MATERIALS

Perovskite Precursor
Lead Acetate Anhydrous

$Pb(OAc)_2$

Lead(II) Acetate
[for Perovskite precursor]
1g / 5g / 25g
[L0315]

Advantages

- Enables fast crystal growth of perovskites
- Provides ultrasmooth and pin-hole free perovskite film
- Fabricates perovskite device under anhydrous conditions

Application for Perovskite Solar Cells (PSC)

Proposed formation mechanism of $CH_3NH_3PbI_3$ from $Pb(OAc)_2$ [1)]

$$Pb(OAc)_2 + 3CH_3NH_3I \longrightarrow CH_3NH_3PbI_3 + 2CH_3NH_3(OAc)$$

[L0315] [M2556] *Perovskite*

$$2CH_3NH_2 + 2AcOH$$

References PSC research data based on lead acetate precursor
1) PCE >10%: E. Mas-Marzá, I. Mora-Sero, *et al., J. Mater. Chem. A* **2015**, *3*, 9194.
2) PCE >17%: T. Singh, T. Miyasaka, *Chem. Commun*. **2016**, *52*, 4784.
3) PCE 14%: H. J. Snaith, *et al., Nat. Commun*. **2015**, *6*, 6142.
4) PCE >18%: T. P. Russell, H. J. Snaith, R. Zhu, Q. Gong, *et al., Adv. Funct. Mater.* **2016**, *26*, 3508.
5) PCE >13%: W. Qiu, H. J. Snaith, P. Heremans, *et al., Energy Environ. Sci.* **2016**, *9*, 484.
6) PCE >14%: M.-F. Lo, C.-S. Lee, *et al., ACS Appl. Mater. Interfaces* **2015**, *7*, 23110.

Related Products

Lead(II) Iodide (99.99%, trace metals basis) [for Perovskite precursor]	1g / 5g / 25g / 100g / 1kg [L0279]
Lead(II) Bromide [for Perovskite precursor]	1g / 5g / 25g [L0288]
Lead(II) Chloride (purified by sublimation) [for Perovskite precursor]	1g / 5g [L0291]
Lead(II) Chloride [for Perovskite precursor]	1g / 5g / 25g [L0292]
Methylamine Hydroiodide (Water < 100 ppm) **(= MAI)**	1g / 5g / 25g / 100g [M2556]
Formamidine Hydroiodide (Water < 100 ppm) **(= FAI)**	1g / 5g / 25g [F0974]

Perovskite Precursors

Cation \ Anion	Iodide	Bromide	Chloride
Lead	L0279	L0288	L0291, L0292
Cesium	C2205	C2202	C2203
Bismuth	B5787	-	B3546
Methylammonium	M2556	M2589	M0138
Formamidinium	F0974	F0973	F0103
Acetamidinium	A2902	A3292	A0008
Guanidinium	G0450	G0449	G0162
Ethylammonium	E1045	E0056	E0205
Propylammonium	P2212	P2502	P0522
Isopropylammonium	I0934	I1041	I0166
Butylammonium	B4433	B5186	B0710
Isobutylammonium	I0935	I1007	I0096
tert-Butylammonium	B4434	B5187	-
Dimethylammonium	D4555	D5092	D0644
Diethylammonium	D4643	D4667	D0468
Imidazolium	I0970	I1006	-
Phenylammonium	A2778	A2985	-
Benzylammonium	B4566	B5185	B0407
2-Phenylethylammonium	P2213	P2388	P0086
5-Aminovaleric Acid	A2984	A3094	A0436

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