



Mallinckrodt Baker

COVIDIEN'S MALLINCKRODT BAKER UNIT EXPANDS SOLAR CELL SURFACE MODIFIER PORTFOLIO WITH TWO NEW PHOTOVOLTAIC CHEMISTRIES

New J.T.Baker® Surface Modifiers Enhance Solar Cell Efficiency, Increase Cell Energy Output for Both In-line and Batch Solar Cell Manufacturing Processes

Phillipsburg, New Jersey – July 8, 2009 – Covidien (NYSE: COV) today announced that its Mallinckrodt Baker business is expanding its solar cell surface modifier product portfolio with two photovoltaic (PV) chemistries. The new PV-162 and PV-200 solar cell surface modifiers will enhance solar cell efficiency by up to 0.7% absolute, increasing cell energy output for both in-line and batch solar cell manufacturing processes.

Mallinckrodt Baker will feature the new products at SEMICON® West 2009, in San Francisco, CA, July 14-16.

“Solar cell manufacturing is all about improving efficiency – cell efficiency and manufacturing efficiency – in order to reduce the cost per watt peak (Wp) of energy produced by the cells,” said John Harris, Global Marketing Manager, Photovoltaics Materials, Mallinckrodt Baker. “With these new performance chemistries, Mallinckrodt Baker continues delivering on its commitment of helping solar energy to achieve grid parity by bringing the efficiency enhancing benefits of post-emitter surface modification to both the in-line and batch process crystalline silicon solar cell manufacturing communities. When combined with our experienced PV applications engineering support, this unique surface modification technology can enhance cell efficiency by up to 0.7% absolute.”

PV-162 solar cell surface modifier, a second-generation post-emitter surface modification product, builds upon Mallinckrodt Baker's highly successful PV-160 chemistry. While

remaining compatible with current manufacturing equipment used with the PV-160 chemistry, PV-162 solar cell surface modifier can deliver nearly twice the efficiency gain of its predecessor. A 100 percent water-soluble formulation requiring no intermediate rinse, PV-162 solar cell surface modifier increases cell efficiency by reducing charge recombination. The reduction in charge recombination results in higher open circuit voltage (V_{oc}), short circuit current (I_{sc}) and fill factor (FF) which improves cell efficiency.

PV-200 solar cell surface modifier extends the efficiency enhancing benefits of post-emitter surface modification to batch processes which use phosphorus oxychloride ($POCl_3$ or POCL) doping technology. As with PV-162 chemistry, this increase is achieved by reducing charge recombination, resulting in increased open circuit voltage (V_{oc}) and short circuit current (I_{sc}).

PV-200 solar cell surface modifier's tunable etch gives process engineers the ability to optimize the product's performance in their manufacturing process and achieve maximum cell efficiency gains. Its low bath temperature, between 20 and 40 degrees centigrade, reduces energy expenditures while providing extended bath life, reducing overall cost of ownership.

Customers who are interested in learning more about PV-162 and PV-200 solar cell surface modifiers, should visit www.MallBaker.com/micro or call 1-800-494-7051 to request a free product sample or speak with application scientist.

ABOUT MALLINCKRODT BAKER

Mallinckrodt Baker is a manufacturer of high purity chemicals and related products and services sold under two well-known and respected brand names - J.T.Baker[®] and Mallinckrodt[®] Laboratory Chemicals. These products are widely used in research and quality control laboratories, microelectronics, environmental testing laboratories and universities, and for manufacturing in the pharmaceutical, biotechnology, and other industrial markets. Based in Phillipsburg, New Jersey, Mallinckrodt Baker is part of Covidien.

ABOUT COVIDIEN

Covidien is a leading global healthcare products company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. Covidien manufactures, distributes and services a diverse range of industry-leading product lines in four segments: Medical Devices, Imaging Solutions, Pharmaceutical Products and Medical Supplies. With 2008 revenue of nearly \$10 billion, Covidien has more than 41,000 employees worldwide in 59 countries, and its products are sold in over 140 countries. Please visit www.covidien.com to learn more about our business.

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