Honeywell Electronic Materials

Solutions for the World’s Electronics
Honeywell Electronic Materials is a leading supplier to the worldwide electronics industry, providing critical materials which enhance the performance and productivity of our customers’ manufacturing processes. We are located in 17 sites employing approximately 1000 people across the United States, Europe and Asia. As a unit of Honeywell’s Specialty Materials segment, we share in the strength, resources and best practices of one of the world’s leading corporations.

Our three major centers dedicated to research and development are located in Sunnyvale, California, Spokane, Washington and Shanghai, China, and we hold nearly 400 granted and pending patents. Continuous investment in advanced research, worldwide strategic collaborations, and dedication to working closely with our customers have resulted in a wide range of innovative products serving the critical needs of manufacturers in the semiconductor, photovoltaic, display and LED industries.

In 2001 we were the first semiconductor materials company to receive a single universal registration for all global sites within the two standards of QS-9000 and ISO9001:2000. Recently earning TS16949:2007 certification, our quality disciplines QS-9000 and ISO9001:2000. Recently earning for all global sites within the two standards of company to receive a single universal registration in 2001 we were the first semiconductor materials enabling us to build significant expertise in several key components of the fast-growing HB/UHB LED industry. Honeywell materials fit into both the thermal management and electrical interconnect segments of LED manufacturing and lighting system assembly processes. Thermal Management products include Printable Thermal Interface Materials (TIMs) and Custom Heat Spreaders. For electrical interconnect we offer materials for Backside Metallization and Die Bonding, as well as Interconnect Wire.

**Honeywell Electronic Materials**

Our advanced electronic material expertise is now being leveraged for key components of the fast-growing HB/UHB LED industry. Honeywell materials fit into both the thermal management and electrical interconnect segments of LED manufacturing and lighting system assembly processes. Thermal Management products include Printable Thermal Interface Materials (TIMs) and Custom Heat Spreaders. For electrical interconnect we offer materials for Backside Metallization and Die Bonding, as well as Interconnect Wire.

Leveraging Key Strengths in Chemistry and Metallurgy

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<th>NEEDS</th>
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<th>HONEYWELL ADVANTAGES</th>
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<tr>
<td>INSULATION PLANARIZATION GAP-FILL LIGHT MANAGEMENT CHEMICAL DOPING</td>
<td>Microelectronic &amp; Optoelectronic Polymers - Spin-on Glass (SOG) - Anti-reflective coatings - Etch transfer layers - Low-k restoration materials - Dopants</td>
<td>Pioneer of spin-on-glass (SOG) technology - Innovative polymers for semiconductor and photovoltaic applications - Full suite of tools for in-house development and testing</td>
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<td>ETCH AND CLEAN</td>
<td>High-Purity Electronic Chemicals - Straight acids and bases - Selective etchants and blends - Solvents and solvent blends - Wafer thinning materials</td>
<td>Superior product quality and reliability - Ultra-high purity and precision analysis - Worldwide supply chain and logistics - Widest range of packaging solutions - Experts in safe handling and transportation</td>
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<td>METALLIZATION</td>
<td>PVD Targets, Coils, &amp; High-Purity Metals/Alloys - Al, Ti, Cu, Ta, W, Co and other targets - Ta, Ti and Cu coils - High-purity Ti, Cu, W, Co, Al and Ni metal</td>
<td>300mm advanced technology - OEM partnerships - Productivity and CoO solutions - Supply chain reliability through vertical metals integration</td>
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<td>TEMPERATURE SENSING</td>
<td>Precious Metal Thermocouples</td>
<td>OEM qualified for both PV and semi - World-class calibration and engineering - Economic trade-in (SWAP) program</td>
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<td>THERMAL MANAGEMENT</td>
<td>Thermal Interface Materials (TIM) - Thermal Heat Spreaders</td>
<td>Fast prototyping capability - Differentiated, high-reliability phase change technology</td>
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<td>ELECTRICAL INTERCONNECT</td>
<td>Solders (including Low-Alpha and Pb-Free), Evaporation, Plating Anodes, Oxides, Methanesulfonic Acid (MSA) and Die Attach Materials, Pure Metals</td>
<td>Industry leading low alpha measurement and control - RoHS compliant Pb-free materials</td>
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**Empowering the Global Leaders of Innovation**

**SEMICONDUCORS**

Fifty years ago, we were among the first materials suppliers for the nascent semiconductor industry. Each decade our range of products has grown, ultimately including materials for almost every stage of wafer fabrication and IC packaging. These offerings include Microelectronic Polymers, Sputtering Targets and Coil Sets, Electronic Chemicals, Electrical Interconnect and Thermal Management Packaging Materials, and Thermocouples. We are committed to continuing the product innovations and customer service excellence that have earned Honeywell its long-held leadership position in this industry.

**PHOTOVOLTAICS**

Honeywell is a global leader in energy-efficient technologies, with more than one-hundred years of experience in providing energy-conserving products and services. Fifty years of providing semiconductor materials enabled us to build significant expertise in several critical areas: ultra-high purity (UHP) material handling, polymer formulation including anti-reflective coatings, doping processes, management of optical properties, and precise coating techniques. All of these skills are now being applied to meet the needs of the photovoltaic industry. Current PV offerings include SOLARC® Coatings, Thermocouples, Printable Dopants, Interconnect Ribbon, and Electronic Chemicals.

**LED PACKAGING**

Our advanced electronic material expertise is now being leveraged for key components of the fast-growing HB/UHB LED industry. Honeywell materials fit into both the thermal management and electrical interconnect segments of LED manufacturing and lighting system assembly processes. Thermal Management products include Printable Thermal Interface Materials (TIMs) and Custom Heat Spreaders. For electrical interconnect we offer materials for Backside Metallization and Die Bonding, as well as Interconnect Wire.
Worldwide development, manufacturing and support

United States
- Santa Clara, California
- Sunnyvale, California
- Spokane, Washington
- Chandler, Arizona
- Salt Lake City, Utah
- Golden, Colorado
- Bryan, Texas
- Mansfield, Texas
- Fombell, Pennsylvania
- Morristown, New Jersey

Europe
- Seelze, Germany

Asia
- Shanghai, China
- Jincheon, Korea
- Yaita, Japan
- Chonburi, Thailand
- Hsinchu, Taiwan
- Singapore

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