



**MATERION**



**ADVANCED MATERIALS**

Organic Light  
Emitting Diodes



**MATERION**

# Materials for Organic Light Emitting Diodes (OLED)

## The Challenge

There is an ever increasing market demand for electronic displays for information devices. This has led to a growing need for options that reduce energy consumption and improve color characteristics. Manufacturers are turning to organic light emitting diode (OLED) technology to address these concerns. Materion produces a select line of high purity materials for OLED display.

### BENEFITS

Our materials are designed to advance the role of OLED technology and contribute to saving energy and creating a richer color display.

Materion has a rich history in producing materials for emerging technologies ranging from solar to LED to specialty thin film coatings.

Our OLED products include anode, cathode and barrier layer materials. We will work with you to develop a specialized material or choose from these primary materials:

- Aluminum
- Lithium Fluoride
- Magnesium
- Silver

### STRATEGIC LOCATIONS

With global facilities located in the United States, China, Singapore, Taiwan, UK, Netherlands and Germany, we have the capability to customize material to meet your specific requirements worldwide. Wherever you are located or whatever your needs, our materials solutions are fully scalable.



**Materion Advanced Materials Group...  
Evolving through Technical Innovation**

[www.materion.com/advancedmaterials](http://www.materion.com/advancedmaterials)

**MATERION ADVANCED MATERIALS GROUP**, is a global technology company that develops and manufactures inorganic chemicals and large area coating materials for applications ranging from LED products, architectural and automotive glass, solar panels and specialty thin film coatings. As the former CERAC Inc., it was founded in the early 1930's and has been a public corporation since 1956. Materion prides itself on understanding the needs of the growing materials market. Our vertically integrated manufacturing approach allows us to provide superior coatings for virtually all applications from the deep UV to the far infrared. We employ a diverse group of chemists, metallurgists and material technologists to offer cutting-edge technologies and superior quality products.

## ALUMINUM

Materion's aluminum processing capabilities include casting, swaging, drawing and machining. This is complemented by a full materials characterization capability.

### Physical Characteristics

- Melting Point Temperature: 660°C
- Theoretical Density: 2.7g/cc
- Estimated Evaporation Temperature: 1000°C

### Material Options

- Standard purity level of 99.99%
- High purity of 99.999%
- Evaporation Materials Forms: Granule, Shot, Pellets
- Sputtering Targets: Planar, Rotary

## LITHIUM FLUORIDE

Materion's LiF capability includes chemical synthesis, fluoride chemical melting, sintering and particle sizing. Full chemical and particle size characterization is an extension of these capabilities.

### Physical Characteristics

- Melting Point Temperature: 870°C
- Theoretical Density: 2.6g/cc
- Estimated Evaporation Temperature: 180°C
- Refractive Index (visible): 1.36

### Material Options

- Purity: 99.9%
- Evaporation Materials Forms: Granules, Pieces

## MAGNESIUM

Materion's magnesium processing capabilities include formation, purification and particle size classification. In addition, we use a variety of analysis techniques for chemical and form factor verification.

### Physical Characteristics

- Melting Point Temperature: 651°C
- Theoretical Density: 1.7g/cc
- Estimated Evaporation Temperature: 330°C

### Material Options

- Standard purity level of 99.99%
- High purity of 99.999%
- Evaporation Materials Forms: Granules, Rod, Pellets
- Sputtering Targets: Planar

## SILVER

Materion's silver capabilities include refining, casting, forging, oxide reduction, reclamation and grain production. Full chemical characterization complements these capabilities.

### Physical Characteristics

- Melting Point Temperature: 961°C
- Theoretical Density: 10.5g/cc
- Estimated Evaporation Temperature: 1000°C

### Material Options

- Standard purity of 99.99%
- Evaporation Materials Forms: Shot, Rod
- Sputtering Targets: Planar, Rotary



ALUMINUM (Al)



LITHIUM FLUORIDE (LiF)



MAGNESIUM (Mg)



SILVER (Ag)

**Materion** is a global advanced materials and services company, dedicated to providing solutions that enable our customers' technologies and drive their growth. Our products include precious and non-precious specialty metals, precision optical filters, inorganic chemicals and powders, specialty coatings, specialty-engineered beryllium alloys, beryllium and beryllium composites, and engineered clad and plated metal systems. The Materion business is structured to enhance our ability to provide customers with innovative, best total-cost solutions.

## ADVANCED MATERIALS GROUP

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