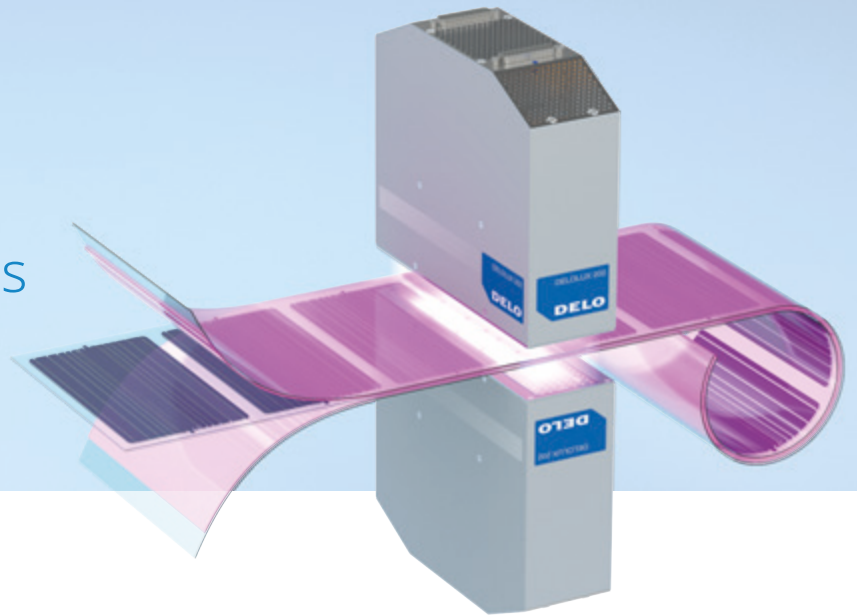


# HIGH-BARRIER ENCAPSULANTS for thin-film electronics and solar cells



## Low-permeation adhesives

Many of the materials used in organic and perovskite-based photovoltaic cells are sensitive to humidity and oxygen. Therefore, devices are typically encapsulated by means of e.g. glass or barrier films.

However, to reduce the unused area around the active structure, sufficient protection against side ingress is generally required.

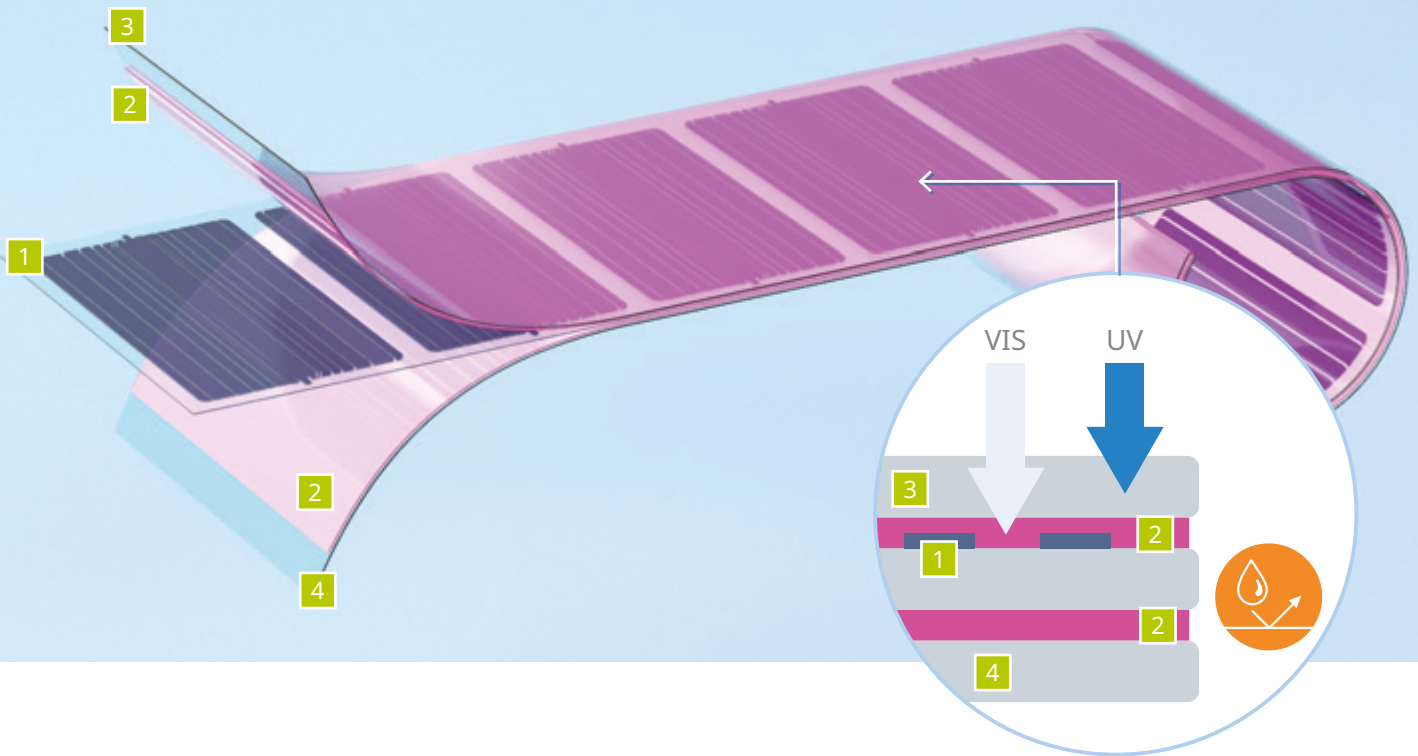
DELO LP (Low Permeation) adhesives offer lowest WVTR (Water Vapor Transmission Rate) values and have been successfully used for years. The latest generation of adhesives offers a good chemical compatibility to organic and perovskite-based cell architectures.

The figure above shows a curing process with DELOLUX 202 LED lamps.

## Your benefits

<b>Low WVTR</b>	› Efficient protection against humidity	› Long lifetime
<b>Fast curing</b>	› Fast in-line process with accompanying LED lamp portfolio	› Fast and cost-efficient process
<b>High optical quality</b>	› Transparent for broad wavelength spectrum	› High efficiency
<b>Good chemical compatibility</b>	› Verified at several cell architectures like perovskite solar cells	› High and stable efficiency

Lamination of humidity-sensitive thin-film electronics **1** with LP adhesive **2**, for example perovskite solar cells, between two barrier films (**3** and **4**).



## Adhesive properties

- › One-component, solvent-free adhesives with **low WVTR** values
- › Fast in-line curing (< 10 s) suitable for **roll-to-roll fabrication**
- › **Light curing** at 400 nm or 365 nm
- › **Adjusted viscosities** suitable for common dispensing techniques
- › **High transparency** in typical layer thicknesses
- › **Good adhesion** to typical barrier films
- › **Dual-curing** products on request

## Application areas

- › Full-area lamination, e. g. for perovskite or organic-based solar cells, OLED applications
- › Edge sealing, e. g. for rigid solar modules
- › Other flexible or rigid devices sensitive to humidity

Discuss your project and your requirements with our experts:

[renewable-energy-experts@DELO.de](mailto:renewable-energy-experts@DELO.de)



# DELO

DELO Industrial Adhesives

China | Czechia | France | Germany HQ | Italy | Japan  
Korea | Malaysia | Singapore | Thailand | USA

© DELO – This brochure including any and all parts is protected by copyright. Any use not expressly permitted by the Urheberrechtsgesetz (German Copyright Act) shall require DELO's written consent. This shall apply without limitation to reproductions, duplications, disseminations, adaptations, translations and microfilms as well as to the recording, processing, duplication and /or dissemination by electronic means.

[www.DELO-adhesives.com](http://www.DELO-adhesives.com)



07 / 24