



SOLARONIX



SOLARONIX MATERIALS

Supplier of specialty chemicals and materials,
Licensee of EPFL for Dye Solar Cell technology since 1994,
we deliver the components used for Perovskite and Dye Solar Cell
fabrication to researchers and industries worldwide.

INNOVATIVE SOLUTIONS FOR SOLAR PROFESSIONALS

ABOUT US

Solaronix is a Swiss company founded in 1993 serving a worldwide customer base with an end-to-end expertise in hybrid organic-inorganic photovoltaics, starting with the supply of specialty materials, up to the development of solar cell fabrication processes.

The company originally specialized in nanocrystalline Dye-sensitized Solar Cells, and expanded nowadays to the industrialization of metal-halide Perovskite Solar Cells.

Driven by these pioneering works, we are designing, selecting, and producing materials, chemicals, and kits aiming to make research and development easier for our customers.

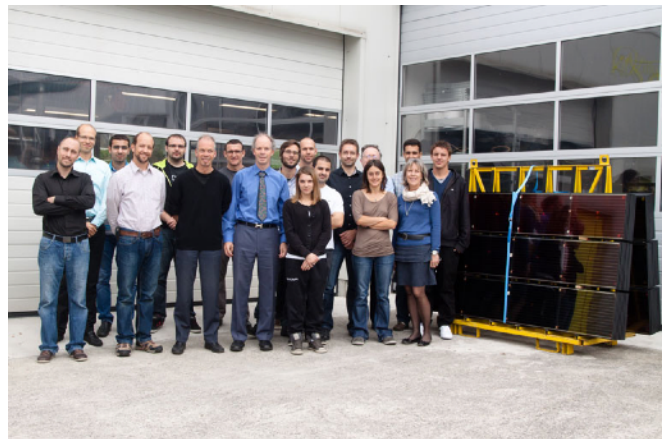
You will find in this brochure all of the materials to fabricate classic Dye-sensitized Solar Cells, as well as record-breaking Perovskite Solar Cells.

Wish to all of our customers and partners a brilliant success in exploring 21st century photovoltaic technologies.

HOW TO ORDER

Should you like to place an order or ask for a quotation, please navigate to our webshop at shop.solaronix.com.

If you so prefer, you can also call us at +41 21 821 22 80, or mail us to info@solaronix.com with the desired items and quantities.



HEAR FROM US

Get updated a few times per year with our important news and product releases.

Stay tuned and sign up at solaronix.com/hearfromus/

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Selection of Items

Ti-Nanoxide

Titanium Dioxide Pastes & Inks

The Ti-Nanoxide products are a family of formulations of titanium dioxide particles, nanoparticles, and organotitanates. They can be used for the fabrication of titania photo-electrodes and are perfectly suited for Perovskite Solar Cell and Dye Solar Cell applications.

In Dye Solar Cells, the photo-anode consist of a mesoporous layer of titanium dioxide nanoparticles, which can be further stained with one of our premium sensitizing dyes. In Perovskite Solar Cells, the photo-anode is made of a compact titania layer topped by a mesoporous layer of the same which acts as a scaffold to host perovskite.

The formulations of our products have been developed over 20 years utilizing close interaction with customers and partners. This has led to the most comprehensive offering of titania pastes available.

We use proven in-house fabrication processes that proudly continue to serve research and industrial uses. Solaronix' nanoparticle manufacturing allows us to precisely control crystal growth and anatase phase selectivity. We produce targeted particle sizes which enable us to tune transparency and porosity of the resulting titanium dioxide layers.



For Screen Printing, /SP Series

TRANSPARENT ACTIVE LAYER

Ti-Nanoxide T/SP

Highly dispersed titania nanoparticle paste for the deposition of transparent active mesoporous layers.

The sintered films feature a very high surface area ensuring efficient dye loading.

Resulting layer: transparent

Anatase titania particles: 15-20 nm

Diffusing titania particles: none

Concentration: ~18wt%

Vehicle: terpineol, organic binders

10 g	ref. 14411	CHF	61
20 g	ref. 14421	CHF	109
50 g	ref. 14451	CHF	238
100 g	ref. 14412	CHF	429
200 g	ref. 14422	CHF	772
500 g	ref. 14452	CHF	1,689
1 kg	ref. 14413	CHF	3,040

REFLECTIVE ADD-ON LAYER

Ti-Nanoxide R/SP

Large titania particle paste for the deposition of a reflective layer atop pre-existing layers.

The reflective sintered layer enhances light absorption of the underneath mesoporous active layers.

Resulting layer: reflective

Anatase titania particles: none

Diffusing titania particles: >100 nm

Concentration: ~18wt%

Vehicle: terpineol, organic binders

10 g	ref. 14811	CHF	81
20 g	ref. 14821	CHF	145
50 g	ref. 14851	CHF	318
100 g	ref. 14812	CHF	572
200 g	ref. 14822	CHF	1,030
500 g	ref. 14852	CHF	2,254
1 kg	ref. 14813	CHF	4,507

DIFFUSING ACTIVE LAYER

Ti-Nanoxide D/SP

Mixed titania particle paste for the deposition of active opaque titania layers in one material.

The optimal mixing of large and small nanoparticles ensures both very high surface area and light diffusion.

Resulting layer: *opaque*

Anatase titania particles: 15-20 nm

Diffusing titania particles: >100 nm

Concentration: ~18wt%

Vehicle: *terpineol, organic binders*

10 g	ref. 14111	CHF	66
20 g	ref. 14121	CHF	119
50 g	ref. 14151	CHF	260
100 g	ref. 14112	CHF	467
200 g	ref. 14122	CHF	841
500 g	ref. 14152	CHF	1,840
1 kg	ref. 14113	CHF	3,311

BLOCKING LAYER

Ti-Nanoxide BL/SP

A screen printing paste for the deposition of a thin and dense blocking layer of titanium dioxide.

Printing on a 61-64 polyester mesh typically yields a 50-100 nm thick layer after firing at 500°C for 45 minutes.

Resulting layer: *compact, transparent*

Content: *organotitanate*

Concentration: ~2.6wt%

Vehicle: *terpineol, glycols, organic binders*

10 g	ref. 17111	CHF	24
20 g	ref. 17121	CHF	44
50 g	ref. 17151	CHF	98
100 g	ref. 17112	CHF	177
200 g	ref. 17122	CHF	318
500 g	ref. 17152	CHF	699
1 kg	ref. 17113	CHF	1,259

FOR SOLID-STATE AND PEROVSKITE SOLAR CELLS

Ti-Nanoxide BL150/SP

Our latest paste for the making of electron-selective layers by screen printing, specifically formulated for monolithic perovskite solar cell architectures, where it's best employed with Ti-Nanoxide T165/SP, Zr-Nanoxide ZT/SP, and Elcocarb B/SP.

Printing on a 150-30 polyester mesh typically yields a 50-100 nm thick layer after firing at 500°C for 45 minutes.

Resulting layer: *compact, transparent*

Content: *organotitanate*

Concentration: ~3.9wt%

Vehicle: *terpineol, glycols, organic binders*

10 g	ref. 17811	CHF	24
20 g	ref. 17821	CHF	44
50 g	ref. 17851	CHF	98
100 g	ref. 17812	CHF	177
200 g	ref. 17822	CHF	318
500 g	ref. 17852	CHF	699
1 kg	ref. 17813	CHF	1,259

Ti-Nanoxide T165/SP

Ti-Nanoxide T165/SP is a titania nanoparticle paste specifically adapted to the making of titania scaffolds in carbon-based monolithic perovskite solar cells, where it's best used with Ti-Nanoxide BL150/SP, Zr-Nanoxide ZT/SP, and Elcocarb B/SP for the remaining layers.

Printing on a 165-30 polyester mesh typically yields a 500 nm thick layer after firing at 500°C for 45 minutes.

Resulting layer: *transparent*

Anatase particles: 15-20 nm

Diffusing particles: *none*

Concentration: ~18wt%

Vehicle: *terpineol, organic binders*

10 g	ref. 17911	CHF	55
20 g	ref. 17921	CHF	98
50 g	ref. 17951	CHF	214
100 g	ref. 17912	CHF	386
200 g	ref. 17922	CHF	695
500 g	ref. 17952	CHF	1,520
1 kg	ref. 17913	CHF	2,736

For Spin Coating, /SC Series

BLOCKING LAYER

Ti-Nanoxide BL/SC

An organotitanate formulation for the deposition of a compact blocking layer of titanium dioxide by spin coating.

Spin coating at 5000 rpm, 30 s, 2000 rpm/s typically yields a 50-70 nm thick layer after firing at 500°C for 45 min.

Content: organotitanate

Concentration: ~6.0wt%

Vehicle: alcohols, water, organic binders

10 g	ref. 17711	CHF	34
20 g	ref. 17721	CHF	61
50 g	ref. 17751	CHF	133
100 g	ref. 17712	CHF	239
200 g	ref. 17722	CHF	429
500 g	ref. 17752	CHF	939
1 kg	ref. 17713	CHF	1,647

For Slot-Die Coating, /DC Series

BLOCKING LAYER

Ti-Nanoxide BL150/DC

An organotitanate formulation for the deposition of a compact blocking layer of titanium dioxide by slot-die coating.

Slot-die coating at 0.5 m/min, 0.2 mL/min typically yields a 50-70 nm thick layer after firing at 500°C for 45 min.

Content: organotitanate

Concentration: 3.57wt%

Vehicle: alcohols, aromatic solvents, surfactants

10 g	ref. 18111	CHF	28
20 g	ref. 18121	CHF	51
50 g	ref. 18151	CHF	113
100 g	ref. 18112	CHF	204
200 g	ref. 18122	CHF	366
500 g	ref. 18152	CHF	804
1 kg	ref. 18113	CHF	1,448

MESOPOROUS SCAFFOLD LAYER

Ti-Nanoxide T600/SC

A spin coating formulation for the deposition of highly transparent mesoscopic titanium dioxide layers.

Spin coating at 5000 rpm, 30 s, 2000 rpm/s typically yields a 600 nm thick layer after firing at 500°C for 45 min. Ti-Nanoxide T600/SC may be slightly diluted with ethanol to decrease layer thickness.

Content: 15-20 nm anatase particles

Concentration: ~7.0wt%

Vehicle: alcohols, water, organic binders

10 g	ref. 17611	CHF	55
20 g	ref. 17621	CHF	98
50 g	ref. 17651	CHF	215
100 g	ref. 17612	CHF	387
200 g	ref. 17622	CHF	696
500 g	ref. 17652	CHF	1,522
1 kg	ref. 17613	CHF	2,740

MESOPOROUS SCAFFOLD LAYER

Ti-Nanoxide T165/DC

A slot-die coating formulation for the deposition of highly transparent mesoscopic titanium dioxide layers.

Slot-die coating at 0.5 m/min, 0.2 mL/min typically yields a 500 nm thick layer after firing at 500°C for 45 min.

Content: 15-20 nm anatase particles

Concentration: ~1.4wt%

Vehicle: alcohol, terpeneol, organic binders

10 g	ref. 18211	CHF	47
20 g	ref. 18221	CHF	83
50 g	ref. 18251	CHF	182
100 g	ref. 18212	CHF	328
200 g	ref. 18222	CHF	591
500 g	ref. 18252	CHF	1,292
1 kg	ref. 18213	CHF	2,336

Zr-Nanoxide

Zirconium Dioxide Pastes

Monolithic Dye Solar Cell or monolithic Perovskite Solar Cell assemblies are obtained by stacking titania [anode], zirconia [insulating] and conductive carbon [cathode] layers on a single substrate.

Our products Zr-Nanoxide ZR/SP and Zr-Nanoxide ZT/SP are precisely targeted for the making of such insulating layers in monolithic Dye Solar Cells and monolithic Perovskite Solar Cells respectively.

Did You Know?

All of our inks suffixed with "/SP" are suitable for screen printing deposition. They may diluted with terpineol to lower concentration and viscosity, or to use with other deposition techniques.

For Screen Printing, /SP Series

INSULATION LAYER IN MONOLITHIC DYE SOLAR CELL ASSEMBLY

Zr-Nanoxide ZR/SP

A screen printing zirconium dioxide paste for the deposition of insulating layers in monolithic Dye Solar Cells.

Firing the paste at 500°C yields an opaque white layer, that remains porous, with a minimal dye uptake. This allows for titania staining in the presence of an insulating zirconia layer, and offers good electrolyte penetration throughout the entire electrode stack at device assembly.

Load: ~30wt%

Particle size: 20-40 nm mixed with 5 µm

Vehicle: terpineol, organic binders

10 g	ref. 46311	CHF	136
20 g	ref. 46321	CHF	235
50 g	ref. 46351	CHF	490
100 g	ref. 46312	CHF	846
200 g	ref. 46322	CHF	1,485
500 g	ref. 46352	CHF	3,090
1 kg	ref. 46313	CHF	5,380

INSULATION LAYER IN MONOLITHIC PEROVSKITE SOLAR CELL ASSEMBLY

Zr-Nanoxide ZT/SP

A screen printing zirconium dioxide nanoparticle paste for the deposition of insulating layers in monolithic Perovskite Solar Cells.

After firing at 500°C, the oxide particles form a mesoporous coating allowing for perovskite impregnation of the underneath layers. Thanks to a composition exclusively made of nanoparticles, the resulting zirconia layers can be extremely thin, down to the micron, whilst ensuring electrical insulation without sacrificing device thinness and charge extraction.

Load: ~18wt%

Particle size: 20-40 nm

Vehicle: terpineol, organic binders

10 g	ref. 46411	CHF	160
20 g	ref. 46421	CHF	277
50 g	ref. 46451	CHF	576
100 g	ref. 46412	CHF	995
200 g	ref. 46422	CHF	1,747
500 g	ref. 46452	CHF	3,636
1 kg	ref. 46413	CHF	6,330

For Slot-Die Coating, /DC Series

MESOPOROUS INSULATION LAYER

Zr-Nanoxide ZT/DC

A slot-die coating formulation for the deposition of insulating mesoscopic zirconium dioxide layers.

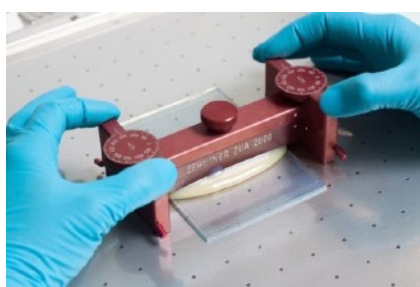
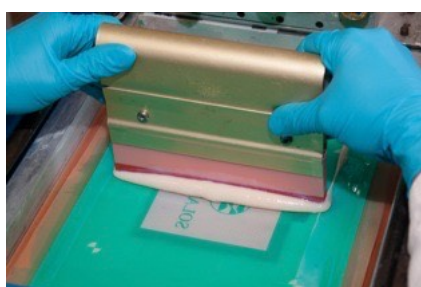
Slot-die coating at 0.5 m/min, 0.2 mL/min typically yields a 500 nm thick layer after firing at 500°C for 45 min.

Load: 6.75wt%

Particle size: 20–40 nm

Vehicle: terpineol, alcohols, organic binders

10 g	ref. 18211	CHF	136
20 g	ref. 18221	CHF	235
50 g	ref. 18251	CHF	490
100 g	ref. 18212	CHF	846
200 g	ref. 18222	CHF	1,485
500 g	ref. 18252	CHF	3,091
1 kg	ref. 18213	CHF	5,381



Al-Nanoxide

Alumina Paste

Mesoporous alumina layers can be used in perovskite solar cells as a scaffold layer in lieu of titania, but may also be employed as an insulation layer in monolithic perovskite solar cell architectures.

Al-Nanoxide A/SP is a new screen printing paste that inaugurates our aluminum oxide product line.

INSULATION/SCAFFOLD LAYER

Al-Nanoxide A/SP

An alumina nanoparticle screen printing paste for the deposition of a scaffolding or insulating layer in perovskite solar cell assemblies.

After firing at 400°C, the paste forms a mesoporous layer of aluminium oxide.

Load: ~9wt%

Particle size: 10 nm

Vehicle: terpineol, organic binders

10 g	ref. 46511	CHF	145
20 g	ref. 46521	CHF	250
50 g	ref. 46551	CHF	535
100 g	ref. 46512	CHF	930
200 g	ref. 46522	CHF	1,610
500 g	ref. 46552	CHF	3,420
1 kg	ref. 46513	CHF	5,990

Ni-Nanoxide

Nickel Oxide Paste

Nickel oxide is a *p*-type semiconductor that can be used to prepare photo-cathodes in Perovskite or Dye Solar Cells.

Together with *n*-type semiconductor pastes like our Ti-Nanoxide products, it becomes possible to fabricate *p/n*-type photovoltaic devices with efficiencies equal or superior to conventional *n*-type assemblies.

FOR REVERSE-TYPE SOLAR CELLS

Ni-Nanoxide N/SP

A nickel oxide nanoparticle paste for the development of *p*-type (reverse) Perovskite or Dye Solar Cells. Suitable for the deposition of nickel oxide layers by screen printing.

After firing at 300°C, the paste forms a mesoporous layer of nickel oxide with a semi-transparent grey appearance.

Load: ~20wt%

Vehicle: terpineol, organic binders

10 g	ref. 46211	CHF	150
20 g	ref. 46221	CHF	255
50 g	ref. 46251	CHF	542
100 g	ref. 46212	CHF	944
200 g	ref. 46222	CHF	1,680
500 g	ref. 46252	CHF	3,496
1 kg	ref. 46213	CHF	6,085

Elcocarb

Carbon Electrode Pastes

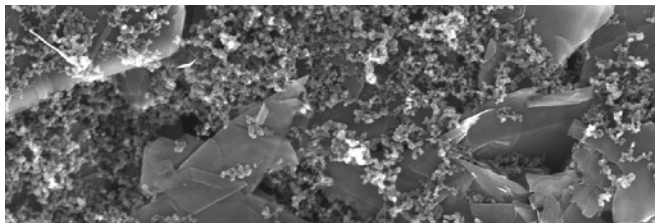
With the Elcocarb product line, Solaronix was the first supplier to provide a carbon paste to the Dye Solar Cell community. Today, the Elcocarb range of products extends beyond this solar technology, and applies to the fabrication of different photo-electrochemical devices such as Perovskite Solar Cells.

The Elcocarb G/SP and Elcocarb B/SP pastes are novel and innovative products that perfectly suits the manufacturing of highly conductive carbon electrodes. They allow for the replacement of the glass counter-electrodes in monolithic

solar cells assemblies, typically used in conjunction with our Ti-Nanoxide and Zr-Nanoxide products.

The carbon pastes can be screen-printed and have no swelling behavior. Their adhesion is excellent on multiple substrates. It is even possible to stack several prints to achieve the desired electrode thickness and resistivity. Firing at 400°C leads to a highly conductive, hydrophobic and non-metallic layer that remains porous. The chemical inertness of this layer enables a broad range of material compatibility with no risk of corrosion.

GRAPHITE/CARBON-BLACK BLEND



Elcocarb B/SP

Graphite/carbon-black paste for the deposition of active highly conductive carbon layers by screen printing. Elcocarb B/SP is specifically suited for the making of carbon cathodes in monolithic Dye Solar Cells and Perovskite Solar Cells.

Sheet resistivity: ≤ 25 ohm/sq. [for ~15 μm thick layer after firing at 400°C for 30 min]

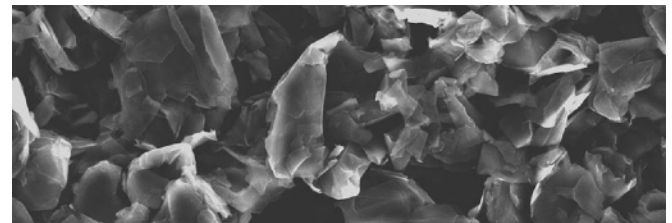
Carbon composition: ≤ 20 μm graphite particles, carbon black nanoparticles

Load: ~22.5wt%

Vehicle: terpeneol, organic binders, inorganic binders

10 g	ref. 45411	CHF	194
20 g	ref. 45421	CHF	355
50 g	ref. 45451	CHF	648
100 g	ref. 45412	CHF	1,163
200 g	ref. 45422	CHF	2,187
500 g	ref. 45452	CHF	4,430
1 kg	ref. 45413	CHF	7,711

GRAPHITE ONLY



Elcocarb G/SP

Multi-graphite paste for the deposition of highly conductive carbon layers by screen printing. After firing, Elcocarb G/SP yields a metal-free carbon electrode ideally suited for monolithic assemblies of electrochemical devices.

Sheet resistivity: ≤ 45 ohm/sq. [for ~15 μm thick layer after firing at 400°C for 30 min]

Carbon composition: ≤ 20 μm graphite particles, carbon black nanoparticles

Load: ~22.5wt%

Vehicle: terpeneol, organic binders, inorganic binders

10 g	ref. 45311	CHF	158
20 g	ref. 45321	CHF	291
50 g	ref. 45351	CHF	530
100 g	ref. 45312	CHF	951
200 g	ref. 45322	CHF	1,789
500 g	ref. 45352	CHF	3,624
1 kg	ref. 45313	CHF	6,309

LOW TEMPERATURE CARBON PASTE

Elcocarb B-L/SP

A graphite/carbon-black paste processable at low temperature for the deposition of electrically conductive carbon layers.

Curing can be realized at only 100-120°C for ~30 min.

Sheet resistivity: ≤ 25 ohm/sq. [for ~15 μm thick layer after firing at 120°C for 30 min]

Carbon composition: graphite, carbon black

10 g	ref. 47111	CHF	60
20 g	ref. 47121	CHF	110
50 g	ref. 47151	CHF	240
100 g	ref. 47112	CHF	420
200 g	ref. 47122	CHF	750
500 g	ref. 47152	CHF	1,200
1 kg	ref. 47113	CHF	1,950

SLOT-DIE COATING FORMULATION

Elcocarb B/DC

Graphite/carbon-black slurry for the deposition of active highly conductive carbon layers by slot-die coating. Elcocarb B/DC is specifically suited for the making of carbon cathodes in monolithic Perovskite Solar Cells.

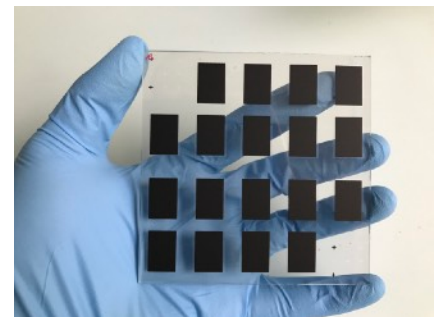
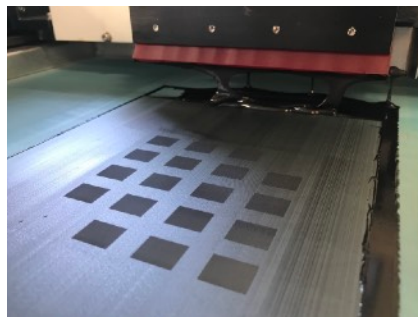
Sheet resistivity: ≤ 25 ohm/sq. [for ~15 μm thick layer after firing at 400°C for 30 min]

Carbon composition: ≤ 20 μm graphite particles, carbon black nanoparticles

Load: 11.25%wt.

Vehicle: terpineol, alcohols, organic binders

10 g	ref. 45511	CHF	165
20 g	ref. 45521	CHF	302
50 g	ref. 45551	CHF	551
100 g	ref. 45512	CHF	989
200 g	ref. 45522	CHF	1,859
500 g	ref. 45552	CHF	3,766
1 kg	ref. 45513	CHF	6,554



Elcosil

Conductive Silver Paste

Meet Elcosil, the inks to print electrically conductive silver tracks on your devices.

SILVER/GLASS FRIT BLEND

Elcosil SG/SP

A paste for the printing of silver contacts. Thanks to its unique silver and glass blend composition, Elcosil SG/SP features excellent adhesion, scratch resistance, and low oxidation rate after firing at 500°C for 30 min.

Elcosil SG/SP is the ideal paste for printing current collectors on TCO substrates.

Load: ~85wt%

Vehicle: terpeneol, alcohols, organic binders

10 g	ref. 47111	CHF	60
20 g	ref. 47121	CHF	110
50 g	ref. 47151	CHF	240
100 g	ref. 47112	CHF	420
200 g	ref. 47122	CHF	750
500 g	ref. 47152	CHF	1,200
1 kg	ref. 47113	CHF	1,950

LOW TEMPERATURE SILVER PASTE

Elcosil S-L/SP

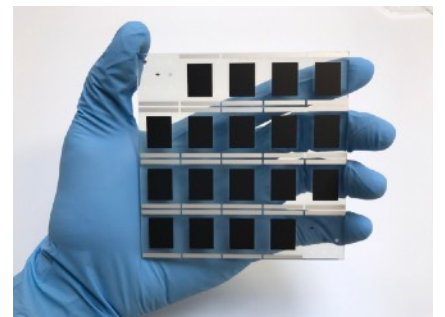
A silver paste for the deposition of current collectors in photovoltaic applications using screen-printing or doctor-blade coating.

Curing only takes 5-30 min at 130°C to yield a scratch-resistant conductive silver layer (~150 mOhm/sq. at 25 µm thick).

Load: ~58wt%

Vehicle: propylene glycol methyl ether, diethyl malonate, organic binders

10 g	ref. 47211	CHF	51
20 g	ref. 47221	CHF	93
50 g	ref. 47251	CHF	202
100 g	ref. 47212	CHF	353
200 g	ref. 47222	CHF	631
500 g	ref. 47252	CHF	1,009
1 kg	ref. 47213	CHF	1,640



Platisol

Platinum Catalyst Precursors

The Platisol products are a set of chemical precursors for the deposition of catalytic platinum layers. In most Dye Solar Cells, the counter-electrode features a catalytic amount of platinum that greatly enhances electron transfer to the electrolyte. This in turn increases the charge density in the solar cell which directly translates to higher photo-currents and efficiencies.

Our Platisol products are the perfect companion for our Iodolyte and Mosalyte electrolytes. Platisol comes in two formulations, a low viscosity paint for spin coating or brush application, and a viscous paste for screen printing or doctor-blade application. In both cases, the products lead to a quasi-transparent layer of activated platinum after firing at 450°C. The precursor is reduced to a minimal amount of platinum for optimum material usage, while remaining transparent and catalytically active.



Platinum Coating Service

Our platinum catalyst coating is a very thin layer of platinum perfectly suited for Dye Solar Cell counter-electrodes. It can be applied on heat-resistant customers' substrates like glasses or quartz. Inquires are welcome.

SPIN COATING OR BRUSH PAINTING

Platisol T

A liquid formulation of platinum precursor for the deposition of a catalytic and quasi-transparent layer of activated platinum after firing at 450°C.

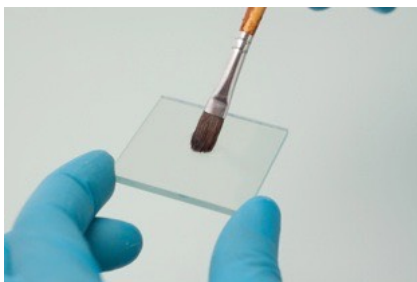
5 mL	ref. 41150	CHF	24
10 mL	ref. 41111	CHF	45
20 mL	ref. 41121	CHF	85
50 mL	ref. 41151	CHF	197
100 mL	ref. 41112	CHF	374
200 mL	ref. 41122	CHF	707
500 mL	ref. 41152	CHF	1,642
1 L	ref. 41113	CHF	3,107

SCREEN PRINTING OR DOCTOR-BLADING

Platisol T/SP

A viscous formulation of platinum precursor for the screen printing of a catalytic and quasi-transparent layer of activated platinum after firing at 450°C.

5 g	ref. 41250	CHF	11
10 g	ref. 41211	CHF	19
20 g	ref. 41221	CHF	35
50 g	ref. 41251	CHF	76
100 g	ref. 41212	CHF	137
200 g	ref. 41222	CHF	247
500 g	ref. 41252	CHF	540
1 kg	ref. 41213	CHF	972



Perovskite Materials

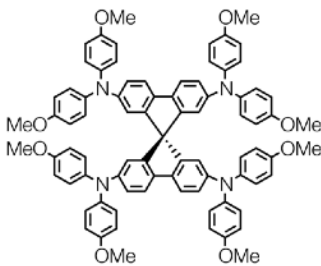
Specialty Products

For several years now and continuing, major breakthroughs branched solid-state Dye Solar Cell research to a new approach using perovskite light absorbers with extraordinary photovoltaic performances.

Since then, Soloronix is heavily investigating Perovskite Solar Cell technology, and is actively working on supplying researchers with the corresponding new materials and components.

Our customers can now benefit from the latest innovations in this field with our Ti-Nanoxide BL150/SP and Ti-Nanoxide T165/SP titania pastes, Zr-Nanoxide ZT/SP zirconia paste, Elcocarb B/SP carbon paste specifically designed for perovskite solar cells, as well as the perovskite precursor and hole transport material shown here.

HOLE TRANSPORT MATERIAL



Spiro-OMeTAD

Spiro-OMeTAD is the hole transport material of reference for solid-state Dye Solar Cells and Perovskite Solar Cells.

Chemical name: 2,2',7,7'-Tetrakis-(N,N-di-4-methoxyphenylamino)-9,9'-spirobifluorene

Molecular formula: $C_{31}H_{68}N_4O_8$

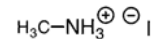
Formula weight: 1225.43 g/mol

CAS number: 207739-72-8

Aspect: white to beige powder

100 mg	ref. 37112	CHF	86
200 mg	ref. 37122	CHF	155
500 mg	ref. 37152	CHF	344
1 g	ref. 37113	CHF	619
2 g	ref. 37123	CHF	990
5 g	ref. 37153	CHF	2,200

PEROVSKITE PRECURSOR



Methylammonium Iodide

Use Soloronix' methylammonium iodide in conjunction with lead halides to prepare your perovskite solar cells.

Chemical name: methylammonium iodide

Molecular formula: CH_6IN

Formula weight: 158.97 g/mol

CAS number: 14965-49-2

Aspect: white powder

5 g	ref. 24153	CHF	23
10 g	ref. 24114	CHF	39
20 g	ref. 24124	CHF	71
50 g	ref. 24154	CHF	155
100 g	ref. 24115	CHF	279

Ruthenizer

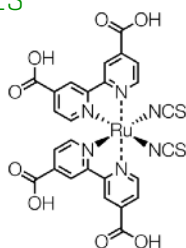
Ruthenium Photo-Sensitizers

The Ruthenizer product line is composed of the very best ruthenium-based sensitizers. These dyes are especially suited for the sensitization of wide band-gap semi-conductors, like titanium dioxide in Dye Solar Cells.

Our product family features all the acclaimed compounds of the Dye Solar Cell community along with additional ruthenium dyes suited for various sorts of photochemical experiments.

As a material supplier, Solaronix is committed to demonstrating the performance of our products. For this reason, we test all of our production batches in real Dye Solar Cells, made in-house, to guarantee the photovoltaic performance that our customers deserve.

SENSITIZING DYES



Ruthenizer 535[N3]

The reference Ruthenium dye for the sensitization of titanium dioxide in Dye Solar Cells, also known as N3 in the literature

Chemical name: *cis-diisothiocyanato-bis[2,2'-bipyridyl-4,4'-dicarboxylic acid] ruthenium(II)*

Molecular formula: $C_{26}H_{16}O_8N_8S_2Ru$

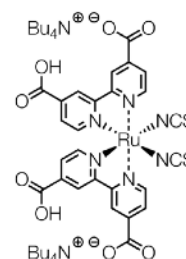
Formula weight: 741.7 g/mol (incl. 2 cryst. H₂O)

CAS number: 141460-19-7

100 mg	ref. 21512	CHF	25
200 mg	ref. 21522	CHF	44
500 mg	ref. 21552	CHF	97
1g	ref. 21513	CHF	175
2 g	ref. 21523	CHF	315
5 g	ref. 21553	CHF	689
10 g	ref. 21514	CHF	1,240
20 g	ref. 21524	CHF	2,231
50 g	ref. 21554	CHF	4,881
100 g	ref. 21515	CHF	8,785

With over 15 years of synthetic and purification experience, we are able to deliver premium quality sensitizing dyes for solar cell applications. They are available in tailored quantities for research and development, as well as bulk quantities for the industry.

Being the one-stop-shop for Dye Solar Cell materials, we also supply staining additives for use in conjunction with sensitizing dyes. For instance, chenodeoxycholic acid is a proven compound for enhancing photovoltaic performances in the presence of ruthenium dyes.



Ruthenizer 535-bisTBA [N719]

One of the best ruthenium dye for the sensitization of titanium dioxide in Dye Solar Cells, the industry standard. Ruthenizer 535-bisTBA is also known as N719 in the literature.

Chemical name: *cis-diisothiocyanato-bis[2,2'-bipyridyl-4,4'-dicarboxylato] ruthenium(II) bis[tetrabutylammonium]*

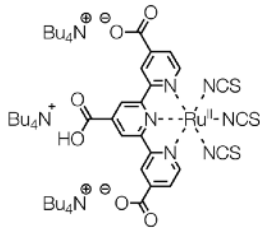
Molecular formula: $C_{58}H_{86}O_8N_8S_2Ru$

Formula weight: 1188.6 g/mol

CAS Number: 207347-46-4

100 mg	ref. 21612	CHF	19
200 mg	ref. 21622	CHF	35
500 mg	ref. 21652	CHF	76
1g	ref. 21613	CHF	137
2 g	ref. 21623	CHF	247
5 g	ref. 21653	CHF	541
10 g	ref. 21614	CHF	974
20 g	ref. 21624	CHF	1,754
50 g	ref. 21654	CHF	3,837
100 g	ref. 21615	CHF	6,907

SENSITIZING DYES [CONTINUING]

**Ruthenizer 620-1H3TBA [N749]**

The most widely used panchromatic dye, also known N749 or "black dye" in the literature.

Ruthenizer 620-1H3TBA sensitizes titanium dioxide up to a wavelength of 920 nm.

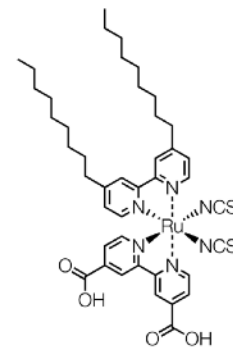
Chemical name: triisothiocyanato-(2,2':6',6''-terpyridyl-4,4',4''-tricarboxylato) ruthenium(II) tris(tetra-butylammonium)

Molecular formula: $C_{69}H_{117}O_6N_9S_3Ru$

Formula weight: 1364.7 g/mol

CAS number: 359415-47-7

50 mg	ref. 21851	CHF	97
100 mg	ref. 21812	CHF	175
200 mg	ref. 21822	CHF	316
500 mg	ref. 21852	CHF	691
1g	ref. 21813	CHF	1,244
2 g	ref. 21823	CHF	2,239
5 g	ref. 21853	CHF	4,897
10 g	ref. 21814	CHF	8,815

**Ruthenizer 520-DN [Z907]**

The original amphiphilic ruthenium dye for the sensitization of titanium dioxide in Dye Solar Cells, also known as Z907 in the literature.

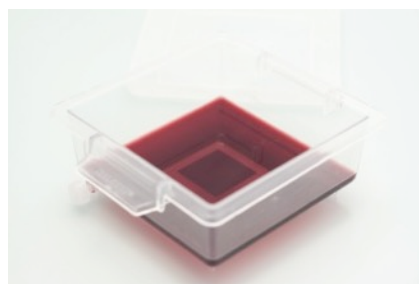
Chemical name: cis-diisothiocyanato-(2,2'-bipyridyl-4,4'-dicarboxylic acid)-(2,2'-bipyridyl-4,4'-dinonyl) ruthenium(II)

Molecular formula: $C_{42}H_{52}O_4N_6S_2Ru$

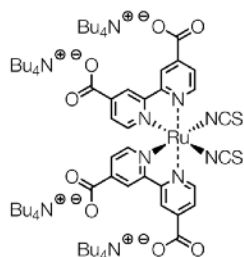
Formula weight: 903 g/mol [incl. 2 cryst. H₂O]

CAS number: 502693-09-6

100 mg	ref. 21412	CHF	29
200 mg	ref. 21422	CHF	52
500 mg	ref. 21452	CHF	115
1g	ref. 21413	CHF	206
2 g	ref. 21423	CHF	371
5 g	ref. 21453	CHF	812
10 g	ref. 21414	CHF	1,462
20 g	ref. 21424	CHF	2,631
50 g	ref. 21454	CHF	5,756
100 g	ref. 21415	CHF	10,360



SENSITIZING DYES [CONTINUING]



Ruthenizer 535-4TBA [N712]

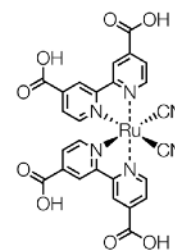
The analogue to Ruthenizer 535 with a fully deprotonated structure. Also known as N712 in the literature.

Chemical name: *cis-diisothiocyanato-bis[2,2'-bipyridyl-4,4'-dicarboxylato] ruthenium(II) tetrakis[tetrabutylammonium]*

Molecular formula: $C_{90}H_{156}O_8N_{10}S_2Ru$

Formula weight: 1669.7 g/mol

50 mg	ref. 21751	CHF	160
100 mg	ref. 21712	CHF	270
200 mg	ref. 21722	CHF	440
500 mg	ref. 21752	CHF	860
1g	ref. 21713	CHF	1,580
2 g	ref. 21723	CHF	2,610
5 g	ref. 21753	CHF	4,850
10 g	ref. 21714	CHF	8,187



Ruthenizer 505

The analogue to Ruthenizer 535 with a favorable stability, suited for the study of the photo-degradation of ruthenium dyes.

Chemical name: *cis-dicyano-bis[2,2'-bipyridyl-4,4'-dicarboxylic acid] ruthenium(II)*

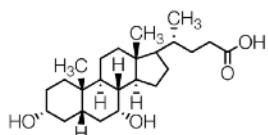
Molecular formula: $C_{26}H_{16}O_8N_6Ru$

Formula weight: 641 g/mol

CAS number: 131681-30-6

50 mg	ref. 21351	CHF	174
100 mg	ref. 21312	CHF	242
200 mg	ref. 21322	CHF	368
500 mg	ref. 21352	CHF	750
1g	ref. 21313	CHF	1,352
2 g	ref. 21323	CHF	2,426
5 g	ref. 21353	CHF	5,211
10 g	ref. 21314	CHF	8,796

STAINING ADDITIVE



Chenodeoxycholic Acid

To be used as an additive in staining solutions together with sensitizing dyes, particularly our ruthenium dyes. The resulting electrodes can yield significant improvements to photovoltaic performances.

Molecular formula: $C_{24}H_{40}O_4$

Formula weight: 392.57 g/mol

CAS number: 474-25-9

500 mg	ref. 23152	CHF	34
1 g	ref. 23113	CHF	42
2g	ref. 23123	CHF	49
5 g	ref. 23153	CHF	67
10 g	ref. 23114	CHF	119
20 g	ref. 23124	CHF	259
50 g	ref. 23154	CHF	413
100 g	ref. 23115	CHF	686
200 g	ref. 23125	CHF	1,176
500 g	ref. 23155	CHF	2,485

Sensidizer

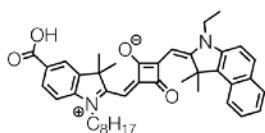
Purely Organic Photo-Sensitizers

Soloronix continues to commit much effort to the development of enhanced molecules and better processes.

Our offer of photo-sensitizers now extends to purely organic dyes. The Sensidizer products bring alternatives to ruthenium pigments, as well as new pigments dedicated to solid-state Dye Solar Cells.



FOR CONVENTIONAL DYE SOLAR CELLS



Sensidizer SQ2 [green]

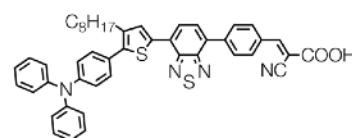
A purely organic pigment for Dye Solar Cells, Sensidizer SQ2 gives a vivid green color to stained electrodes.

Chemical name: 5-carboxy-2-[[3-[[[2,3-dihydro-1,1-dimethyl-3-ethyl-1H-benzo[e]indol-2-ylidene)methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene)methyl]-3,3-dimethyl-1-octyl-3H-indolium

Molecular formula: $C_{41}H_{46}N_2O_4$

Formula weight: 630.81 g/mol

50 mg	ref. 22551	CHF	34
100 mg	ref. 22512	CHF	60
200 mg	ref. 22522	CHF	108
500 mg	ref. 22552	CHF	236
1 g	ref. 22513	CHF	425



Sensidizer RK1 [orange]

A remarkably high performance purely organic pigment for Dye Solar Cells, Sensidizer RK1 gives a bright orange color to stained electrodes.

Chemical name: 2-cyano-3-[4-[7-[5-[4-(diphenylamino)phenyl]-4-octylthiophen-2-yl]benzo[c][1,2,5]thiadiazol-4-yl]phenyl] acrylic acid

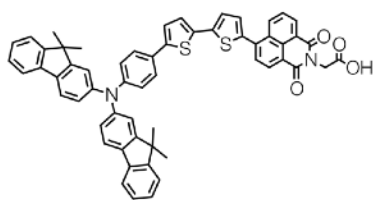
Molecular formula: $C_{46}H_{40}N_4O_2S_2$

Formula weight: 744.97 g/mol

10 mg	ref. 22711	CHF	48
20 mg	ref. 22721	CHF	86
50 mg	ref. 22751	CHF	188
100 mg	ref. 22712	CHF	339



FOR SOLID-STATE DYE SOLAR CELLS


Sensitizer BA741

Organic sensitizer for solid-state Dye Solar Cells.

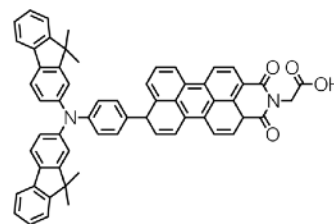
Chemical name: 2-[6-[5-[4-[bis(9,9-dimethyl-9H-fluoren-2-yl)amino] phenyl]-[2,2'-bithiophen]-5-yl]-1,3-dioxo-1H-benzo[d,e]isoquinolin-2(3H)-yl]acetic acid

Molecular formula: C₅₈H₄₂N₂O₄S₂

Formula weight: 895.10 g/mol

CAS number: 1383782-71-5

5 mg	ref. 22450	CHF	56
10 mg	ref. 22411	CHF	101
20 mg	ref. 22421	CHF	184
50 mg	ref. 22451	CHF	354
100 mg	ref. 22412	CHF	643


Sensitizer BA504

Organic sensitizer for solid-state Dye Solar Cells.

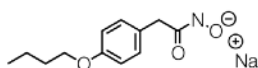
Chemical name: 2-[9-[4-[bis(9,9-dimethyl-9H-fluoren-2-yl)amino]phenyl]-1,3-dioxo-1H-benzo[5,10]anthra[2,1,9-def]isoquinolin-2(3H,9H,13aH)-yl]acetic acid

Molecular formula: C₆₀H₄₄N₂O₄

Formula weight: 857.00 g/mol

5 mg	ref. 22350	CHF	62
10 mg	ref. 22311	CHF	112
20 mg	ref. 22321	CHF	204
50 mg	ref. 22351	CHF	393
100 mg	ref. 22312	CHF	714

STAINING ADDITIVE


Sodium Hydroxamate BA662 [staining additive]

Sodium Hydroxamate BA662 is a staining additive specifically suited for Sensitizer BA504.

Chemical name: 1-butoxy-4-methylbenzyl sodium hydroxamate

Molecular formula: C₁₂H₁₅NNaO₃

Formula weight: 244.24 g/mol

CAS number: 2438-72-4

50 mg	ref. 23451	CHF	18
100 mg	ref. 23412	CHF	32
200 mg	ref. 23422	CHF	55
500 mg	ref. 23452	CHF	108
1 g	ref. 23413	CHF	180
2 g	ref. 23423	CHF	300

Iodolyte

Solvent-Based Electrolytes

The space between electrodes in Dye Solar Cells is filled with an electrolyte. Our Iodolyte products are a range of ready-to-use electrolytes for this application. Their composition is based on the iodide/tri-iodide redox couple, which has been proven to perform the best in Dye Solar Cells. The composition of all Iodolyte electrolytes were carefully developed with state-of-the-art additives to ensure excellent Dye Solar Cell performance and durability.

What's more, the Iodolyte products are fully compatible with our Meltonix sealing films. These hot melt films provide a discrete confinement of the electrolyte between glass electrodes.

Ready to experiment with your own formulations? Have a look at our solar-grade ionic liquids. They may be used either as additives, or as solvent replacement in your electrolytes.

All of our Iodolyte products are available in bulk quantities for industrial purpose. Inquiries are welcome.



Vac'n'Fill Syringe

The Vac'n'Fill Syringe is an easy to use device for making a vacuum in a solar cell cavity and back filling the cavity with a liquid electrolyte.

Vac'n'Fill Syringe	ref. 65209	CHF	15
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HIGH PERFORMANCE ELECTROLYTES

Iodolyte HI-30

A 30 mM iodide/tri-iodide electrolyte formulated using a low viscosity solvent for maximum performance.

It is typically employed for high performance Dye Solar Cells, and for establishing reference samples when studying new compounds.

Redox couple: iodide/tri-iodide

Redox concentration: 30 mM

Solvent: acetonitrile

Additives: ionic liquid, lithium salt, pyridine derivative, thiocyanate.

10 mL	ref. 35411	CHF	25
20 mL	ref. 35421	CHF	45
50 mL	ref. 35451	CHF	99
100 mL	ref. 35412	CHF	179
200 mL	ref. 35422	CHF	322
500 mL	ref. 35452	CHF	705
1 L	ref. 35413	CHF	1,269

Iodolyte AN-50

Iodolyte AN-50 is the lowest viscosity electrolyte formulation for high performance in Dye Solar Cells.

This classic formulation with acetonitrile has been long used for benchmarking efficiency in Dye Solar Cell research.

Redox couple: iodide/tri-iodide

Redox concentration: 50 mM

Solvent: acetonitrile

Additives: ionic liquid, lithium salt, pyridine derivative.

10 mL	ref. 31111	CHF	26
20 mL	ref. 31121	CHF	47
50 mL	ref. 31151	CHF	103
100 mL	ref. 31112	CHF	185
200 mL	ref. 31122	CHF	333
500 mL	ref. 31152	CHF	729
1 L	ref. 31113	CHF	1,313

Iodolyte PN-50

Prepared in propionitrile, Iodolyte PN-50 is a higher boiling-point formulation, yet high performance, electrolyte based on the iodide/tri-iodide redox couple [50 mM].

Redox couple: iodide/tri-iodide

Redox concentration: 50 mM

Solvent: propionitrile

Additives: ionic liquid, pyridine derivative

5 mL	ref. 31250	CHF	81
10 mL	ref. 31211	CHF	135
20 mL	ref. 31221	CHF	243
50 mL	ref. 31251	CHF	548
100 mL	ref. 31212	CHF	1,040
200 mL	ref. 31222	CHF	1,631
500 mL	ref. 31252	CHF	3,058

HIGH STABILITY ELECTROLYTES

Iodolyte Z-50

A 50 mM iodide/tri-iodide electrolyte formulated with a higher boiling point solvent which makes it suitable for long term stability assessments.

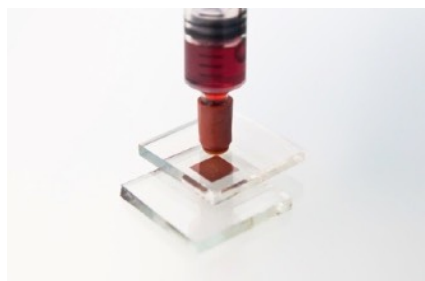
Redox couple: iodide/tri-iodide

Redox concentration: 50 mM

Solvent: 3-methoxypropionitrile

Additives: ionic liquid, alkylbenzimidazole, thiocyanate.

10 mL	ref. 35111	CHF	33
20 mL	ref. 35121	CHF	60
50 mL	ref. 35151	CHF	131
100 mL	ref. 35112	CHF	235
200 mL	ref. 35122	CHF	423
500 mL	ref. 35152	CHF	925
1 L	ref. 35113	CHF	1,666



Iodolyte Z-100

A 100 mM iodide/tri-iodide electrolyte formulated with a higher boiling point solvent which makes it suitable for long term stability assessments.

Redox couple: iodide/tri-iodide

Redox concentration: 100 mM

Solvent: 3-methoxypropionitrile

Additives: ionic liquid, alkylbenzimidazole, thiocyanate.

10 mL	ref. 35211	CHF	33
20 mL	ref. 35221	CHF	60
50 mL	ref. 35251	CHF	131
100 mL	ref. 35212	CHF	236
200 mL	ref. 35222	CHF	426
500 mL	ref. 35252	CHF	931
1 L	ref. 35213	CHF	1,675



Iodolyte Z-150

A 150 mM iodide/tri-iodide electrolyte formulated with a higher boiling point solvent which makes it suitable for long term stability assessments.

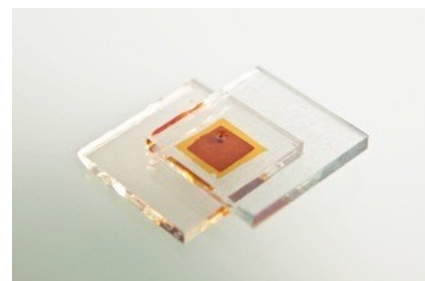
Redox couple: iodide/tri-iodide

Redox concentration: 150 mM

Solvent: 3-methoxypropionitrile

Additives: ionic liquid, alkylbenzimidazole, thiocyanate.

10 mL	ref. 35311	CHF	34
20 mL	ref. 35321	CHF	60
50 mL	ref. 35351	CHF	132
100 mL	ref. 35312	CHF	238
200 mL	ref. 35322	CHF	428
500 mL	ref. 35352	CHF	936
1 L	ref. 35313	CHF	1,685



Mosalyte

Non-Volatile Electrolytes

Soloronix strives to stay at the cutting edge of solvent-free electrolyte development. The Mosalyte product line provides non-volatile electrolyte formulations based on ionic liquids. These innovative electrolytes demonstrate a negligible vapor pressure that makes them compatible with high temperature and diverse sealing processes.

Our most experienced customers may also enjoy preparing custom ionic liquid mixtures from our IonLic product line presented next page.



HIGH LONGEVITY ELECTROLYTE

Mosalyte TDE-250

A non-volatile iodide/tri-iodide electrolyte formulated for high longevity. Features a mixture of three ionic liquids which demonstrate a low viscosity for optimized mass transport.

Redox couple: Iodide/tri-iodide

Redox content: iodine:ionic liquid 1:24

Notable additive: alkylbenzimidazole

Ionic liquid content: 1-ethyl-3-methylimidazolium iodide; 1,3-dimethylimidazolium iodide; 1-ethyl-3-methylimidazolium tetracyanoborate

5 g	ref. 32750	CHF	68
10 g	ref. 32711	CHF	124
20 g	ref. 32721	CHF	222
50 g	ref. 32751	CHF	486
100 g	ref. 32712	CHF	875
200 g	ref. 32722	CHF	1,574
500 g	ref. 32752	CHF	3,444
1 kg	ref. 32713	CHF	6,294

LOW-LIGHT ELECTROLYTE

Mosalyte TDE-025

Benefits from the same formulation of Mosalyte TDE-250, but with a lower iodine content suitable for low-light applications such as indoors.

Redox couple: Iodide/tri-iodide

Redox content: iodine:ionic liquid 1:240

Notable additive: alkylbenzimidazole

Ionic liquid content: 1-ethyl-3-methylimidazolium iodide; 1,3-dimethylimidazolium iodide; 1-ethyl-3-methylimidazolium tetracyanoborate

5 g	ref. 32850	CHF	65
10 g	ref. 32811	CHF	117
20 g	ref. 32821	CHF	211
50 g	ref. 32851	CHF	461
100 g	ref. 32812	CHF	829
200 g	ref. 32822	CHF	1,492
500 g	ref. 32852	CHF	3,264
1 kg	ref. 32813	CHF	5,874

LOW-LIGHT LOW VISCOSITY

Mosalyte TDE-S125

The equivalent of Mosalyte TDE-250 but with lower iodide concentration and lower viscosity, especially suited for low-light applications.

Redox couple: Iodide/tri-iodide

Redox content: iodine:ionic liquid 1:12

Notable additive: alkylbenzimidazole

Ionic liquid content: 1-ethyl-3-methylimidazolium iodide; 1,3-dimethylimidazolium iodide; 1-ethyl-3-methylimidazolium tetracyanoborate

Solvent: sulfolane

5 g	ref. 32950	CHF	28
10 g	ref. 32911	CHF	51
20 g	ref. 32921	CHF	93
50 g	ref. 32951	CHF	212
100 g	ref. 32912	CHF	385
200 g	ref. 32922	CHF	701
500 g	ref. 32952	CHF	1,592
1 kg	ref. 32913	CHF	2,895

IonLic

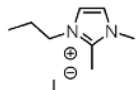
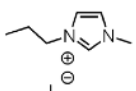
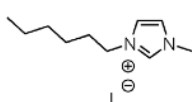
Solar-Grade Ionic Liquids

The IonLic products are a range of ionic liquids for preparing electrolytes. They can be used as additives in solvent-based electrolytes, as well as solvent replacements in non-volatile electrolyte formulations. Since Solaronix makes Dye Solar Cells in-house, the purity of our ionic liquids is specifically targeted for solar cell applications.

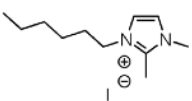
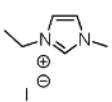
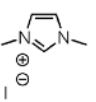
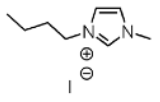
Our Iodolyte and Mosalyte electrolytes are taking advantage of the same IonLic components.



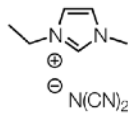
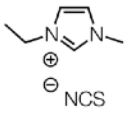
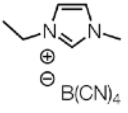
IODIDE SALTS

 <p>IonLic DMPil</p>	<p>Chemical name: 1,2-dimethyl-3-propylimidazolium iodide Molecular formula: C₈H₁₅N₂I Formula weight: 266.12 g/mol CAS number: 218151-78-1 Aspect: white-beige crystals, solid at room temperature</p>	5 g	ref. 33150	CHF	51
		10 g	ref. 33111	CHF	91
		20 g	ref. 33121	CHF	165
		50 g	ref. 33151	CHF	360
		100 g	ref. 33112	CHF	648
		200 g	ref. 33122	CHF	1,166
		500 g	ref. 33152	CHF	2,550
		1 kg	ref. 33113	CHF	4,590
 <p>IonLic PMil</p>	<p>Chemical name: 1-methyl-3-propylimidazolium iodide Molecular formula: C₇H₁₃N₂I Formula weight: 252.10 g/mol CAS number: 119171-18-5 Aspect: light yellow to orange oil</p>	5 g	ref. 33250	CHF	39
		10 g	ref. 33211	CHF	70
		20 g	ref. 33221	CHF	126
		50 g	ref. 33251	CHF	276
		100 g	ref. 33212	CHF	497
		200 g	ref. 33222	CHF	894
		500 g	ref. 33252	CHF	1,956
		1 kg	ref. 33213	CHF	3,520
 <p>IonLic HMIl</p>	<p>Chemical name: 1-hexyl-3-methylimidazolium iodide Molecular formula: C₁₀H₁₉N₂I Formula weight: 294.18 g/mol CAS number: 178631-05-5 Aspect: light yellow to orange oil</p>	5 g	ref. 33350	CHF	50
		10 g	ref. 33311	CHF	89
		20 g	ref. 33321	CHF	161
		50 g	ref. 33351	CHF	351
		100 g	ref. 33312	CHF	632
		200 g	ref. 33322	CHF	1,138
		500 g	ref. 33352	CHF	2,489
		1 kg	ref. 33313	CHF	4,481

IODIDE SALTS [CONTINUING]

 IonLic DMHII	Chemical name: 1,2-dimethyl-3-hexylimidazolium iodide Molecular formula: C ₁₁ H ₂₁ N ₂ I Formula weight: 308.21 g/mol CAS number: 288627-94-1 Aspect: white-beige crystals, solid at room temperature	5 g	ref. 33450	CHF	50
		10 g	ref. 33411	CHF	89
		20 g	ref. 33421	CHF	161
		50 g	ref. 33451	CHF	351
		100 g	ref. 33412	CHF	632
		200 g	ref. 33422	CHF	1,138
		500 g	ref. 33452	CHF	2,489
		1 kg	ref. 33413	CHF	4,481
 IonLic EMII	Chemical name: 1-ethyl-3-methylimidazolium iodide Molecular formula: C ₆ H ₁₁ N ₂ I Formula weight: 238.07 g/mol CAS number: 35935-34-3 Aspect: white-beige crystals, solid at room temperature	5 g	ref. 33550	CHF	45
		10 g	ref. 33511	CHF	81
		20 g	ref. 33521	CHF	145
		50 g	ref. 33551	CHF	318
		100 g	ref. 33512	CHF	572
		200 g	ref. 33522	CHF	1,029
		500 g	ref. 33552	CHF	2,250
		1 kg	ref. 33513	CHF	4,050
 IonLic DMII	Chemical name: 1,3-dimethylimidazolium iodide Molecular formula: C ₅ H ₉ N ₂ I Formula weight: 224.04 g/mol CAS number: 4333-62-4 Aspect: yellow crystals, solid at room temperature	5 g	ref. 33650	CHF	48
		10 g	ref. 33611	CHF	87
		20 g	ref. 33621	CHF	157
		50 g	ref. 33651	CHF	343
		100 g	ref. 33612	CHF	618
		200 g	ref. 33622	CHF	1,112
		500 g	ref. 33652	CHF	2,432
		1 kg	ref. 33613	CHF	4,378
 IonLic BMII	Chemical name: 1-butyl-3-methylimidazolium iodide Molecular formula: C ₈ H ₁₅ N ₂ I Formula weight: 266.12 g/mol CAS number: 65039-05-6 Aspect: light yellow to orange oil	5 g	ref. 33850	CHF	63
		10 g	ref. 33811	CHF	114
		20 g	ref. 33821	CHF	205
		50 g	ref. 33851	CHF	448
		100 g	ref. 33812	CHF	806
		200 g	ref. 33822	CHF	1,451
		500 g	ref. 33852	CHF	3,173
		1 kg	ref. 33813	CHF	5,712

MIXED SALTS

 <p>IonLic EMIDCA</p>	<p>Chemical name: 1-ethyl-3-methylimidazolium dicyanamide Molecular formula: C₈H₁₁N₅ Formula weight: 177.21 g/mol CAS number: 370865-89-7 Aspect: clear transparent liquid</p>	5 g	ref. 34150	CHF	69
		10 g	ref. 34111	CHF	124
		20 g	ref. 34121	CHF	224
		50 g	ref. 34151	CHF	490
		100 g	ref. 34112	CHF	882
		200 g	ref. 34122	CHF	1,588
		500 g	ref. 34152	CHF	3,473
		1 kg	ref. 34113	CHF	6,252
 <p>IonLic EMINCS</p>	<p>Chemical name: 1-ethyl-3-methylimidazolium thiocyanate Molecular formula: C₇H₁₁N₃S Formula weight: 169.25 g/mol CAS number: 331717-63-6 Aspect: yellow oil</p>	5 g	ref. 34250	CHF	50
		10 g	ref. 34211	CHF	91
		20 g	ref. 34221	CHF	163
		50 g	ref. 34251	CHF	357
		100 g	ref. 34212	CHF	642
		200 g	ref. 34222	CHF	1,156
		500 g	ref. 34252	CHF	2,529
		1 kg	ref. 34213	CHF	4,552
 <p>IonLic EMITCB</p>	<p>Chemical name: 1-ethyl-3-methylimidazolium tetracyanoborate Molecular formula: C₁₀H₁₁BN₆ Formula weight: 226.05 g/mol Aspect: slightly yellow oil</p>	5 g	ref. 34350	CHF	107
		10 g	ref. 34311	CHF	192
		20 g	ref. 34321	CHF	346
		50 g	ref. 34351	CHF	762
		100 g	ref. 34312	CHF	1,372
		200 g	ref. 34322	CHF	2,470
		500 g	ref. 34352	CHF	5,433
		1 kg	ref. 34313	CHF	9,780

Meltonix

Hot-Melt Sealing Films

Soloronix has a selection of polymer films specifically adapted to sealing electrodes. These materials demonstrate excellent chemical compatibility with the other components of Perovskite and Dye Solar Cells. The gaskets easily cut from these films will ensure a perfect confinement of the inner materials of the devices after hot press lamination. We have been using Meltonix for over 15 years, proving its stability and durability.

Thicknesses of either 25 or 60 μm are available, and gaskets may be stacked for increased sealing thicknesses. The sealing process consists in melting the gasket onto the electrodes at controlled pressure and temperature with the help of a hot press or a vacuum laminator. The adhesion of Meltonix on glass substrates is excellent, leading to a fully transparent sealing.



Film Cutting Service

Soloronix provides a film cutting service to obtain custom shapes of Meltonix films. Feel free to inquire with your desired dimensions.

25 MICRONS

	Thickness	Thermoplastic	Sealing Temperature				
Meltonix 1170-25	25 μm	DuPont Surlyn®	~100°C	30 x 20 cm	ref. 42432	CHF	33
				30 cm per meter	ref. 42401	CHF	150
				30 x 20 cm, 10 pcs.	ref. 42410	CHF	297

60 MICRONS

Meltonix 1170-60	60 μm	DuPont Surlyn®	~100°C	30 x 20 cm	ref. 42232	CHF	33
				30 cm per meter	ref. 42201	CHF	150
				30 x 20 cm, 10 pcs.	ref. 42210	CHF	297
Meltonix 1162-60	60 μm	DuPont Bynel®	~130°C	30 x 20 cm	ref. 42632	CHF	36
				30 cm per meter	ref. 42601	CHF	180
				30 x 20 cm, 10 pcs.	ref. 42610	CHF	324

SECONDARY SEALING

Amosil 4

Use Amosil 4, our dispersed two component sealing system for a supplementary sealing of your devices in conjunction with the Meltonix products.

20 g	ref. 42721	CHF	57
50 g	ref. 42751	CHF	124
100 g	ref. 42712	CHF	224
200 g	ref. 42722	CHF	403

Optional Protective Film (PF)

Meltonix films can be supplied on a liner for those who may apply a 2 step lamination process, or as a carrier sheet for cut works. Seek for the PF suffix of the same product names at ordering [ex: Meltonix 1170-25PF].

TCO

Transparent and Conductive Substrates

Assembling solar cells begins with the proper choice of substrate. Solaronix provides a variety of conductive substrates suitable for Perovskite Solar Cells, Dye Solar Cells, or any other photo-electrochemical devices.

Our fluorine-doped tin oxide (FTO) coated glasses ensure optimal adhesion of printed layers, a primary requirement for electrode fabrication. Thanks to their chemical inertness, the coated glass surface can withstand harsh solutions, making it very well adapted to a broad range of experiments.

Several sheet resistivities are available, among the most conductive found on the market today. Furthermore, these glass substrates tolerate high temperature treatments without loss of conductivity.

Our FTO coated glasses come in a variety of thicknesses and sizes to suit all of your needs.



TCO Coating Service

Get a fluorine-doped tin oxide (FTO) transparent and conductive coating on your substrates: ceramics, glasses, quartz, or any heat resistant substrate. Inquiries are welcome.

3 MM GLASS				NB: Price per piece, check out our value packs on the next page to save on larger quantities.			
	Thickness	Resistivity	Glass Type				
TC030-10/LI	3 mm	10 ohm/sq.	clear sodalime [low-iron]	5 x 5 cm	ref. 43605	CHF	5
				10 x 10 cm	ref. 43610	CHF	10
				30 x 30 cm	ref. 43630	CHF	70
TC030-10	3 mm	10 ohm/sq.	sodalime	5 x 5 cm	ref. 43805	CHF	5
				10 x 10 cm	ref. 43810	CHF	10
TC030-8	3 mm	8 ohm/sq.	sodalime	5 x 5 cm	ref. 43105	CHF	5
				10 x 10 cm	ref. 43110	CHF	10
				30 x 30 cm	ref. 43130	CHF	70
2 MM GLASS							
TC022-15	2.2 mm	15 ohm/sq.	sodalime	5 x 5 cm	ref. 43205	CHF	5
				10 x 10 cm	ref. 43210	CHF	10
TC022-7/LI	2.2 mm	7 ohm/sq.	clear sodalime [low-iron]	5 x 5 cm	ref. 43705	CHF	5
				10 x 10 cm	ref. 43710	CHF	10
1.6 MM GLASS							
TC016-15	1.6 mm	15 ohm/sq.	sodalime	5 x 5 cm	ref. 43905	CHF	17
				10 x 10 cm	ref. 43910	CHF	60
				30 x 30 cm	ref. 43930	CHF	430
1 MM GLASS							
TC010-10	1 mm	10 ohm/sq.	aluminoborosilicate	5 x 5 cm	ref. 43305	CHF	17
				10 x 10 cm	ref. 43310	CHF	60
				30 x 30 cm	ref. 43330	CHF	430

VALUE PACKS

TC030-10/LI	5 x 5 cm, 10 pcs.	ref. 43671	CHF	45
	10 x 10 cm, 10 pcs.	ref. 43672	CHF	90
	30 x 30 cm, 5 pcs.	ref. 43673	CHF	280
TC030-10	5 x 5 cm, 10 pcs.	ref. 43871	CHF	45
	10 x 10 cm, 10 pcs.	ref. 43872	CHF	90
TC030-8	5 x 5 cm, 10 pcs.	ref. 43171	CHF	45
	10 x 10 cm, 10 pcs.	ref. 43172	CHF	90
	30 x 30 cm, 5 pcs.	ref. 43173	CHF	280
TC022-15	5 x 5 cm, 10 pcs.	ref. 43271	CHF	45
	10 x 10 cm, 10 pcs.	ref. 43272	CHF	90
TC022-7/LI	5 x 5 cm, 10 pcs.	ref. 43771	CHF	45
TC016-15	5 x 5 cm, 10 pcs.	ref. 43971	CHF	382
	10 x 10 cm, 10 pcs.	ref. 43972	CHF	1,350
	30 x 30 cm, 5 pcs.	ref. 43973	CHF	5,805
TC010-10	5 x 5 cm, 10 pcs.	ref. 43371	CHF	382
	10 x 10 cm, 10 pcs.	ref. 43372	CHF	1,350
	30 x 30 cm, 5 pcs.	ref. 43373	CHF	5,805

Custom Glass Sizes

Customer with specific glass size requirement can benefit from our cutting service. Please inquire us with the dimensions you desire.

**Glass Cutter**

This high-precision glass cutter will help you cut and trim 0.5-4 mm substrates with ease. Unlike conventional cutters, our Glass Cutter features a unique and durable notched carbide wheel that provides very precise cuts with smooth edges.

Glass Cutter	ref. 65211	CHF	169
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EXTRA VALUE PACKS

TC030-10/LI	5 x 5 cm, 100 pcs.	ref. 43674	CHF	425
	10 x 10 cm, 100 pcs.	ref. 43675	CHF	850
	30 x 30 cm, 25 pcs.	ref. 43676	CHF	1,400
TC030-8	5 x 5 cm, 100 pcs.	ref. 43174	CHF	425
	10 x 10 cm, 100 pcs.	ref. 43175	CHF	850
	30 x 30 cm, 25 pcs.	ref. 43176	CHF	1,400
TC016-15	5 x 5 cm, 100 pcs.	ref. 43974	CHF	425
	10 x 10 cm, 100 pcs.	ref. 43975	CHF	850
	30 x 30 cm, 25 pcs.	ref. 43976	CHF	1,400
TC010-10	5 x 5 cm, 100 pcs.	ref. 43374	CHF	3,612
	10 x 10 cm, 100 pcs.	ref. 43375	CHF	12,750
	30 x 30 cm, 25 pcs.	ref. 43376	CHF	27,412

FLEXIBLE SUBSTRATES

PETITO188-18

A 188 μ m thick polyethylene terephthalate film with an 18 ohm/sq indium tin oxide coating on one side.

Film type: PET [polyethylene terephthalate]

Film thickness: 188 μ m

Coating: ITO [indium tin oxide, $In_2O_3:SnO_2$]

Sheet resistivity: 18 ohm/sq.

10 x 10 cm	ref. 44311	CHF	15
30 x 20 cm	ref. 44332	CHF	60

Classic Perovskite Solar Cell Kit

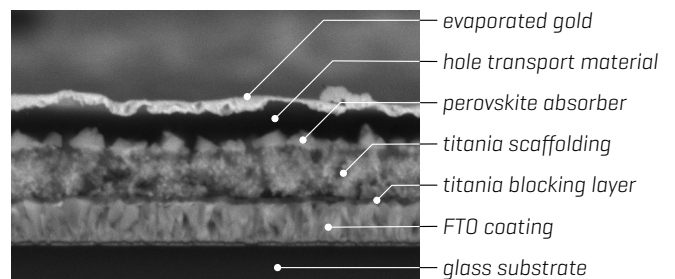
Make Planar or Mesostructured Perovskite Solar Cells

In addition to our chemicals dedicated to Perovskite Solar Cell fabrication, Soloronix is providing a kit containing ready-to-use electrodes for this novel photovoltaic technology.

Researchers can now benefit from high quality titania electrodes specifically designed for experimenting with Perovskite Solar Cells.

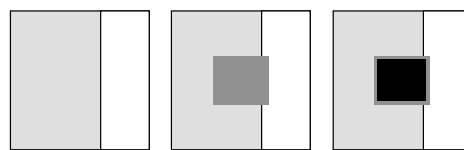
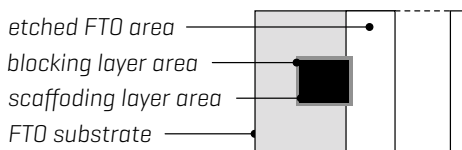
Electrodes are available at different stages of layering. The kit starts with the simplest etched FTO electrodes allowing for any sort of build-up, and extends to the most sophisticated scaffolding titania electrodes, enabling perovskite light absorber investigations straight away.

Last but not least, the intermediate blocking-layer titania electrodes conveniently permit to explore planar setups or play with other sorts of scaffolding materials.



Cross-section of a Perovskite Solar Cell [SEM image]

SELECT YOUR ELECTRODE CONFIGURATION



Size: 20 x 20 mm

Active area: 6 x 6 mm

Features: Etched FTO Blocking Layer Scaffolding Layer

	Etched FTO	Blocking Layer	Scaffolding Layer				
Etched FTO Electrodes	✓	-	-	16 pcs.	ref. 75101	CHF	55
Blocking Layer Electrodes	✓	✓	-	16 pcs.	ref. 75201	CHF	70
Scaffolding Layer Electrodes	✓	✓	✓	16 pcs.	ref. 75301	CHF	90

Monolithic Perovskite Solar Cell Kit

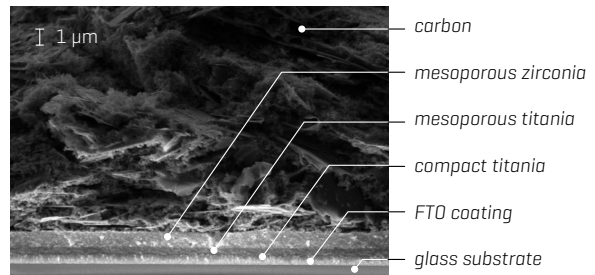
Make Carbon-Based HTM-Free Perovskite Solar Cells

Join the revolution of the most stable, yet efficient, Monolithic Perovskite Solar Cell structure with our whole new kit. Get our ready-to-use monolithic electrodes bearing all of the compact TiO₂, mesoporous TiO₂, mesoporous ZrO₂, and carbon layers in optimal thicknesses.

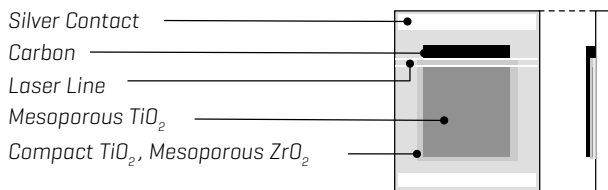
To complete the device, apply the adhesive impregnation mask to avoid liquid spreads outside the active area. Drop the precursor solution, and let it sip into the porous structure. Perovskite will grow within the electrode stack upon annealing, and result in a fully functional, air stable perovskite solar cell.

NB: Applying heat/damp treatment, or light-soaking the device in short-circuit for some time typically helps reaching nominal performance.

See J. Mater. Chem. A 2017, 5, 12060-12067, doi:10.1039/C7TA04132B.



Cross-section of a Monolithic Perovskite Solar Cell [SEM image]



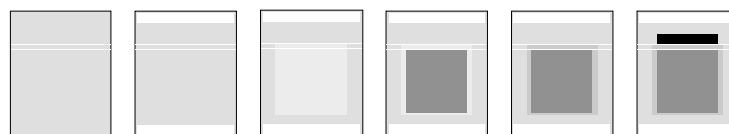
FROM PARTIAL TO FULL-STACK ELECTRODES

Pick up the electrode configuration of your choice, whether it would be the entire stack comprising compact titania, mesoporous titania, mesoporous zirconia, and carbon, or any of the partial intermediaries.

Size: 20 x 25 mm

Active area: 12.0 x 12.5 mm

Carbon area: 12.0 x 15.5 mm



Features: Laser Lines, Silver Contacts, Compact TiO₂ Layer, Mesoporous TiO₂ Layer, Mesoporous ZrO₂ Layer, Carbon Layer

	Laser Lines	Silver Contacts	Compact TiO ₂ Layer	Mesoporous TiO ₂ Layer	Mesoporous ZrO ₂ Layer	Carbon Layer			
Scribed Electrodes	✓	-	-	-	-	-	18 pcs.	ref. 76101	CHF 65
Silver Contacts Electrodes	✓	✓	-	-	-	-	18 pcs.	ref. 76102	CHF 70
Compact Titania Electrodes	✓	✓	✓	-	-	-	18 pcs.	ref. 76201	CHF 75
Mesoporous Titania Electrodes	✓	✓	✓	✓	-	-	18 pcs.	ref. 76301	CHF 80
Mesoporous Zirconia Electrodes	✓	✓	✓	✓	✓	-	18 pcs.	ref. 76401	CHF 85
Carbon Monolithic Electrodes	✓	✓	✓	✓	✓	✓	18 pcs.	ref. 76501	CHF 90



Polyimide Impregnation Masks

Set of adhesive polyimide masks matched to monolithic electrodes, resistant to heat and perovskite precursor solution.

Material: polyimide, and adhesive

Size: 32.5 x 19 mm

Aperture: 16 x 12.5 mm

20 pcs.	ref. 76620	CHF	9
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Perovskite Precursor Solution

Pre-mixed solution for the infiltration of $\text{CH}_3\text{NH}_2\text{PbI}_3$ perovskite into monolithic electrodes in a single step.

Content: lead iodide, methylammonium iodide, 5-aminovaleic acid hydroiodide
Solvent: gamma-butyrolactone

2 mL	ref. 76802	CHF	50
5 mL	ref. 76805	CHF	120



Measurement Masks

Set of 20 adhesive black vinyl masks bearing an 8 x 8 mm aperture for accurate efficiency measurements.

Material: black vinyl, and adhesive

Size: 40 x 40 mm

Aperture: 8 x 8 mm

18 pcs.	ref. 76720	CHF	9
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Sealing Gaskets, Glass Lids, and Pre-Laminates

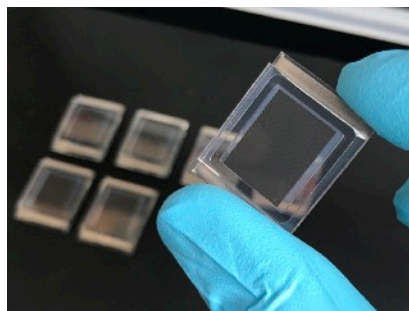
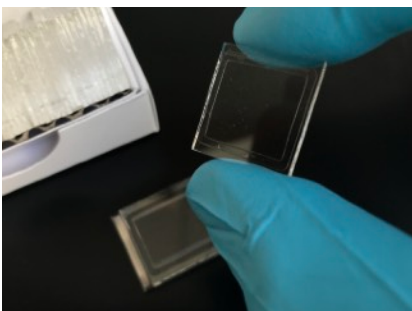
Solar cells prepared from Monolithic Perovskite Solar Cell Kit electrodes can be sealed by laminating a glass lid with a hot melt gasket. The process is best performed using our Vacuum Membrane Laminator.

For your convenience, glass lids may come pre-laminated with a sealing gasket.

Glass Lid: 20 x 20 mm

Sealing Gasket: Meltonix 1170-60

	Sealing Gasket	Glass Lid					
Sealing Gaskets	✓	-	20 pcs.	ref. 76740	CHF	9	
Glass Lids	-	✓	20 pcs.	ref. 76760	CHF	18	
Pre-Laminated Glass Lids	✓	✓	20 pcs.	ref. 76864	CHF	29	



Vacuum Membrane Laminator

Vacuum membrane laminator with integrated pump, and programmable heat and duration.

1 pc.	ref. 76911	CHF	980
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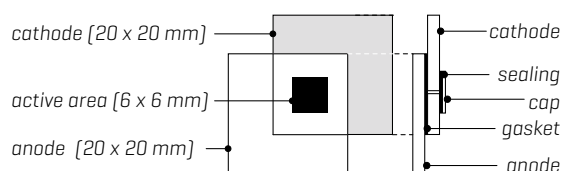
Test Cell Kit

Make Laboratory Dye Solar Cells

The Test Cell Kit allows experienced users to easily build many high performance Dye Solar Cells with a high degree of reproducibility.

Whether you want to expand your Dye Solar Cell expertise, or completely jump-start your research, the Test Cell Kit removes the barriers and fires up your productivity. For research and development, comparative studies, or high level courses, the Test Cell Kit is specifically tailored for the most demanding activities.

The Test Cell Kit is the perfect match of ease of assembly and reproducibility. With an active area of 6 x 6 mm, your Test Cells won't suffer from the side effects observed with larger surfaces, and will allow you to precisely understand changes.



BUNDLED ITEMS

Test Cell Kit, Parts Bundle

All of the necessary parts to assemble sealed cells. [Sensitizing dye and electrolyte at customer's discretion.]

Titania Electrodes, opaque, 16 pcs. [ref. 74101]

Platinum Electrodes, drilled 16 pcs. [ref. 74201]

Gaskets, 20 pcs. [ref. 74301]

Sealings, 20 pcs. [ref. 74401]

Caps, 20 pcs. [ref. 74501]

Measurement Masks, 16 pcs. [ref. 74601]

Parts Bundle	ref. 74991	CHF	144
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Test Cell Kit, Parts and Chemicals Bundle

Same as the first bundle, but all chemicals including dye, staining additive, and electrolyte are conveniently supplied together for best performance.

All of the **Parts Bundle** plus:

Iodolyte AN-50, 3 mL [electrolyte]

Ruthenizer 535-bisTBA, 20 mg [ruthenium dye]

Chenodeoxycholic Acid, 80 mg [staining additive]

Parts and Chemicals Bundle	ref. 74992	CHF	246
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INDIVIDUAL ITEMS

Titania Electrodes, opaque	Size: 20 x 20 mm; Active area: 6 x 6 mm	16 pcs.	ref. 74101	CHF	70
Titania Electrodes, transparent	Size: 20 x 20 mm; Active area: 6 x 6 mm	16 pcs.	ref. 74111	CHF	65
Platinum Electrodes, drilled	Size: 20 x 20 mm	16 pcs.	ref. 74201	CHF	9
Bare Electrodes, drilled	Size: 20 x 20 mm	16 pcs.	ref. 74701	CHF	55
Gaskets	Size: 14 x 14 mm; Aperture: 8 x 8 mm	20 pcs.	ref. 74301	CHF	9
Sealings	Size: 6 x 6 mm	20 pcs.	ref. 74401	CHF	6
Caps	Diam.: 6 mm	20 pcs.	ref. 74501	CHF	6
Measurement Masks	Size: 40 x 40 mm; Aperture: 8 x 8 mm	16 pcs.	ref. 74601	CHF	7

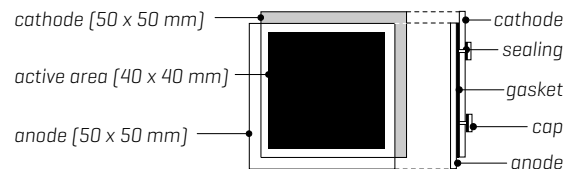
Education Cell Kit

Make Dye Solar Cells in the Classroom

The Education Cell Kit was designed to allow professors and students to easily make their own Dye Solar Cells. The kit consists in an affordable titania electrode that is ready to be stained with a natural dye such as those found in berries.

For simplicity, the solar cell can be assembled by clipping the two electrodes against each other. For durability, the cell can be sealed by laminating the two electrodes with a gasket.

More experienced users can build state-of-the-art Dye Solar Cells using platinized counter-electrode, a ruthenium sensitizer, and an advanced iodide electrolyte.



BUNDLED ITEMS

Eduction Cell Kit, Basic Bundles

For open cells, counter electrodes to be coated with carbon or platinum, dye and electrolyte at customer's discretion.

Titania Electrodes, 4 pcs. [ref. 72141]

Bare Electrodes, not drilled, 4 pcs. [ref. 72642]

Option with electrolyte: **Education Electrolyte, 5 mL**

Basic Bundle	ref. 72991	CHF	56
Basic Bundle, with electrolyte	ref. 72992	CHF	65

Eduction Cell Kit, Advanced Bundles

For sealed cells, gaskets and sealings included, counter-electrodes coated with platinum and drilled.

Titania Electrodes, 4 pcs. [ref. 72141]

Platinum Electrodes, drilled, 4 pcs. [ref. 72241]

Gaskets, 5 pcs. [ref. 72301]

Sealings, 5 pcs. [ref. 72401]

Caps, 10 pcs. [ref. 72501]

Option with chemicals: **Mosalyte TDE-250, 5 mL**

[electrolyte], **Ruthenizer 535-bisTBA, 20 mg** [ruthenium dye], and **Chenodeoxycholic Acid, 80 mg** [staining additive].

Advanced Bundle	ref. 72991	CHF	110
Advanced Bundle, with chemicals	ref. 72992	CHF	222

INDIVIDUAL ITEMS

Titania Electrodes, transparent	Size: 50 x 50 mm; Active area: 40 x 40 mm	4 pcs.	ref. 72141	CHF	36
Platinum Electrodes, drilled	Size: 50 x 50 mm	4 pcs.	ref. 72241	CHF	60
Platinum Electrodes, not drilled	Size: 50 x 50 mm	4 pcs.	ref. 72242	CHF	32
Bare Electrodes, drilled	Size: 50 x 50 mm	4 pcs.	ref. 72641	CHF	36
Bare Electrodes, not drilled	Size: 50 x 50 mm	4 pcs.	ref. 72642	CHF	20
Gaskets	Size: 46 x 36 mm; Aperture: 40 x 40 mm	5 pcs.	ref. 72301	CHF	8
Sealings	Size: 6 x 6 mm	10 pcs.	ref. 72401	CHF	3
Caps	Diam.: 6 mm	10 pcs.	ref. 72501	CHF	3

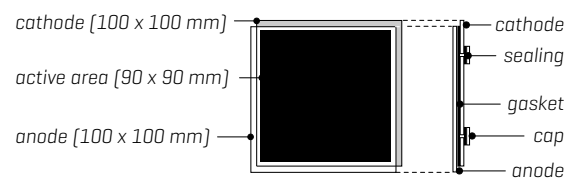
Demonstration Cell Kit

Make Large Area Dye Solar Cells

The Demonstration Cell kit is designed to make exhibition devices. With an active area of 81 cm², this type of solar cell can power a small electric load, and can run nicely in office lighting or other diffuse light conditions.

The most basic assembly of demonstration cell consists in dyeing the titania anode with a natural dye. The cathode can be prepared from a conductive glass and a carbon source. A more performant setup would make use of a platinized counter-electrode, a synthetic dye, and an advanced electrolyte such as found in our product portfolio.

For durability, the demonstration cell can be sealed with a gasket, filling in the electrolyte through the holes drilled in the cathode.



BUNDLED ITEMS

Demonstration Cell Kit, Basic Bundle

For open cells, counter electrode to be coated with carbon or platinum, dye and electrolyte at customer's discretion.

Titania Electrode, transparent, 1 pc. [ref. 73101]

Bare Electrode, not drilled, 1 pc. [ref. 73602]

Basic Bundle	ref. 73991	CHF	74
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Demonstration Cell Kit, Advanced Bundle

For sealed cells, gaskets and sealings included, counter-electrodes coated with platinum and drilled. Dye and electrolyte at customer's discretion.

Titania Electrode, transparent, 1 pc. [ref. 73101]

Platinum Electrode, drilled, 1 pc. [ref. 73201]

Gaskets, 5 pcs. [ref. 73301]

Sealings, 10 pcs. [ref. 73401]

Caps, 10 pcs. [ref. 73501]

Advanced Bundle	ref. 73993	CHF	134
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INDIVIDUAL ITEMS

Titania Electrode, transparent	Size: 100 x 100 mm; Active area: 90 x 90 mm	1 pc.	ref. 73101	CHF	62
Platinum Electrode, drilled	Size: 100 x 100 mm	1 pc.	ref. 73201	CHF	41
Platinum Electrode, not drilled	Size: 100 x 100 mm	1 pc.	ref. 73202	CHF	37
bare electrode, drilled	Size: 100 x 100 mm	1 pc.	ref. 73601	CHF	16
bare electrode, not drilled	Size: 100 x 100 mm	1 pc.	ref. 73602	CHF	12
Gaskets	Size: 96 x 96 mm; Aperture: 90 x 90 mm	5 pcs.	ref. 73301	CHF	25
Sealings	Size: 6 x 6 mm	5 pcs.	ref. 73401	CHF	3
Caps	Diam.: 6 mm	5 pcs.	ref. 73501	CHF	3

Labware

Selection of Items



Small Staining Box

Ideal for staining individual electrodes up to 2.5 x 2.5 cm. Entirely made of plastic, this box will not bring metallic contaminants to your electrodes.

Dimensions: H 30 mm, diam. 40 mm

Material: polypropylene [PP]

Volume: 25 mL

1 pc.	ref. 65102	CHF	6
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Medium Staining Box

The perfect asset for staining electrodes up to 12 x 12 cm. The staining solution can be easily drained and saved for later use thanks to a plug located in a corner of the box.

Dimensions: 125 x 125 x 50 mm

Material: PCTG [base], PDPE [lid and stopper]

Volume: 400 mL

1 pc.	ref. 65112	CHF	45
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Plastic Pipettes

The soft plastic material makes them very well suited for working with glass electrodes or other hard substrates.

Dimensions: 15.5 cm or 30 cm

Material: polyethylene [PE]

Volume: 3 mL or 7 mL

3 mL, 10 pcs.	ref. 65201	CHF	2
7 mL, 5 pcs.	ref. 65202	CHF	4



Heat Resistant Tweezers

These tweezers can resist temperatures up to 230°C, and most chemicals.

Dimensions: L 11.5 cm

Material: reinforced polyphenylensulfide [PPS]

1 pc.	ref. 65206	CHF	8
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Plastic Tweezers

Set of 10 PP metal-free tweezers.

Dimensions: L 12.5 cm

Material: polypropylene [PP]

10 pcs.	ref. 65204	CHF	5
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Plastic Spatulas

Polypropylene spatulas suitable for handling pastes.

Dimensions: L 24.5 cm, W 1.5 cm

Material: polypropylene [PP]

5 pcs.	ref. 65203	CHF	10
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Disposable Spatulas

Sets of disposable spatulas.

Dimensions: 13.5 or 21 cm

Material: polypropylene [PP]

13.5 cm, 10 pcs.	ref. 65302	CHF	3
21 cm, 10 pcs.	ref. 65303	CHF	4

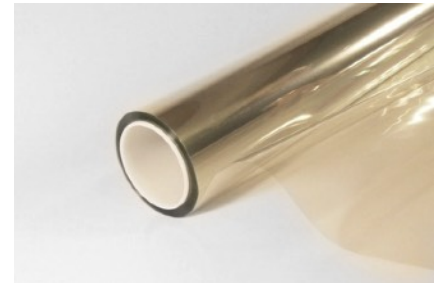


Glass Carrier, for 10 cm plates

This carrier can host 20 samples, up to 3 mm thick, with a comfortable distance of 6 mm between each item.

Made from high-density polyethylene, the carrier allows for bath treatment in aqueous solutions as well as in most common solvents, and is sonication safe.

1 pc.	ref. 65212	CHF	95
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UV Filter Adhesive Film

Adhesive film blocking about 99.5% of the incoming UV radiation while preserving an excellent light transmission across the visible spectrum.

10 x 10 cm	ref. 49111	CHF	3
30 x 20 cm	ref. 49132	CHF	15



Glass Cutter

This high-precision glass cutter will help you cut and trim 0.5-4 mm substrates with ease. Unlike conventional cutters, our Glass Cutter features a unique and durable notched carbide wheel that provides very precise cuts with smooth edges.

Glass Cutter	ref. 65211	CHF	169
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Vac'n'Fill Syringe

The Vac'n'Fill Syringe is an easy to use device for making a vacuum in a solar cell cavity and back filling the cavity with a liquid electrolyte.

Vac'n'Fill Syringe	ref. 65209	CHF	15
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Accessories

Selection of Items



Connection Cables

Pair of 30 cm red and black cables fitted with 2 mm test connectors.

1 pair	ref. 52305	CHF	11
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Crocodile Clips

Pair of red and black clips for 2 mm test leads.

1 pair	ref. 52306	CHF	9
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Step-Down Voltage Converter

Voltage converter from 0-35 V to either 1.5 V, 3 V, or 5 V. A perfect asset for solar modules.

Input voltage: 0-35 V

Output voltage: 1.5, 3, or 5 V

Output current: 1 A max.

Protection: input and output diodes

Connectors: 2 mm test sockets

Dimensions: 60 x 35 x 20 mm

1.5 V	ref. 64101	CHF	150
3 V	ref. 64103	CHF	150
5 V	ref. 64105	CHF	150



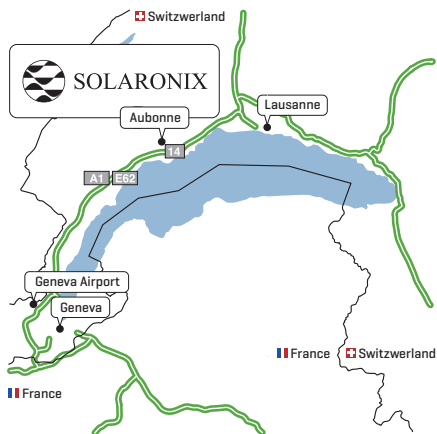
Small Electric Motor

Electric motor that requires only few tens of mA to operate. This motor is perfectly suited for demonstrating the operation of a solar cell.

1 motor	ref. 52311	CHF	25
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