilities
- Scaled manufacturing quantities from R&D to full production levels
- Customized phosphor processing, material synthesis & chemical analysis

Materials

- Granules & powders available from 20 mesh to -325 mesh
- Purities up to 99.9% to produce higher yields with less down time
- Oxygen levels typically <0.75 wt% with lower available upon request

- Compositions Available
  - Aluminum Nitride, AlN
  - Barium Hydride, BaH_2
  - Barium Nitride, Ba_3N_2
  - Calcium Hydride, CaH_2
  - Calcium Nitride, Ca_3N_2
  - Cerium Nitride, CeN
  - Europium Nitride, EuN
  - Gadolinium Nitride, GdN
  - Gallium Nitride, GaN
  - Lanthanum Nitride, LaN
  - Lutetium Nitride, LuN
  - Magnesium Nitride, $Mg3N_2$
  - Silicon Nitride, Si_3N_4
  - Strontium Hydride, SrH_2
  - Strontium Nitride, Sr-N*
  - Ytterbium Nitride, YbN
  - Yttrium Nitride, YN

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