Product Safety Assessment

DOW POWERHOUSE™ Solar Shingles


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Names
• DOW POWERHOUSE™ Solar Shingles
• POWERHOUSE Solar Shingles

Product Overview
• DOW POWERHOUSE™ Solar Shingles are fabricated articles. They are building-integrated photovoltaic roofing products that protect the home like standard shingles, with the added benefit of generating electricity to power the home. They are designed to be installed with standard asphalt shingles. For further details, see Product Description.
• DOW POWERHOUSE Solar Shingles are installed on commercial and residential roofs to capture solar energy and convert it into clean, electrical energy. For further details, see Product Uses.
• DOW POWERHOUSE Solar Shingles are installed only by authorized roofing contractors. Worker exposure is possible in a manufacturing facility or during product installation. For further details, see Exposure Potential.
• DOW POWERHOUSE Solar Shingles are fabricated articles and when intact are not considered to present a health risk. For further details, see Health Information.
• DOW POWERHOUSE Solar Shingles are fabricated articles and when intact are expected to be inert in the environment. Authorized dealers and installers have been trained on installation, repair, removal and disposal of DOW POWERHOUSE Solar Shingles. For further details, see Environmental Information.
• DOW POWERHOUSE Solar Shingles are chemically stable with no known physical hazards. For further details, see Physical Hazard Information.

Manufacture of Product
• Location – The Dow Chemical Company manufactures DOW POWERHOUSE™ Solar Shingles at facilities in Midland, Michigan, USA.
• Process – DOW POWERHOUSE Solar Shingles are manufactured using proprietary materials and Dow technology.
Product Safety Assessment: DOW POWERHOUSE™ Solar Shingles

Product Description
POWERHOUSE™ Solar Shingles are fabricated articles. They are roofing products that combine the performance and protection of a conventional asphalt roof with an integrated photovoltaic (PV) system that powers the home. They install flush to the roof for an aesthetically pleasing look, and are designed to integrate with standard asphalt roofing shingles.

DOW POWERHOUSE Solar Shingles are certified to perform as both a solar and roofing product, protecting a home from the elements while generating electricity. DOW POWERHOUSE Solar Shingles are thin, flexible and extremely durable. They withstand precipitation, temperature extremes, and the wear and tear associated with normal installation and use.

DOW POWERHOUSE Solar Shingles have received seven certifications for product performance and safety including three Underwriters Laboratories safety certifications for the solar module, fire, and uplift resistance; building code certification from the International Code Council Evaluation Service; International Electrotechnical Commission performance certification; California Energy Commission List of Eligible Equipment certification; and performance certification of ASTM wind uplift resistance.

DOW POWERHOUSE Solar Shingles generate electricity by integrating thin-film solar cells into the design of the roofing product. They use CIGS-based (copper-indium-gallium-diselenide) solar cells, which have the highest efficiencies of the thin-film technologies and have enabled Dow to develop this breakthrough, lightweight, durable, residential solar application. The DOW POWERHOUSE Solar Shingle System also incorporates an electrical connection system that eliminates the need for on-roof wiring.

Authorized dealer and installers have been trained on installation, repair, removal and disposal of DOW POWERHOUSE Solar Shingles.

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Product Uses
DOW POWERHOUSE™ Solar Shingles are used in residential roofing applications to capture solar energy and convert it to clean, direct-current (DC) electrical power. DC power produced from the shingles is converted to alternating current (AC) power by an inverter. This electricity is fed to the power grid via a net metering system.

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Exposure Potential
DOW POWERHOUSE™ Solar Shingles are manufactured for use on pitched, asphalt residential roofs. Based on the uses for these shingles, the public could be exposed through:

- **Workplace exposure** – DOW POWERHOUSE Solar Shingles are manufactured in closed systems using engineering controls that minimize release to the environment. Workers who produce these products may be exposed to components used to manufacture the product during maintenance, sampling, or testing. Facilities that manufacture these shingles have a thorough training program for employees and appropriate work processes and safety equipment in place to limit exposure. These products are intended to be installed by authorized roofing contractors only. Intact shingles are not considered to present a health or safety risk. If these shingles are damaged upon transport, installation, or use, authorized roofing contractors have been trained on the proper repair, removal and disposal of these articles. See [Health Information](#).

- **Consumer exposure to DOW POWERHOUSE Solar Shingles** – These products are intended to be installed only by authorized roofing contractors. Consumers may own a home that has DOW POWERHOUSE Solar Shingles installed on its roof. Intact shingles are not considered to present a risk to homeowners, the environment, or the surrounding community. If these shingles are damaged during use, contact Dow Customer Service at 855-DOW-SOLR (855-369-7657) for replacement recommendations. See [Health Information](#).

- **Environmental releases** – Due to the nature of DOW POWERHOUSE Solar Shingles, release to the environment is unlikely. Intact shingles are not considered to present a risk to homeowners, the environment, or the surrounding community. If these shingles are damaged upon installation or use, authorized roofing contractors have been trained on the proper repair, removal and disposal of these articles. DOW POWERHOUSE Solar Shingles should be disposed of according to all governmental regulations. Requirements may vary by location. See [Environmental, Health, and Physical Hazard Information](#).

- **Large release** – Due to the nature of DOW POWERHOUSE Solar Shingles, release to the environment is unlikely. Intact shingles are not considered to present a risk to homeowners, the environment, or the surrounding community. DOW POWERHOUSE Solar Shingles should be disposed of according to all governmental regulations. Requirements may vary by location. See [Environmental, Health, and Physical Hazard Information](#).

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In case of fire – Firefighters should follow standard procedures and use extinguishing media appropriate for the surrounding fire. See Environmental, Health, and Physical Hazard Information.

For more information, contact the Dow Customer Information Group.

Health Information
DOW POWERHOUSE™ Solar Shingles are fabricated articles and are not considered to present a health risk. If these products are damaged, eye or skin contact with fragments of this product or sharp surfaces may cause irritation through mechanical abrasion (scratch or poke to the skin or eye). If these shingles are damaged during use, building owners should contact Dow Customer Service at 855-DOW-SOLR (855-369-7657) for replacement recommendations.

For more information, contact the Dow Customer Information Group.

Environmental Information
DOW POWERHOUSE™ Solar Shingles are fabricated articles designed to resist weather. They have undergone extensive testing to ensure compliance with international building code standards. They are expected to be inert in the environment. Authorized dealers and installers have been trained on installation, repair, removal and disposal of DOW POWERHOUSE Solar Shingles. If these shingles are damaged during use, building owners should contact Dow Customer Service at 855-DOW-SOLR (855-369-7657) for replacement recommendations.

For more information, contact the Dow Customer Information Group.

Physical Hazard Information
As fabricated, DOW POWERHOUSE™ Solar Shingles are chemically stable with no known physical hazards. They are thermally stable at typical use temperatures. DOW POWERHOUSE Solar Shingles have undergone extensive testing to ensure compliance with international building code standards.

When installed per standard instructions, DOW POWERHOUSE Solar Shingles have a Class A fire rating, which is the most fire-resistant rating available.

For more information, contact the Dow Customer Information Group.

Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of DOW POWERHOUSE™ Solar Shingles. These regulations may vary by city, state, country, or geographic region. These products are intended to be installed, repaired, removed and disposed of by authorized roofing contractors only. If these shingles are damaged during use, building owners should contact Dow Customer Service at 855-DOW-SOLR (855-369-7657) for replacement recommendations.

Additional Information
• Contact Us (www.dowpowerhouse.com/contact/contact.htm)

For more business information about DOW POWERHOUSE™ Solar Shingles, visit Dow Solar at www.dowpowerhouse.com/.
NOTICES

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