

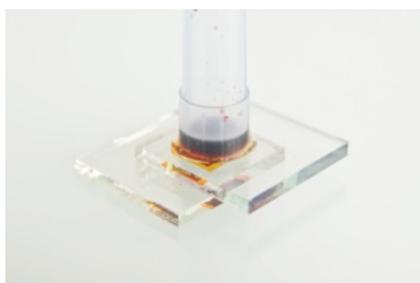
Iodolyte HI-30

State-Of-The-Art Electrolyte for Very High Performance Assessment



For researchers and industries who study or manufacture Dye Solar Cells, Iodolyte HI-30 is a high performance volatile electrolyte that will help maximize the performance of your dye-sensitized solar cells.

This product is of the highest quality and has been tested and proven in real solar cells.



Characteristics

Aspect	brown liquid
Redox Couple	iodide/tri-iodide
Redox Concentration	30 mM
Additives	ionic liquid, lithium salt, pyridine derivative
Solvent	acetonitrile
HS Code	2801.2000

The research leading to this product has received funding from the European Union Seventh Framework Programme [FP7/2007- 2013] under grant agreement n° 227057, FP7-ENERGY-NMP-2008-1, Project INNOVASOL.

Retail Quantities

10 mL	ref. 35411
20 mL	ref. 35421
50 mL	ref. 35451
100 mL	ref. 35412
200 mL	ref. 35422
500 mL	ref. 35452
1 L	ref. 35413

Pricing on product page:

solx.ch/iodohi30

How to Order

Please visit our webshop at shop.solaronix.com, or send us an e-mail or fax indicating your desired products.

Bulk Supply

In addition to the retail quantities listed above, Iodolyte HI-30 is also available in bulk for industrial purpose. Inquiries are welcome!

USAGE

A few drops of Iodolyte HI-30 are typically used to fill the space between the photo-anode and cathode of small surface area test cells. For larger cells modules, more electrolyte is necessary. The filling operation may be performed with a single filling hole by vacuum back-filling using a vacuum chamber or our Vac'n'Fill Syringe. Alternatively, two filling holes can be used to inject and draw through the electrolyte.

For small cells and a single filling hole: Place a drop of electrolyte on the filling hole and place the cell in a vacuum chamber. Evacuate the chamber paying close attention to prevent the volatile electrolyte from boiling. Before the solvent starts to evaporate, evidenced by boiling, break the vacuum and expose the chamber to ambient pressure. The vacuum formed inside the cell will pull the electrolyte into the cell. Alternatively use the Vac'n'Fill Syringe as described in the accompanying literature.

For larger cells and modules with a single filling hole it is necessary to place a reservoir over the filling hole containing ca. 0.5 mL of electrolyte solution, depending on the size of the cells in the module. A blunted pipette tip (cut into a cylinder with two open ends) attached with hot-melt glue works well for this application.

Common Pitfalls

Iodolyte HI-30 is a high performance electrolyte based on a low viscosity, volatile solvent. Special care should be taken to avoid excessive solvent evaporation during vacuum back-filling.

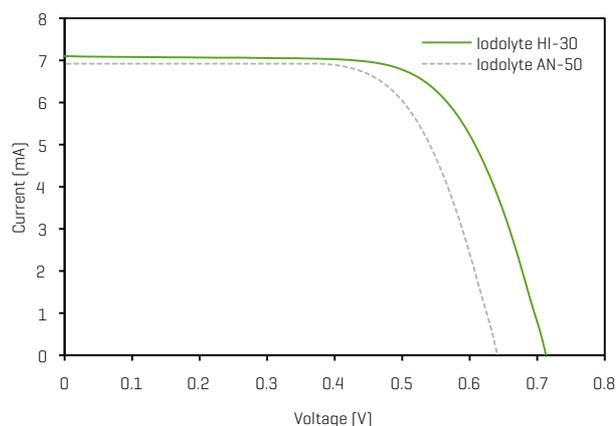
When closing the filling hole extra care is necessary. It is imperative that the surface of the glass around the filling hole is absolutely clean and completely free of any traces of electrolyte solution which will inhibit the adhesion of Meltonix sealing films.

EXAMPLE

Typical Performances of Iodolyte HI-30

Several 36 mm² titania photo-anodes were prepared with 3 prints of Ti-Nanoxide T/SP and 1 print of Ti-Nanoxide R/SP on TC022-7 glass substrates. The electrodes were treated with TiCl₄ and stained in a solution of Ruthenizer 535-bisTBA with chenodeoxycholic acid [1:10]. Platinum coated cathodes were prepared on separate TC022-7 substrates with a layer of Platisol T. The anodes and cathodes were laminated together using Meltonix 1170-60 and the solar cells were vacuum back-filled with Iodolyte HI-30 or Iodolyte AN-50 through a hole in the cathode using a Vac'n'Fill Syringe. The filling holes was then sealed with Meltonix 1170-60 and a thin glass circle of 6 mm diameter.

The resulting solar cells were placed under 1 sun illumination using a calibrated Solaronix Solixon Class-A solar simulator, and equipped with an adequate mask to avoid over-illumination, yielding the following averaged current-voltage curve and tabulated results.



	Iodolyte AN-50	Iodolyte HI-30
V_{oc}	641 mV	712 mV
J_{sc}	19.25 mA/cm ²	19.73 mA/cm ²
FF	0.69	0.69
Eff.	8.5 %	9.6 %

STORAGE AND SAFETY

Storage

Store the product in its original container, upright and tightly sealed. Keep in a dry place at room temperature away from light exposure.

The product is not known to degrade when stored properly. Consider filling the container with inert gas for long term storage.

Avoid leaving the container open unnecessarily.

Safety

Iodolyte HI-30 is for research and development use only and is meant to be manipulated by adequately trained personnel. Ensure good ventilation of the workplace, and wear suitable protective equipment.



Signal word: Warning

For a complete description of safety measures, please refer to the Material Safety Datasheet (MSDS) of Iodolyte HI-30.

solaronix.com/msds/

RELATED PRODUCTS

Cited in This Document

- Chenodeoxycholic Acid, staining additive
- TCO22-7, 7 ohm/sq FTO-coated glass substrate.
- Ti-Nanoxide T/SP, screen-printable titania nanoparticles paste.
- Ti Nanoxide R/SP, screen-printable reflective titania paste.
- Platisol T, platinum precursor solution.
- Iodolyte AN-50, low viscosity benchmarking electrolyte.
- Meltonix 1170-60, hot-melt sealing films.
- Solixon, continuous illumination solar simulators
- Vac'n'Fill Syringe, Solaronix' original tool for electrolyte filling.

Consider Also

- Iodolyte AN-50, low viscosity benchmarking electrolyte.
- Iodolyte Z-50, ultimate long term performance electrolyte.
- Mosalyte TDE-250, high performance non-volatile electrolyte.
- Vac'n'Fill Syringe, Solaronix' original tool for electrolyte filling.
- Meltonix 1170-60, hot-melt sealing films.

Find Out More

Visit the Chenodeoxycholic Acid product page for more information: solix.ch/iodohi30

How to Order

Please visit our webshop at shop.solaronix.com, or send us an e-mail or fax indicating your desired products.

Feedback

Do you have any comments or suggestions? Help us improve this document, contact us at materials@solaronix.com

