



V-Gard® GREEN Helmets Frequently Asked Questions November 2013

1) What are V-Gard GREEN Helmets?

V-Gard GREEN Helmets are hard hats produced from green high-density polyethylene (GHDPE), a biopolymer made from sugar cane-based ethanol. GHDPE is a renewable resource because the rate of sugarcane growth is faster than the rate of harvest.

2) Do MSA competitors make similar helmets?

MSA is the exclusive manufacturer of the the world's first protective helmet produced from nearly 100 percent renewable resources. The V-Gard GREEN Helmet was first introduced by MSA Brazil in 2012, and into the North American market in September 2013. MSA is the only manufacturer to offer a sustainable hard hat in North America.

3) What are the differences between traditional V-Gard helmets and the V-Gard GREEN helmets?

The V-Gard GREEN Helmet is similar to a traditional V-Gard helmet in that it is made of high-density polyethylene (HDPE). However, unlike traditional hard hats in which the HDPE is sourced from non-renewable petrochemical fossil fuels, such as oil, GHDPE in the V-Gard GREEN Helmets model is sourced entirely from sugarcane ethanol.

4) Do V-Gard GREEN helmets meet the same Standards performance criteria as the traditional V-Gard?

Yes. The V-Gard GREEN Helmet 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.

5) How many V-Gard GREEN helmet options are available?

All V-Gard GREEN helmets are standard size safety caps with ratchet suspensions. There are five V-Gard GREEN Helmets cap colors available: white, yellow, blue, red and green.

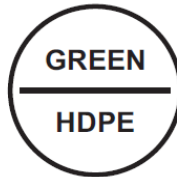
6) Are other suspension options and models (such as full brim hats) available?

The only V-Gard GREEN helmets available are standard size safety caps with ratchet suspensions.

7) **How can you tell the difference between a traditional V-Gard helmet and a V-Gard GREEN helmet?**

V-Gard GREEN Helmets have three distinguishing features:

- a. Under the front brim, there is an ECO wheel, showing the product is made of green HDPE:



- b. The back lug, opposite the MSA logo, has an “I’m green” logo label:



- c. The helmet has an internal ID label showing depicting that this product is produced from renewable resources:



8) **Are V-Gard GREEN helmets heavier than traditional V-Gard helmets?**

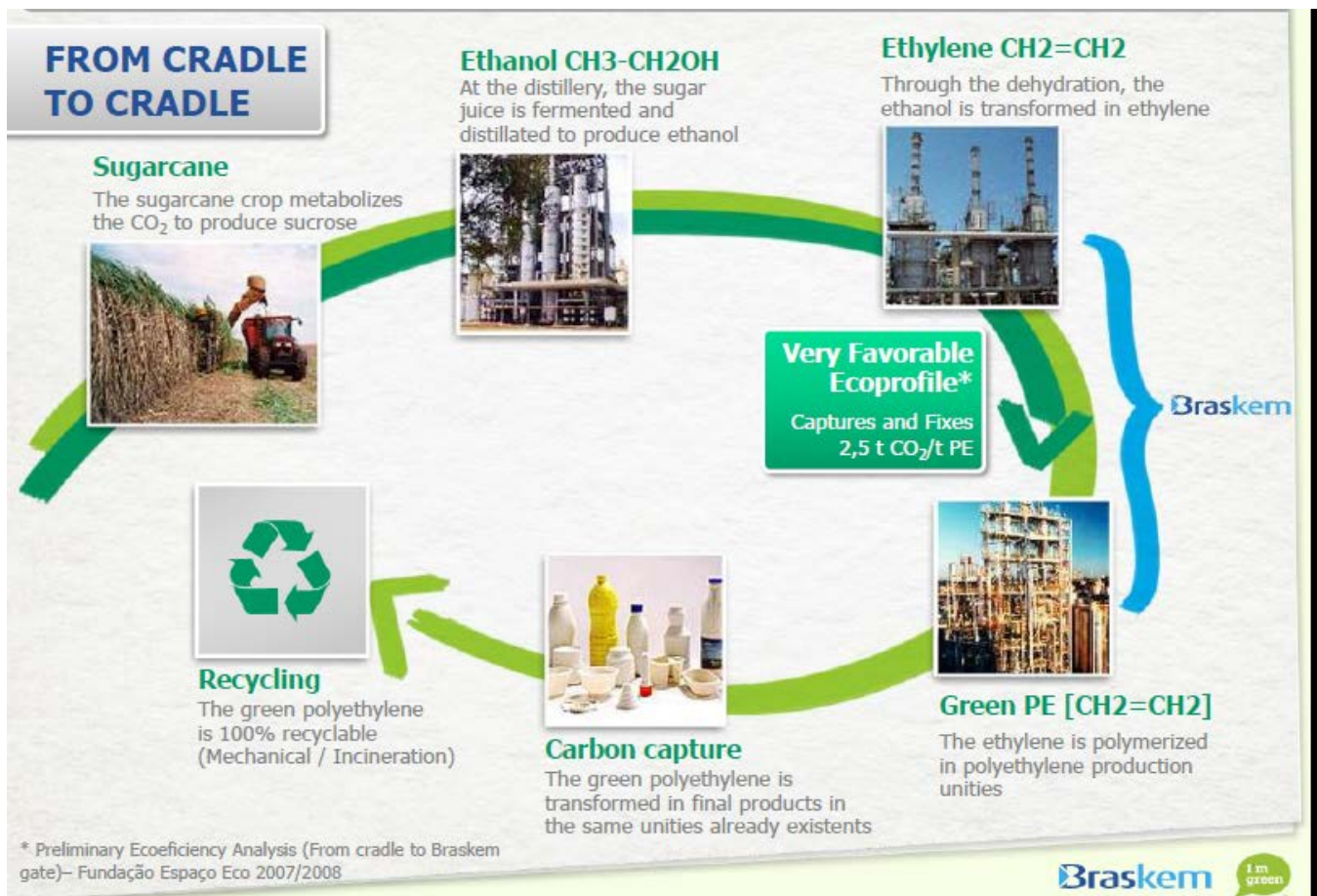
The V-Gard GREEN Helmet is negligibly lighter than a traditional V-Gard helmet.

9) **What is GHDPE?**

- GHDPE is a high-density polyethylene that can be produced from several types of plants, including corn, sugar beets or sugarcane. The GHDPE used to make the V-Gard GREEN helmets is produced from sugarcane. Sugarcane is a fast-growing plant cultivated in tropical climates, such as Brazil.
- In Brazil, sugarcane used to produce ethanol is grown on <1% of all arable land (i.e., land set aside specifically for growing crops).
- Sugarcane is harvested and sent to mills where it is distilled to produce ethanol. The ethanol is dehydrated (or the oxygen removed) to make ethylene, a simple carbon-hydrogen (CH₂) molecule. The CH₂ is then polymerized (or linked together) to form GHDPE.

10) How is GHDPE produced?

Presented below is the GHDPE Cycle:



11) How do V-Gard GREEN Helmets help the planet?

- Greenhouse gases, such as CO₂, absorb and hold heat in the atmosphere (the “greenhouse effect”). The greenhouse effect intensifies when fossil fuels are burned (and CO₂ is released), and/or deforestation occurs (and CO₂ increases because plants are no longer available to extract it from the atmosphere). This contributes to global warming, which, according to some scientists, is causing significant climate and weather changes. For example, one ton of polyethylene sourced from petrochemicals actually emits more than two pounds of carbon dioxide into the atmosphere¹. *By contrast, for every ton of GHDPE produced, 2.5 tons of carbon dioxide are captured from the atmosphere and the environment.*
- Sugarcane captures CO₂ from the atmosphere during its natural photosynthesis process, helping reduce the level of greenhouse gases.
- 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.

12) How much CO₂ is captured from the environment with each V-Gard GREEN helmet?

On average, the production of each V-Gard GREEN helmet removes at approximately 2 lbs. of CO₂ from the atmosphere, according the material supplier.

13) Are V-Gard GREEN Helmets recyclable?

Yes. V-Gard GREEN Helmets, like traditional V-Gard Helmets, are designed to stay out of landfills—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 Plastics” 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.

14) Is there any “green” third-party certification for V-Gard GREEN Helmets?

The GHDPE used in the manufacturing of the V-Gard GREEN 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 U.S. 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.

15) Can customers earn LEED credits if I used V-Gard GREEN Helmets on “green” jobsites?

The V-Gard GREEN Helmets can potentially contribute toward and strengthen a LEED project application if a narrative under the LEED application section titled “*Innovation in Design*” is submitted (www.usgbc.org/node/1732608).

Innovation in Design points are awarded to LEED projects that develop new solutions, employ new technologies, educate, or realize exemplary performance in another area. Innovation in Design points recognize design teams and projects for achieving exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in green building categories not specifically addressed by the LEED Green Building Rating System. As the world’s first helmet produced from renewable resources, the V-Gard GREEN Helmet demonstrates exemplary innovation in protecting both people and planet.

MSA has a V-Gard GREEN Helmet *Innovation in Design* Narrative Letter to help with any such application. Please contact MSA Customer Service at 1800-MSA-2222 for a copy of the Letter.

16) Has there been any industry or public recognition of MSA’s innovation?

Yes. Frost & Sullivan (F&S), a 50-year old global research organization consisting of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies, presented MSA with the “2013 Global New Product Innovation Leadership Award in Head Protection”. F&S’ independent analysis of the Head Protection Market indicated that MSA addressed the sustainability needs through its V-Gard® GREEN Helmets, helping reduce human interference on environmental balance. F&S indicated that with this highly commendable product innovation, MSA pioneered the concept of sustainable nature-inspired product development into the Personal Protective Equipment (PPE) industry.