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Introducing the V-Gard® GREEN Hard Hat from MSA

V-Gard GREEN: The World's First Sustainable Hard Hat

- MSA is the largest producer of industrial hard hats in North America and other regions of the world. MSA's iconic V-Gard® Hard Hats, identifiable by their unique and raised "V-shaped" crown, have saved countless lives by protecting wearers from top impact hazards.
- The V-Gard GREEN Hard Hat is the world's first protective helmet shell produced from renewable resources.
- The V-Gard GREEN Hard Hat was developed by MSA Brazil and introduced to that market in late 2012. It will be manufactured in the U.S. and made available to the North American market in the fall of 2013.
- V-Gard GREEN Hard Hats are produced from green high-density polyethylene (GHDPE), a biopolymer made from sugarcane-based ethanol. GHDPE is a renewable resource because the rate of sugarcane regrowth exceeds the rate of harvest.
- The V-Gard GREEN Hard Hat is similar to traditional V-Gard hard hats in that it is made of high-density polyethylene (HDPE). However, unlike traditional hard hats made from HDPE sourced from non-renewable petrochemical fossil fuels such as oil, the GHDPE used to produce V-Gard GREEN Hard Hats is sourced entirely from sugarcane ethanol.

Protecting People and Planet

- The V-Gard GREEN and the traditional V-Gard Helmet offer the same trusted look and quality customers have come to expect from their V-Gard.
- V-Gard and V-Gard GREEN helmets are third-party SEI certified as Type I, Class E under ANSI/ISEA Z89.1-2009 and CSA Z94.1-2005.2.
- The V-Gard GREEN, like traditional V-Gard Hard Hats, is designed to stay out of landfills as both types of helmets can be recycled. Regardless of the material source, V-Gard helmets are made of High Density Polyethylene (HDPE), and therefore, carry a "Number 2 Plastic" symbol. HDPE carries low risk of leaching and is readily recyclable into many other goods, including detergent bottles, pens, recycling containers, and drainage pipes, to name a few.
- For every ton of GHDPE produced, 2.5 tons of carbon dioxide are captured from the atmosphere and the environment. Conversely, one ton of polyethylene sourced from petrochemicals actually emits more than two pounds of carbon dioxide into the atmosphere¹.
- The production of 200,000 tons of GHDPE represents an annual reduction of CO₂ in the atmosphere of some 920,000 tons. This is equivalent to the CO₂ emitted annually by the energy consumption of 226,000 families².

¹Ecoefficiency Study, Fundação Espaço Eco, 2007).

² Brazilian Government – Ministry of Science and Technology – National Climate Change Program, on the CO₂ emissions produced by generating the electricity consumed by a Brazilian home in 12 months.

The Process of Making GHDPE

- Unlike HDPE produced from fossil fuel (i.e., traditional production), GHDPE production helps reduce carbon emissions and atmospheric CO₂ because it is plant-derived.
- GHDPE can be produced from several types of plants, including corn, sugar beets or sugarcane. The GHDPE used to make the V-Gard GREEN is produced from sugarcane. Sugarcane is a fast-growing plant that grows in tropical climates, such as Brazil.
- Sugarcane captures CO₂ from the atmosphere during photosynthesis (process by which light energy is converted to chemical energy), helping reduce the level of greenhouse gases.
- To make GHDPE, sugarcane is harvested and then converted into ethanol and sugar. The ethanol is used to make green ethylene, which is then converted into GHDPE.
- In Brazil, sugarcane used to produce ethanol is grown on <1% of all arable land (i.e., land set aside specifically for growing crops).
- GHDPE for V-Gard GREEN helmets is sourced from Braskem – the Brazilian chemical and petrochemical company that has become one of the world’s largest producers of thermoplastic resins. Offering increasingly sustainable products is a pillar of Braskem's global business vision and Braskem has intensified its research into renewable chemicals. Braskem’s Code of Conduct is fully aligned with Brazilian laws and regulations and with the principles of sustainable development.

Third-party Certification

The green HDPE used in the construction of the V-Gard GREEN protective helmet has earned a four-star “OK biobased” certification, the highest rating awarded by the European certification organization Vinçotte of Vilvoorde, Belgium. A class four rating recognizes products composed of more than 80 percent biobased carbon content. As one of the few certification bodies using both the European and US standards in system certification, Vinçotte OK biobased certification quantifies the amount of renewable carbon content in manufactured products. The Vinçotte OK biobased certification meets the ASTM D6866 standard for determining the renewable/biobased carbon content of products.

About MSA

Established in 1914, MSA is the global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The company's comprehensive line of products is used by workers around the world in a broad range of industries, including the fire service, the oil, gas and petrochemical industry, construction, mining and utilities, as well as the military. MSA’s core products include self-contained breathing apparatus, fixed gas and flame detection systems, handheld gas detection instruments, head protection products, and fall protection devices. The company also provides a broad range of consumer and contractor safety products through a joint venture with MCR Safety. These products are marketed and sold under the Safety Works® brand. MSA, based north of Pittsburgh in Cranberry Township, Pa., has annual sales of approximately \$1.2 billion, manufacturing operations in the United States, Europe, Asia and Latin America, and 42 international locations. Additional information is available on the company’s Web site at www.MSAafety.com. Information on Safety Works products can be found at www.SafetyWorks.com.

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