

Honeywell Electronic Materials



**Solutions for the
World's Electronics**

Honeywell



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.

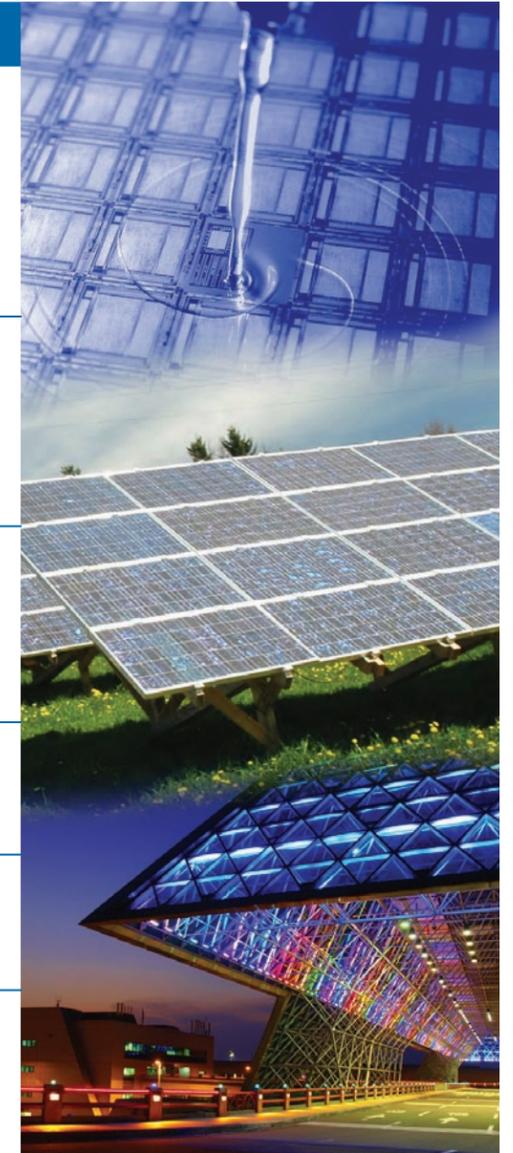
Our three major centers dedicated to research and development are located in Sunnyvale, California, Spokane, Washington and Shanghai, China, and we hold nearly 400 granted and pending patents. Continuous investment in advanced research, worldwide strategic collaborations, and dedication to working closely 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 continue evolving to ensure that we exceed our customers' requirements.

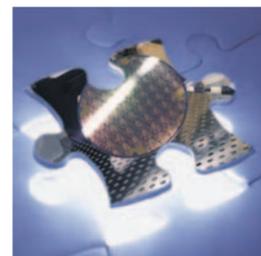


Leveraging Key Strengths in Chemistry and Metallurgy

NEEDS	SOLUTIONS	HONEYWELL ADVANTAGES
INSULATION PLANARIZATION GAP-FILL LIGHT MANAGEMENT CHEMICAL DOPING	Microelectronic & Optoelectronic Polymers <ul style="list-style-type: none"> Spin-on Glass (SOG) Anti-reflective coatings Etch transfer layers Low-k restoration materials Dopants 	<ul style="list-style-type: none"> Pioneer of spin-on-glass (SOG) technology Innovative polymers for semiconductor and photovoltaic applications Full suite of tools for in-house development and testing
ETCH AND CLEAN	High-Purity Electronic Chemicals <ul style="list-style-type: none"> Straight acids and bases Selective etchants and blends Solvents and solvent blends Wafer thinning materials 	<ul style="list-style-type: none"> 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
METALLIZATION	PVD Targets, Coils, & High-Purity Metals/Alloys <ul style="list-style-type: none"> Al, Ti, Cu, Ta, W, Co and other targets Ta, Ti and Cu coils High-purity Ti, Cu, W, Co, Al and Ni metal 	<ul style="list-style-type: none"> 300mm advanced technology OEM partnerships Productivity and CoO solutions Supply chain reliability through vertical metals integration
TEMPERATURE SENSING	Precious Metal Thermocouples	<ul style="list-style-type: none"> OEM qualified for both PV and semi World-class calibration and engineering Economic trade-in (SWAP) program
THERMAL MANAGEMENT	Thermal Interface Materials (TIM) Thermal Heat Spreaders	<ul style="list-style-type: none"> Fast prototyping capability Differentiated, high-reliability phase change technology
ELECTRICAL INTERCONNECT	Solders (including Low-Alpha and Pb-Free), Evaporation, Plating Anodes, Oxides, Methanesulfonic Acid (MSA) and Die Attach Materials, Pure Metals	<ul style="list-style-type: none"> Industry leading low alpha measurement and control RoHS compliant Pb-free materials



Empowering the Global Leaders of Innovation



SEMICONDUCTORS

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



▲ Research & Development Site ● Manufacturing Site ■ Support Site



RESPONSIBLE CARE
OUR COMMITMENT TO SUSTAINABILITY

Honeywell Electronic Materials

USA: 1-509-252-2102

China: 86-21-28942481

Germany: 49-5137-999-9199

Japan: 81-3-6730-7092

Korea: 82-2-3483-5076

Singapore: 65-6580-3593

Taiwan: 886-3-6580300 ext.312

www.honeywell.com/sm/em

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