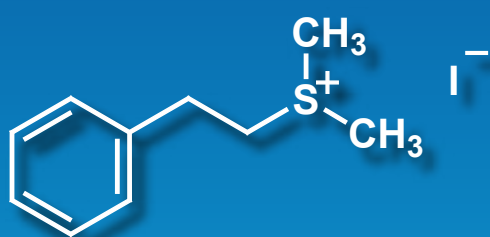


New

# Surface Treatment Reagent for Perovskite Solar Cells

## DMPESI



**DMPESI**  
1g / 5g  
[D6365]

### Advantages

- Stronger bonding ability to perovskite surface than PEAI (= 2-Phenylethylamine Hydroiodide) <sup>1)</sup>
- Suppresses phase transition of FAPbI<sub>3</sub> from  $\alpha$  phase to  $\delta$  phase
- Improves device stability under high temperature and humidity or light soaking conditions by the suppression of ion migration and the influence of external atmosphere
- Low water content (<200 ppm)

Superior PCE and device stability are realized by surface treatment of perovskite layer with DMPESI.

#### Device Structure

Au
Spiro-OMeTAD
<b>DMPESI</b>
Perovskite (FAPbI <sub>3</sub> ) mesoporous TiO <sub>2</sub>
Compact TiO <sub>2</sub>
FTO/Glass

#### Performance Comparison of Perovskite Solar Cells

Condition	PCE (%)	Stability (85 °C, 85% R. H.)	Stability (MPPT)
with DMPESI	23.32	>95% (1000 h)	>99% (4500 h)
without DMPESI	21.65	~70% (1000 h)	~80% (1500 h)

Reference 1) J. Suo, B. Yang, E. Mosconi, A. Hagfeldt, et al., *Nat. Energy* **2024**, 9, 172. <https://doi.org/10.1038/s41560-023-01421-6>

# Surface Treatment Reagent for Perovskite Solar Cells: DMPESI

## Related Products

<b>Formamidine Hydroiodide (=FAI) (99.99%, trace metals basis) [for Perovskite precursor]</b>	1g / 5g / 25g [F1263]
<b>Methylamine Hydroiodide (= MAI) (Low water content)</b>	1g / 5g / 25g / 100g [M2556]
<b>2-Phenylethylamine Hydroiodide (= PEAI)</b>	1g / 5g [P2213]
<b>Spiro-OMeTAD</b>	1g / 5g [T3672]
<b>Lithium Bis(trifluoromethanesulfonyl)imide (= LiTFSI)</b>	25g / 250g [B2542]
<b>4-tert-Butylpyridine</b>	5g / 25g [B0388]
<b>TOP-HTM-<math>\alpha</math>1</b>	1g / 5g / 25g [B5672]
<b>TOP-HTM-<math>\alpha</math>2</b>	1g / 5g / 25g [T3722]
<b>Lead(II) Iodide (99.99%, trace metals basis) [for Perovskite precursor]</b>	1g / 5g / 25g / 100g / 1kg [L0279]
<b>Lead(II) Bromide [for Perovskite precursor]</b>	1g / 5g / 25g [L0288]
<b>Lead(II) Chloride (purified by sublimation) [for Perovskite precursor]</b>	1g / 5g [L0291]
<b>Lead(II) Chloride [for Perovskite precursor]</b>	1g / 5g / 25g [L0292]

For further information please refer to our website at [www.TCIchemicals.com](http://www.TCIchemicals.com).



TCI solar cell



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