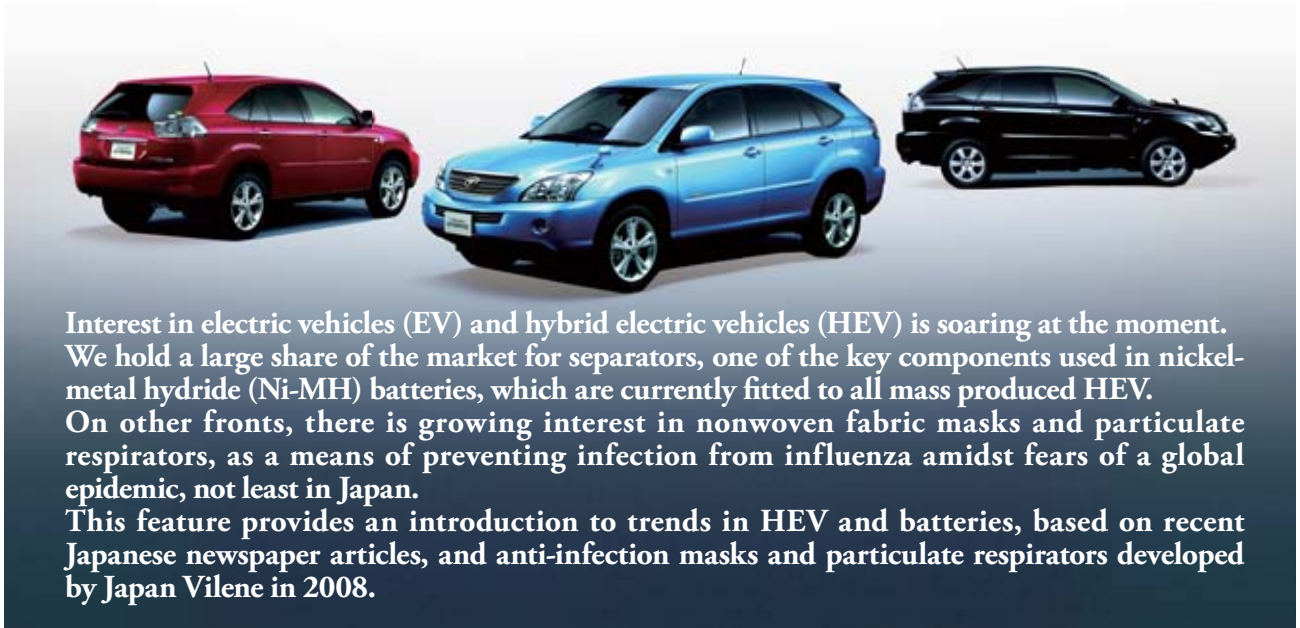


# Japan Vilene's Initiatives in the Medical, Health and Environmental Sectors



## Hybrid electric vehicles (HEV) and batteries

Despite only being launched by Toyota on May 18, 2009, more than 130,000 orders have already been placed for the New Prius, with demand expected to remain at a high level from June onwards (The Nikkei, June 5, 2009). Sales of the Honda Insight meanwhile, which was launched in February 2009, also exceeded 20,000 vehicles during the period from February to the end of the holiday period in early May (The Nikkei, May 19, 2009).

A battery manufacturer jointly financed by Toyota and Panasonic began full production of vehicle batteries in May 2008 and plans to commence operations at a new plant currently under construction in Miyagi prefecture next year (2010). Sanyo Electric is also pushing ahead with mass production plans, including the construction of a new next generation battery plant in Hyogo prefecture at the cost of ¥30 billion (The Nikkei, May 19, 2009).

Within the current market environment, all mass produced HEV are fitted with Ni-MH batteries, which in turn use separators manufactured by Japan Vilene. With approximately one million vehicles on the HEV market in 2009, we expect that the vast majority will continue to be fitted with Ni-MH batteries.



Ni-MH battery for HEV

## New developments

Kawasaki Heavy Industries is to start taking orders for light rail vehicles (LRV) in the United States for the first time in 30 years. Developed exclusively by Kawasaki, the SWIMO low-floor battery-powered streetcar is a low-floor LRV that runs on batteries developed in 2007. SWIMO vehicles are fitted with Ni-MH batteries (The Nikkan Kogyo Shimbun, April 23, 2009).

On April 17, Panasonic EV Energy, a joint venture between Toyota and Panasonic, received an order for Ni-MH batteries for 2,000 buses from Allison Transmission, a Japanese-US transmission manufacturer based in the state of Indiana (FujiSankei Business i, April 18, 2009).

Toyota Industries, the world's leading forklift truck manufacturer, is set to begin commissioned production of dozens of hybrid vehicles equipped with Ni-MH batteries in December 2009. The battery fitted in the Toyota Prius has been modified for use in forklift trucks (The Nikkei, June 9, 2009).

## Development of the NIOSH approved V-1003N N95 particulate respirator Sales targeting domestic medical institutions, etc.

Our Apparel and Medical Materials Division has developed the V-1003N N95 particulate respirator, which has been approved by the National Institute for Occupational Safety and Health (NIOSH). Sales commenced in July 2008 via sales subsidiary Vilene Create Co., Ltd., primarily targeting facilities such as medical institutions nationwide. The product consists of six layers of material, including three charged filters. The V-1003N offers a high level of particle collection efficiency of higher (collection efficiency of 97.0% with a mean diameter of 0.075 $\mu$ m (particle)) and also makes it easy to breathe, thereby alleviating any strain on the user. As all of the materials contained in each particulate respirators are non-metallic, there is no longer any need to dismantle or separate particulate respirators for disposal. V-1003N particulate respirator is designed as individual protectors to reduce the risk of infection amongst workers in high-risk occupations in the event of an influenza epidemic (including medical professionals, quarantine staff, customs, self defense force, police, fire service and other officials and personnel in industries such as power, gas, oil and food retail). We handle every part of the process from manufacturing filters through to processing particulate respirators at domestic plants in Japan.



**N95:** Standard for particulate respirators as stipulated under US Code of Federal Regulations (42 CFR Part 84: Respiratory Protective Devices)  
**NIOSH:** National Institute for Occupational Safety and Health