

## DuPont Photovoltaic Solutions

DuPont is a leading technology supplier to the photovoltaic (PV) industry, with more than 25 years of experience in PV materials development, applications know-how, manufacturing expertise and global market access. DuPont Photovoltaic Solutions (DPVS) represents a broad and growing portfolio of innovations for the industry, developed by leveraging science from across the company, and working closely with strategic partners across the value chain. DPVS offerings are designed to increase the lifetime and efficiency of solar modules, and improve the productivity of PV module makers.

Our products are key to the manufacture of both crystalline silicon and thin film solar cells and modules. They include films, resins, encapsulation sheets, flexible substrates and photovoltaic metallizations, as well as high performance seals for solar cell manufacturing equipment, wet-etch additives for semiconductor texturing, and metallic sodium.

We continue to invest in both capacity expansions to support the explosive industry growth, and the development of new innovative technologies to address different applications within the industry.

DuPont has also made a corporate commitment to have at least ten percent of its power produced by renewable energy sources by 2010, some of which will be supplied through the installation of systems with solar generation. Today, more than five percent of the company's power is produced by renewable energy sources. DuPont has installed photovoltaic solar power systems for its R&D and business facilities in Wilmington, Del., Taoyuan, Taiwan, and Kauai, Hawaii, and is planning additional installations as examples of DuPont science and innovation enabling businesses and consumers to convert sunlight



directly into electricity. DuPont's largest PV solar installation at its Pioneer Hi-Bred Waimea Research Center in Kauai, Hawaii is comprised of 1,500 panels and is projected to generate 404,977 kilowatt hours (kwh) annually, offsetting 55% of the facility's electrical usage.

The company's offering for this market provides innovative business solutions to help meet the growing demand for renewable energy technology. Through science and technology, innovative technologies from DuPont enable solar modules to run more efficiently, last longer and provide safer and more environmentally sustainable solutions,

making solar possibilities into everyday realities, to provide energy for a thriving world.

### Facts about DuPont Businesses that Provide Materials to the Global PV Solar Industry:

- Seven DuPont businesses provide products for the Photovoltaic offering: Photovoltaic Fluoromaterials, Electronic Technologies, Packaging & Industrial Polymers, Engineering Polymers, DuPont Performance Elastomers, DuPont Teijin Films, and DuPont Chemical Solutions Enterprise.
- DuPont has research sites in the U.S., Switzerland, Japan, China, Taiwan, India, Belgium, and the U.K.
- DuPont has been at the forefront of innovation in the PV industry since its inception more than 25 years ago. Many of DuPont's products have set the industry standard and continue to lead with consistent high quality and proven performance.
- According to DuPont and industry estimates, the PV market has been impacted by the global economic downturn but is expected to grow by about 30% in 2010.

## The DuPont portfolio of innovative materials for photovoltaic modules and manufacturing

### A Front Sheet Materials

DuPont™ Teflon® films

### B Photovoltaic Encapsulants

DuPont™ Elvax® EVA resins  
DuPont™ PV5200 Series encapsulant sheets  
DuPont™ PV5300 Series encapsulant sheets

### C Photovoltaic Metallizations

DuPont™ Solamet® photovoltaic metallizations

### D Thin Film Substrates

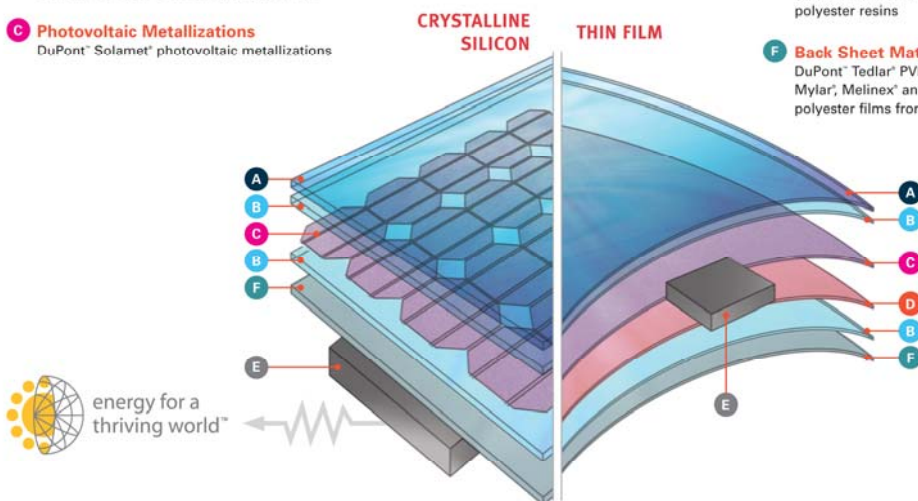
DuPont™ Kapton® polyimide films  
Teonex® PEN and Melinex® ST polyester films  
from DuPont Teijin Films™

### E Junction Box and Structural Parts

DuPont™ Rynite® PET thermoplastic  
polyester resins

### F Back Sheet Materials

DuPont™ Tedlar® PVF films  
Mylar®, Melinex® and Teijin® Teton®  
polyester films from DuPont Teijin Films™



### High Performance Seals for Cell Manufacturing Equipment

Kalrez® perfluoroelastomer parts from  
DuPont Performance Elastomers

### Wet-Etch Additives for PV Manufacturing

DuPont™ Zonyl® fluorosurfactants  
DuPont™ Capstone® fluorosurfactants



The miracles of science™

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## Facts about the DuPont Products Used in the Global PV Solar Industry:

- DuPont™ Elvax® EVA copolymer resins: cushion individual cells from impact and enables the transmission of sunlight to the cells.
- DuPont™ PV Encapsulants: ranging from soft to structural, clear DuPont™ PV5200 and PV5300 Series encapsulant sheets offer proven safety and laminating performance, and deliver long term protection for the most sensitive portions of PV modules.
- DuPont™ Teflon® fluoropolymer films for frontsheets and flexible panels: offer mechanical strength and durability against cracking, flexibility and nearly 100 percent transparency.
- DuPont™ Tedlar® polyvinyl fluoride films: deliver long lasting UV and weather-resistant backsheets.
- Mylar®, Melinex® and Teijin® Teton® PET films from DuPont Teijin Films: provide value adding, cost effective film solutions for backsheet laminates.
- DuPont™ Solamet® photovoltaic metallizations: increase the efficiency and yield of solar cells.
- DuPont™ Rynite® PET thermoplastic resins: increase safety, eliminate corrosion, and provide long lasting performance for junction boxes and structural components in harsh environments.
- DuPont™ Kapton® polyimide film for thin film substrates: provide excellent electrical and thermal properties to thin film modules.
- Teonex® PEN and Melinex® ST polyester films from DuPont Teijin Films: provide high temperature dimensional stability, clarity and UV protection for thin film deposition substrates and frontsheets.
- Kalrez® perfluoroelastomer parts from DuPont Performance Elastomers: provide excellent resistance to aggressive chemicals and high temperatures to help reduce the risk of unplanned maintenance.
- DuPont™ Zonyl and Capstone™ fluorosurfactants: provide unrivaled wetting aids in semiconductor texturing, offering etch control, reduced waste and improved cell efficiencies.
- DuPont™ Niapure® and Niapure® Select metallic sodium: enables alternative low cost manufacturing processes for polysilicon.

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