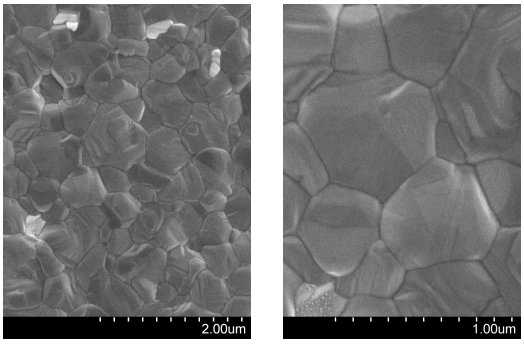
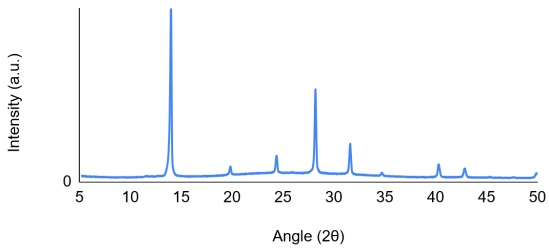
Product Technical Data Sheet

Solar Ink™ Evolved (Product ID: SPI-0002)

Specifications and Properties	
Perovskite type	Mixed halide, Mixed cation
Precursor materials	Formamidinium Iodide, Lead Iodide, Methylammonium Bromide, Lead Bromide, Methylammonium Chloride
Solvents	GBL, 1-PrOH, AcOH
Appearance	Yellow liquid
Shelf life	up to 30 days
Optical band gap	1.4-1.6 eV
Device efficiency	up to 16% (device architecture and size dependent)
Perovskite layer	
Perovskite crystallinity	

Revision date: Feb 24, 2023

Storage and handling conditions

- keep ink container tightly closed when not in use
- keep in dark place to avoid light exposure
- store and handle at 20℃ - 25℃ and humidity <30%

Processing parameters in air at 20℃-25℃

- Apply ink to a cleaned substrate via spin-coating
    - Determine substrate cleaning method for best wettability
    - Ink volume depends on substrate size
- Dip the ink coated substrate in anti-solvent (diethyl ether) for 40s
- Transfer substrate to hot plate, anneal at 150℃ for 3 min
- Expect color change after perovskite film crystallization
- Expected dry film thickness 300-500 nm

Testing

- Verify perovskite film quality by SEM and XRD

Device architecture

- Solar Ink has only been verified for the following device architecture, without any encapsulation of the device:
    - Glass/ITO/SnO2/Perovskite Ink/Spiro-OMeTAD/Au

Solar Ink™ has been evaluated with a specific device architecture.
In the process of evaluating Solar Ink™ with your coating method and within your device architecture, please reach out to Solaires if you encounter any difficulties in processing or unexpected results.

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