

Uninwell Paste&Targets for Photovoltaic cells

1 Carefreer Sputtering targets for PV cells

The Thin Film Materials Division is one of the world's leading producers and developers of sputtering targets for use in the field of thin film technology. The Division is able to supply targets for all of the key layer systems used in photovoltaic applications. In close co-operation with photovoltaic customers and plant manufacturers the Division has already succeeded in establishing a large number of innovative planar and rotatable targets on the market.

Standards have risen considerably, and most particularly in the thin film photovoltaic industry, from a technical as well as an economical point of view. The Thin Film Materials Division offers direct solutions to suit the customer. Their ability to convince is based on many years experience of innovation and development, in-depth vertical range production know-how and competent advice on applicational technology.

CIGS targets :ITO,In, ZnO,ZAO,CuGa, Mo, CIG, Culn, ZnAl

a-SI targets :ZnO, ZAO, Al, Mo,NiV, Ag

CdTe/CdS targets: ITO, Sn, Mo, NiV

Wafer based targets: Si, SISPA, Al, Ag

2 Alwaystone Conductor Pastes for PV Cells

The Thick Film Materials Division of Uninwell International is market leader in electronic materials such as thick film pastes and materials for passive components and hybrid circuits, as well as advanced materials such as LTCC materials and photo-etchable pastes.

Due to the development of conductive pastes, this expertise can be used in the photovoltaic industry.

Uninwell® Alwaystone™ is the brand name for products that are used to apply electrical contacts to solar cells of the first photovoltaic generation (wafer based cells).

The conductive pastes are based on silver. The Uninwell Solarcare series is cadmium-free and the printing properties are excellent. After firing, the series stands out due to its high efficiency and fill factor along with excellent line resolution. Lead-free formulations are also available.

AS-999-900 silver pastes serie

AS -999-800 silver pastes serie

AS -999-700 silver pastes serie

AS -999-600 silver pastes serie

AS -999-400 silver pastes serie

AS -888-800 Ag/Al pastes serie

AS -888-400 Ag/Al pastes serie

AS -777-800 Al pastes serie

AS -777-400Al pastes serie

3 Solarcare Conductor Pastes for Thin Film PV Cells

Uninwell has now introduced a new range of low temperature screen printable pastes

for all major thin film PV applications enabling more cost effective manufacturing of solar cells with improved efficiency and yield.

The main purpose of the low temperature curing Ag Silver paste is for use as a front side current collector grid and bus bar to reduce the resistive losses due to the relatively low conductivity of the transparent conductive oxide (TCO) layer used in thin film PV devices.

Uninwell® Solarcare™ can be used on both rigid (glass, silicon) and flexible (polyimide, polyester, stainless steel) substrates.

Thin Film Applications

A. Amorphous Silicon (a-Si) / Microcrystalline Silicon ($\mu\text{c-Si}$) - Ag Silver grid & bus bar

- SC-666-80serie
- SC -666-120serie
- SC -666-150serie
- SC-666-180serie
- SC -666-200serie

B. Copper Indium Gallium Selenium (CIGS) - Ag Silver grid & bus bar

- SC-666-80serie
- SC -666-120serie
- SC -666-150serie
- SC-666-180serie
- SC -666-200serie

C. Heterojunction - Ag Silver grid & bus bar

- SC-666-80serie
- SC -666-120serie
- SC -666-150serie
- SC-666-180serie
- SC -666-200serie

D. Cadmium Telluride (CdTe) - Carbon ink (back contact)

- SC-11XX serie
- SC-12XX serie

4 Alwaystone&Solarcare Conductor Pastes for CPV Cells

- SC-666-25 serie
- SC-666-150 serie
- AS-61XX serie

Stated importantly:

Uninwell®, Breakover-quick®, Canano®, Solarcare®, AlwayStone®, Bestcare®, Fastestone®, AnyFaster®, Fitcare®, Very high conductive®, Anyhighbond®, Carefreer®, The silver of science™, The conductive of science™, The adhesive of science™, The carefree of science™, The paste of science™, The target of science™, The nanomaterials of science™ are registered trademark of Uninwell International LTD.