

Huntsman leads the North American charge in lithium-ion battery solvents

Advances in lithium-ion battery technology are driving car manufacturers to begin mass-producing electric vehicles and Huntsman is leading the charge to provide battery makers with the solvent critical to reliable performance.

According to one study (http://cet.berkeley.edu/dl/CET_Technical%20Brief_EconomicModel2030_f.pdf), by 2030, electric cars could account for more than half of U.S. light-vehicle sales. This study highlights several positive environmental and societal benefits such as up to an almost 70 percent reduction in greenhouse gas emissions by 2030. The study also predicts positive effects on the use of electric cars on health care cost savings, lower oil imports, improved trade deficit and higher overall employment.

Commonly used in consumer electronics, such as phone and computer laptops, lithium-ion batteries are becoming increasingly used in military and aerospace applications, as well as electric vehicles. A critical component in lithium-ion batteries is the electrolyte. High-quality ethylene carbonate and propylene carbonate, used in electrolyte as solvents, are critical to the reliable operation and long working life of lithium-ion batteries. Huntsman is a world leader and innovator in high-purity cyclic carbonates, which it markets under its ULTRAPURE® brand.

A lithium-ion battery cell contains four main components: cathode, anode, electrolyte and separator. The electrolyte passes lithium salts between the cathode and the anode, which are separated by the polymeric separator. "Without the solvent, the charge could not effectively migrate and the battery would not function," explains Nick Kob, Technology and Business Development Manager.

"What we do is not visible to the consumer, but the lithium-ion battery can't function without the carbonate solvents that Huntsman produces," Kob says.

He also points out that not many companies make these carbonate solvents and even fewer can make them to the high quality standards that are required for lithium-ion battery application. "Huntsman is the only producer in North America and one of only a few companies in the world that produces these cyclic carbonate lithium-ion battery solvents."

Huntsman's plans include both a near-term capability expansion of its ULTRAPURE® solvent electrolytes production capabilities in Conroe, Texas, and investigation of a new North American integrated carbonates plant to supply the lithium ion battery market as it grows.

"Technology advances, as well as decreasing costs for lithium-ion batteries are driving adoption in applications such as automotive vehicles. Components such as Huntsman's high purity ULTRAPURE® carbonates are enabling these advances. Huntsman is proud to have a role in working for a more sustainable environment and economy," Kob says.