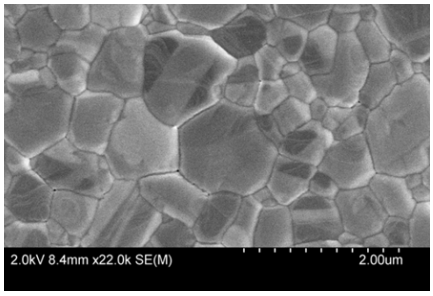
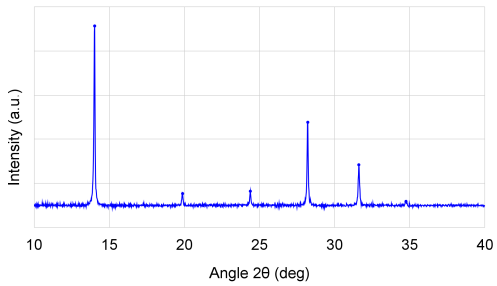
Product Technical Data Sheet

Solar Ink™ (Product ID: SPI-0001)

Specifications and Properties	
Perovskite type	Mixed halide, Mixed cation
Precursor materials	Formamidinium Iodide, Lead Iodide, Methylammonium Bromide, Lead Bromide, Methylammonium Chloride
Solvents	DMF, NMP
Appearance	Yellow liquid
Shelf life	~60 days
Optical band gap	1.4-1.6 eV
Device efficiency	Up to 20% (device architecture and size dependent)
Perovskite layer	
Perovskite crystallinity	

Revision date: Jan 4, 2023

Storage conditions

- keep ink container tightly closed when not in use
- keep in dark place to avoid light exposure
- store 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

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

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