



Edge Isolation + PSG Etching

Single-sided edge isolation for maximum efficiency

The Edge Isolation + PSG Etching Inline System fully automatically achieves a perfect edge isolation. The transport system developed by SCHMID especially for edge isolation ensures low chemistry consumption. In combination with the patented water mask the emitter is optimally isolated.

Details

The Edge Isolation + PSG Etching Inline System combines several process steps in one system with modular design. On the one hand the emitter layer on the rearside of the wafer generated during the diffusion process is unilaterally isolated from the front side of the wafer in order to prevent malfunction of the solar cell. On the other hand the phosphorous silicate glass (PSG) is removed from the wafer surface.

During the edge isolation the emitter is protected by the water mask developed and patented by SCHMID. Special profiled transport rollers ensure that the chemistry comes into contact exclusively with the rearside, and therefore little chemistry is consumed.

For the etching of the phosphorus silicate glass special holding-down shafts are used instead of shafts fitted with O-rings. These do not leave impressions on the wafers. In addition, the modified conveyor allows easy cleaning of the shafts. Therefore, organic pollution of the wafers by the transport system is excluded.

The rinsing between the individual process steps ensures minimum drag-out. SCHMID's multiple cascade technology reduces the consumption of DI water. Thanks to the modular design of the inline system, throughput and process steps can be adapted to customers' needs. In addition, special cleaning processes are available for PERC cells.

Technical Data

Throughput:

- 3,600 wafers/h (5 tracks)
- 7,200 wafers/h (10 tracks)
- Further throughputs configurable

Wafer Size:

- 156 - 161,7 mm

Breakage rate:

- < 0,1 %

Process media:

- HF
- KOH
- HNO₃

Automation:

- Optional Loader and Unloader

Benefits

- Minimum drag-out
- Patented water mask
- Stable process without cooling unit
- Shortest maintenance times due to good accessibility and easy cleaning
- Special cleaning processes for PERC-cells available
- Can be combined with selective emitter technology

