

PRESS RELEASE

Number 19

WACKER Showcases New Silicone Product Line for Photovoltaic Applications

Munich, June 25, 2009 – The Munich-based WACKER Group is expanding its existing silicone range by a new product line geared specifically to the needs of the solar industry. Marketed under the name ELASTOSIL[®] Solar, the line includes several silicone grades. The novel products include a UV-activated specialty silicone as well as pourable, highly translucent silicone elastomers for molding optical parts employed in high-concentration photovoltaic modules. All ELASTOSIL[®] Solar grades are resistant to weathering, radiation and heat, making them ideal for bonding, sealing, laminating and encapsulating photovoltaic modules and their electronic components.

ELASTOSIL[®] Solar silicone elastomers make for efficient and reliable execution of typical stages in module production. These include attaching solar cells to the support structures, bonding cover glass and frame components, and insulating and mounting electrical junction boxes. By virtue of their low elasticity modulus, ELASTOSIL[®] Solar silicones also reduce thermomechanical stresses in the part. Electrical components encapsulated in ELASTOSIL[®] are well-protected against moisture and corrosion.

Among the new ELASTOSIL[®] Solar products is ELASTOSIL[®] Solar 2120 UV encapsulant. This is a UV-activated silicone elastomer that cures at room temperature without any additional heat. The trick here

is that UV light triggers the crosslinking process. Curing of the silicone encapsulant at room temperature – until now a time-consuming process – is effected in just a few minutes.

WACKER now offers this innovative curing technology, which was first used successfully in its SEMICOSIL® UV series, in a silicone elastomer formulated specifically for the solar industry. The advantage of ELASTOSIL® Solar 2120 UV over conventional, high-temperature curing systems is its very short curing time which can be customized within a broad time frame and processing window. Thicknesses of several centimeters can be cured. Unlike epoxy- or acrylate-based UV-curing polymers, ELASTOSIL® Solar 2120 UV contains no photoinitiators. It therefore leaves neither ions nor free-radical decomposition products in the material.

ELASTOSIL® Solar 2120 UV is particularly suitable for encapsulating junction boxes. The translucent product is electrically insulating, resistant to weathering and UV radiation, and of low viscosity. The cured compound has a hardness of 40 Shore 00.

ELASTOSIL® Solar 3210 for High-Concentration PV Systems

High-concentration photovoltaic (HCPV) systems are an alternative to the conventional PV technology used in photovoltaic power plants. HCPV systems employ special lenses that concentrate sunlight and focus it onto high-performance cells. Much higher efficiencies are achieved in this way than with the usual solar modules.

WACKER has developed ELASTOSIL® Solar 3210 specifically for these high-performance modules. The two-part rubber is pourable

and is characterized by very good light permeability (transmission). It is thus ideally suited for the production of optical lenses and moldings, for example Fresnel lenses. ELASTOSIL[®] Solar 3210 cures fast and does not shrink, is easily demolded and shows high dimensional stability. It is of medium hardness (approx. 45 Shore) and, like all ELASTOSIL[®] Solar grades, is electrically insulating and resistant to weathering and UV.

WACKER at PV SEC

The Munich-based chemical company will be showcasing its new ELASTOSIL[®] Solar product line and other novel silicones at the European Photovoltaic Solar Energy Conference (PV SEC) from September 21–24 in Hamburg, Germany. “WACKER is a leading polysilicon manufacturer and enjoys an excellent reputation in the solar industry,” says WACKER SILICONES President Dr. Christoph von Plotho. “We intend to achieve an equally good reputation for our silicone elastomers, too. PV SEC is an excellent opportunity for us to show that our innovative silicone products and our comprehensive expertise make us a competent partner not only for high-tech branches such as the automotive and space industries, but also for the fast-growing PV industry.”



Junction box (without connections and bypass diodes) for a photovoltaic module, encapsulated in ELASTOSIL[®] Solar 2120 UV. The silicone is characterized by fast curing times at room temperature. Curing is initiated by UV light and not, as with conventional silicone elastomers, by heat. (Photo: Wacker Chemie AG)



Glass disk and, molded onto it, a Fresnel lens made of ELASTOSIL[®] Solar 3210. Lenses of this kind are employed in high-concentration photovoltaic modules. They are characterized by very high efficiency. (Photo: Wacker Chemie AG)

Note:

You can download these pictures at:

<http://www.wacker.com/pressreleases>

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The company in brief:

WACKER is a globally active chemical company with some 15,900 employees and annual sales of around €4.3 billion (2008).

WACKER has 27 production sites and over 100 sales offices worldwide.

WACKER SILICONES

Silicone fluids, emulsions, rubber and resins; silanes; pyrogenic silicas; thermoplastic silicone elastomers

WACKER POLYMERS

Polyvinyl acetate and vinyl acetate copolymers in the form of dispersible polymer powders, dispersions and solid resins used as binders for construction chemicals, coatings, adhesives, paints, plasters and nonwovens

WACKER FINE CHEMICALS

Fine chemicals, biologics and other biotech products such as cyclodextrins and cysteine

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaics industries; solar wafers

Siltronic

Hyperpure silicon wafers and monocrystals for semiconductor devices