

# TMAI delivery systems for PERC

CHEM'BOT supplies precursor chemicals to bubblers or vaporizers, direct liquid injections or on-board buffer containers at deposition tools from all OEM's.

More than a decade of experience ensures ultra-high purity liquid supply - safely and with the SEMPA quality promise.

## Uninterrupted supply

PRO SOLAR is a professional dual container liquid delivery system for seamless TMAI (Trimethylaluminum) supply. Within the system two precursor vessels are installed, whereas one cylinder is supplying while the other cylinder is standby for automatic switch over once the other cylinder is detected empty. This ensure seamless, uninterrupted supply to your process tools.

## Designed for solar industry

The system is specifically designed for the application in the solar industry. Design and components are precisely chosen to perfectly meet the safety requirements for the supply of pyrophoric TMAI. The standard cabinet can safely hold two standard TMAI transport vessels up to a total of ~160 kg TMAI. Larger systems are available upon request.

## Customized to your needs

PRO SOLAR is designed to safely and efficiently supply TMAI to the deposition tools. The system can furthermore be adapted very precisely to your requirements through a variety of available options.



## PRO SOLAR Features



### Safety is our primary concern

On safety, SEMPA has long year experience with pyrophoric and toxic substances to bring best practices on safety design and procedures to our clients. The systems are designed to minimize spill – welded connections where possible, dip tubes rather than bottom outlets, automatic pressure release functionality in case of spill detection.

The safety setup includes active (smoke and UV/IR flame sensors) as well as passive (collection pan for unintentional spills filled with absorbent material such as vermiculite) safety systems.

### Fully automatic procedures to increase operator safety

The system is fully programmed to automatically perform supply and routine procedures such as source tank exchange. Under normal supply conditions, the system automatically provides continuous TMAI supply to maintain supply pressure/flow without any operator intervention until the source tank is empty. Upon source tank empty condition, the operator can then start automatic tank exchange program to safely change the source tank at a later time.

Please contact us to customize your CHEM'BOT PRO SOLAR. Our experienced engineers will be happy to assist you. Visit us at [www.sempa.de](http://www.sempa.de) or get in touch through [sales@sempa.de](mailto:sales@sempa.de)

## Technical Data

### Dimension:

1800 (w) x 2250 (h) x 600 (d)

Can hold two TMAI vessels up to 28 gallons

### Weight:

~250 kg

### Electrical Connection:

1 x 110 - 240 V-AC

50/60 Hz NSV

### Inlets:

1 x 1/4" VCR Purge gas Inlet (1-6 bar)

1 x 1/4" VCR Push gas Inlet (1-6 bar) OPTIONAL

1 x 1/4" Swagelok Connection dry pneumatic air (4-7 bar)

1 x 1/2" G Sprinkler (2-3 bar)

### Outlets:

1 x 1/4" male VCR Process Line

1 x 1/2" male VCR Vacuum

1 x KF25 Exhaust

