ELECTRONIC MATERIALS OVERVIEW
Honeywell

$38.6B in sales*

53% sales outside U.S.

• 1,300 sites
• 70 countries
• More than 129,000 employees
• Morris Plains, NJ, USA headquarters
• Fortune 100

Aerospace

Performance Materials and Technologies

Automation and Control Solutions

*2015
Honeywell’s innovative technologies are making our world cleaner and more sustainable, more secure, connected, energy efficient, and productive.

- Energy efficiency and clean energy generation
- Safety & security of people, plants, assets, and data
- Rapid global urbanization and resource development
- Productivity and connectivity

PMT and all Honeywell businesses, products and services address these major global issues.
Recognition & Media Highlights in 2015

Honeywell received more than 155 business and industry awards

Honeywell Chairman and CEO Dave Cote Discusses Sustainable Urbanization During CEO Council in Beijing

Dave Cote Appears on Mad Money From Honeywell’s 2016 Annual Investor Conference

Honeywell Growth & Performance Highlighted by Barron’s Magazine

Honeywell Chairman and CEO Dave Cote Featured on Yahoo! Finance to Discuss Acquisition Strategy
Technology & Innovation

22,800
Technologists worldwide
~50% focused on software

118
Research, engineering and design facilities

37,000
Patents granted or pending

Developing solutions for the world’s toughest challenges
Honeywell Electronic Materials (HEM)

Bringing together expertise in chemistry and metallurgy…

• ~1200 employees across the United States, Europe and Asia
• ~ a half billion dollar business
• nearly 400 granted and pending patents
• over a half century experience serving the electronics industries

...to develop advanced materials for electronics manufacturers worldwide
Why HEM?

Industry Leadership
- Half century experience supporting the Semiconductor Industry
- Direct sales and technical service in all regions
- Focused Experience and Expertise, Quality and Service

Materials Development Leadership
- Advanced material set development, leveraging chemical and metallurgical expertise
- Partnerships with OEMs for advanced tool and process development
- Technology and Applications Knowledge to Support Customer Roadmaps

Engineering Leadership
- Innovations to improve cost of ownership (CoO) of existing products
  - Higher customer yields through product and process improvements
  - Increased tool up-time through longer life products
- Creative Solutions Delivering Superior Value

Supply Chain Leadership
- Industry leading vertical integration
  - Metals - Ti, Cu, Al, W, Co
  - Chemicals – HF, solvents
- Supply Stability, Material Control and Flexible Response to Demand Changes

Strength
- Backed by the global strength of Honeywell
- Financial Stability, Investment Capabilities, Global Infrastructure, Technology Resources
Offerings and Applications

Electronic Polymers

- Materials for a variety of wafer fabrication processes, such as spin-on glass, low-k, planarization, gap-fill, chemical doping and anti-reflective coatings for lithography
- Planarization materials for flat panel displays

Targets

- PVD sputtering targets for wafer fabrication, including 200mm and 300mm; 450mm currently in development
- Targets and coil sets for most configurations
- Vertical integration of high-purity source metals

Chemicals & Heat Spreaders, Thermocouples

- High-purity and ultra high-purity chemicals such as straight acids and bases, selective etchants and blends, solvents and wafer thinning materials
- Precious metal thermocouples
- Heat spreaders and mechanical stiffeners

Advanced Metals & Polymers

- Electrical interconnect materials, including solders, evaporation, die attach wire and preforms, and plating anodes
- Industry-leading low alpha measurement and control, and RoHS compliant Pb-free materials
- High reliability phase change materials for thermal management
Honeywell Electronic Materials Locations

Worldwide Development, Manufacturing and Support

United States
- Santa Clara, California
- Sunnyvale, California
- Spokane, Washington
- Chandler, Arizona
- Salt Lake City, Utah
- Bryan, Texas
- Houston, Texas
- Mansfield, Texas
- Fortbell, Pennsylvania
- Morris Plains, New Jersey

Europe
- Seelze, Germany

Asia
- Shanghai, China
- Jincheon, Korea
- Tokyo, Japan
- Yaita, Japan
- Chonburi, Thailand
- Hsinchu, Taiwan
- Singapore
Honeywell Performance Materials and Technologies, as a member of the American Chemistry Council, has adopted Responsible Care as the foundation of health, safety, and environmental (HS&E) excellence in our business.

Responsible Care is the chemical industry’s global voluntary initiative under which companies, through their national associations, work together to continuously improve their health, safety and environmental performance, and to communicate with stakeholders about their products and processes.

Our commitments:

• The safety of our employees
• The quality of our products
• Being responsible stewards for the protection of the environment, the communities in which we operate and our customers
Honeywell

www.honeywell.com
www.electronicmaterials.com