Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

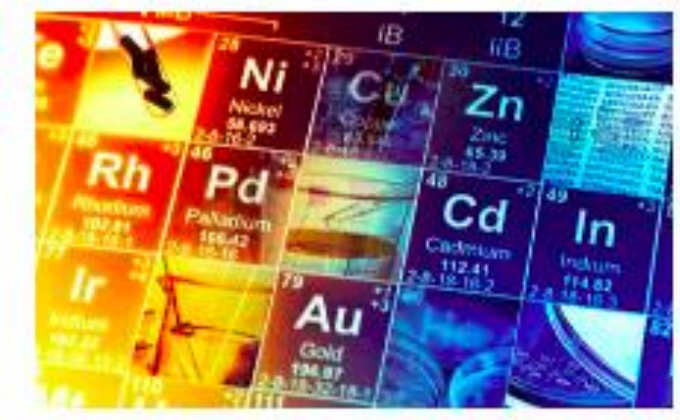
Россия +7(495)268-04-70 **Казахстан** +7(7172)727-132 **Киргизия** +996(312)96-26-47

www.sigmaaldrich.nt-rt.ru | | scx@nt-rt.ru

Технические характеристики на металлы и сплавы высокой чистоты, оксиды и керамика, мембраны и материалы топливных элементов, халькогениды, квантовые точки, материалы для солнечной энергии, материалы для батарей компании Sigma-Aldrich

Виды товаров: металлы и сплавы высокой чистоты, оксиды и керамика, топливные элементы с протонообменной мембраной, твердооксидные топливные элементы, халькогениды и дихалькогениды переходных металлов, халькогенидные квантовые точки, квантовые точки, перовскитные материалы для солнечных батарей, альтернативные материалы для солнечных батарей, материалы для электролитных батарей, материалы катодной батареи, материалы анодных батарей, материалы твердотельных батарей, материалы для натрий-ионных аккумуляторов, прекурсоры аккумуляторного уровня и др.

High-Purity Metals & Alloys



Metals are pure single elements; alloys are mixtures of two or more elements, where at least one element is a metal. Metal compounds can be combined to create a resulting heterogenous alloy that has enhanced properties, such as increased strength or hardness, high-temperature resistance, good thermal conductivity, or chemical corrosion resistance.

We offer a diverse portfolio of high-purity metals, binary and ternary metal compounds, magnetic alloys, metal oxides, nanomaterials, and **organometallic precursors** in various forms, compositions, dispersions, particle sizes and weights for all your research and commercial applications. Our packaging solutions are designed for ease of handling and use, even in oxygen- and moisture-sensitive applications.

HIGH-QUALITY METAL PURIFICATION

The primary focus of our manufacturing facility in Urbana, Illinois, USA is on the purification of inorganics and metals for a variety of high technology applications. Our expertise in metal purification allows for production of the purest alkali earth and rare earth metals, consisting of over 300 high-purity metals with 99.999% (5N) purity or higher. We also offer custom production of alloys and other materials according to your degree of purity, water content, and monodispersity needs.

BEADED MATERIALS

Our beaded metals and alloys are uniquely engineered powders that are processed into smooth, spherical particles with lower surface areas relative to traditional powders. These free-flowing powders are ideal for controlled atmosphere processes, reducing water absorption and minimizing caking, dusting, and static buildup. Granular materials provide several advantages over fine powders, including increased crucible packing densities as well as lower volatility in high temperature solid-state processes. Our metal and alloy beads can be delivered into narrow sample chambers through pneumatic loading to prevent settling and clogging issues associated with fine powder.

900798
Aluminosilicate

MCM-41, pellet, diam. × thickness 2 mm × 5 mm

326941
Aluminum
pellets, 3-8 mesh, ≥99.999% trace metals basis

518573
Aluminum
granular, <1 mm, 99.7% trace metals basis

433705
Aluminum
evaporation slug, diam. × L 6.3 mm × 6.3 mm, 99.999% trace metals basis

733369
Aluminum
foil, thickness 8 µm, 99% trace metals basis

266574
Aluminum
foil, thickness 0.45-0.55 mm, 99.999% trace metals basis

326852
Aluminum
foil, thickness 0.25 mm, 99.999% trace metals basis

326860
Aluminum
foil, thickness 0.13 mm, ≥99.99% trace metals basis

266957
Aluminum
foil, thickness 1.0 mm, 99.999% trace metals basis

338788
Aluminum
pellets, 3-12 mm, 99.99% trace metals basis

755672
Aluminum-scandium alloy
Al 98 wt. %, Sc 2 wt. %, 99.5% trace metals basis

266329
Antimony
powder, -100 mesh, 99.5% trace metals basis

452343
Antimony
beads, ≤5 mm, low oxide, 99.999% trace metals basis

441880
Barium
dendritic pieces, purified by distillation, 99.9% trace metals basis

474711
Barium
dendritic pieces, purified by distillation, 99.99% trace metals basis

735787
Barium
beads, 0.5-2.0 mm particle size, 99% trace metals basis

265470
Bismuth
shot, 4-30 mesh, 99.9% trace metals basis

452386
Bismuth
beads, 1-5 mm, 99.999% trace metals basis

265462
Bismuth
powder, −100 mesh, 99% trace metals basis

264008
Bismuth
powder, −100 mesh, ≥99.99% trace metals basis

264008
Bismuth
powder, −100 mesh, ≥99.99% trace metals basis

808970
Black Phosphorus
Crystal, 99.995%

GF00002091
Brass alloy, Cu63Zn37
foil, 25 x 25mm, 0.005mm thickness, as rolled, not light tested (nlt)

202886
Cadmium

shot, 3 mm, 99.999% trace metals basis

441872
Calcium
dendritic pieces, purified by distillation, 99.99% trace metals basis

327387
Calcium
pieces, <1 cm, 99%

215414
Calcium
turnings, 99% trace metals basis

215147
Calcium
granular, 99%

596566
Calcium
dendritic pieces, purified by distillation, 99.9% trace metals basis

484164
Carbon
glassy, spherical powder, 2-12 µm, 99.95% trace metals basis

461210
Cerium
chips

261041
Cerium
ingot, under oil, 99.9% trace rare earth metals basis

239240
Cesium
ingot, ≥99.95% trace metals basis

374849
Chromium
chips, 99.995% trace metals basis

203076
Cobalt
granular, 99.99% trace metals basis

266647
Cobalt
powder, <150 µm, ≥99.9% trace metals basis

349208
Copper
foil, thickness 0.025 mm, 99.98% trace metals basis

207780
Copper
powder, <75 µm, 99%

254177
Copper
beads, 2-8 mm, 99.9995% trace metals basis

326488
Copper
beads, 2-8 mm, ≥99.99% trace metals basis

207780
Copper
powder, <75 µm, 99%

349208
Copper
foil, thickness 0.025 mm, 99.98% trace metals basis

326488
Copper
beads, 2-8 mm, ≥99.99% trace metals basis

520365
Copper-tin alloy
spherical powder, −200 mesh

483907
Devarda's alloy
powder, −100 mesh

269484
Devarda's alloy
filings, +100 mesh

483591
Diamond

synthetic monocrystalline powder, ≤1 µm

261076
Dysprosium
ingot, 99.9% trace rare earth metals basis

263028
Dysprosium
chips, 99.9% trace rare earth metals basis

263060
Gadolinium
−40 mesh, 99% trace rare earth metals basis

263087
Gadolinium
chips

693510
Gadolinium-silicon-germanium alloy
$Gd_5Si_2Ge_2$, ≥99% trace metals basis

263273
Gallium
99.999% trace metals basis

263265
Gallium
99.99% trace metals basis

203319
Gallium
99.9995% trace metals basis

495425
Gallium–Indium eutectic
Ga 75.5% / In 24.5%, ≥99.99% trace metals basis

203343
Germanium
chips, 99.999% trace metals basis

327395
Germanium
powder, −100 mesh, ≥99.999% trace metals basis

203351
Germanium
powder, −100 mesh, ≥99.99% trace metals basis

263230
Germanium
chips, 99.999% trace metals basis

310980
Gold
wire, diam. 0.5 mm, 99.99% trace metals basis

349240
Gold
foil, thickness 0.25 mm, ≥99.9% trace metals basis

349283
Gold
wire, diam. 0.1 mm, 99.99% trace metals basis

326542
Gold
beads, 1-6 mm, 99.999% trace metals basis

326585
Gold
powder, <10 µm, ≥99.9% trace metals basis

326526
Gold
wire, diam. 0.127 mm, 99.99% trace metals basis

326534
Gold
wire, diam. 0.25 mm, ≥99.9% trace metals basis

265829
Gold
foil, thickness 0.5 mm, 99.99% trace metals basis

265772
Gold
powder, <45 µm, 99.99% trace metals basis

265837
Gold

rod, diam. 3.0 mm, 99.99% trace metals basis

373168
Gold
evaporation slug, diam. × L 0.635 cm × 0.635 cm, 99.99% trace metals basis

349275
Gold
foil, thickness 0.05 mm, 99.99% trace metals basis

349305
Gold
wire, diam. 1.0 mm, 99.997% trace metals basis

255734
Gold
powder, <850 µm, ≥99.99% trace metals basis

373184
Gold
evaporation slug, diam. × L 0.3 cm × 0.6 cm, 99.99% trace metals basis

265810
Gold
foil, thickness 0.1 mm, 99.99% trace metals basis

265780
Gold
wire, diam. 0.25 mm, 99.99% trace metals basis

349313
Gold
wire, diam. 0.5 mm, 99.999% trace metals basis

326496
Gold
foil, thickness 0.127 mm, 99.99% trace metals basis

268461
Gold
foil, thickness 0.025 mm, 99.99% trace metals basis

265799
Gold
wire, diam. 1.0 mm, 99.99% trace metals basis

496588
Graphite
powder, <150 µm, 99.99% trace metals basis

496537
Graphite
rod, L 150 mm, diam. 3 mm, low density, 99.995% trace metals basis

496596
Graphite
powder, <45 µm, ≥99.99% trace metals basis

496553
Graphite
rod, L 150 mm, diam. 6 mm, 99.995% trace metals basis

282863
Graphite
powder, <20 µm, synthetic

266809
Hafnium
turnings, crystal bar, 99.7% trace metals basis

457957
Holmium
chips, 99.9% trace metals basis

57083
Indium
bars, 99.95%

357286
Indium
foil, thickness 0.5 mm, 99.99% trace metals basis

264113
Indium
beads, diam. 2-5 mm, 99.999% trace metals basis

264040
Indium
foil, thickness 0.25 mm, 99.995% trace metals basis

326607
Indium

beads, diam. 2-5 mm, ≥99.9% trace metals basis

277959
Indium
powder, 99.99% trace metals basis

264075
Indium
wire, diam. 1.0 mm, 99.99% trace metals basis

357065
Indium
wire, diam. 2.0 mm, 99.995% trace metals basis

326615
Indium
pieces, 99.99% trace metals basis

264091
Indium
rod, diam. 6 mm, ≥99.999% trace metals basis

357073
Indium
wire, diam. 1.0 mm, 99.995% trace metals basis

357278
Indium
foil, thickness 1.0 mm, 99.999% trace metals basis

264059
Indium
foil, thickness 0.127 mm, 99.99% trace metals basis

264032
Indium
powder, −100 mesh, 99.99% trace metals basis

357294
Indium
foil, thickness 0.25 mm, 99.99% trace metals basis

357308
Indium
foil, thickness 0.1 mm, ≥99.995% trace metals basis

264067
Indium
wire, diam. 0.45-0.55 mm, 99.995% trace metals basis

326143
Iodine
≥99.99% trace metals basis

229695
Iodine
99.999% trace metals basis

451045
Iodine
anhydrous, beads, −10 mesh, 99.999% trace metals basis

357324
Iridium
foil, thickness 0.25 mm, 99.9% trace metals basis

449229
Iridium
evaporation slug, diam. × L 0.6 cm × 1.2 cm, 99.9% trace metals basis

209686
Iridium
powder, 99.9% trace metals basis

356808
Iron
foil, thickness 0.1 mm, ≥99.9% trace metals basis

267945
Iron
chips, 99.98% trace metals basis

338141
Iron
foil, thickness 0.25 mm, ≥99.99% trace metals basis

356824
Iron
wire, diam. 1.0 mm, ≥99.9% trace metals basis

413054
Iron

granular, 10-40 mesh, >99.99% trace metals basis

263109
Lanthanum
powder, −40 mesh, under oil, 99.9% trace rare earth metals basis

263117
Lanthanum
pieces

396117
Lead
shot, <2 mm, 99.9% trace metals basis

391352
Lead
powder, −100 mesh, 99.95% trace metals basis

391352
Lead
powder, −100 mesh, 99.95% trace metals basis

GF40266682
Lithium
foil, not light tested, 38x500mm, thickness 0.20mm, as rolled, 99.9%

220914
Lithium
wire (in mineral oil), diam. 3.2 mm, 99.9% trace metals basis

278327
Lithium
wire, diam. 3.2 mm, in mineral oil, ≥98%

444456
Lithium
granular, 4-10 mesh particle size, high sodium, 99% (metals basis)

266000
Lithium
ribbon, thickness × W 1.5 mm × 100 mm, 99.9% trace metals basis

265985
Lithium
ribbon, thickness × W 0.38 mm × 23 mm, 99.9% trace metals basis

499811
Lithium
granular, 99% trace metals basis

320080
Lithium
ribbon, thickness × W 0.75 mm × 19 mm, 99.9% trace metals basis

265993
Lithium
ribbon, thickness × W 0.75 mm × 45 mm, 99.9% trace metals basis

265969
Lithium
rod, diam. 12.7 mm, 99.9% trace metals basis

426490
Lithium-aluminum alloy

734365
Magnesium
wire, 127 µm diameter, 99.9% trace metals basis

474754
Magnesium
dendritic pieces, purified by distillation, 99.998% trace metals basis

403148
Magnesium
turnings, 5-25 mm, 99.95% trace metals basis

266132
Manganese
powder, −325 mesh, ≥99% trace metals basis

266167
Manganese
chips, thickness <2.0 mm, 99%

463728
Manganese
powder, ≥99.9% trace metals basis

460877
Neodymium
powder, −40 mesh, ≥99% trace rare earth metals basis

203904
Nickel
powder, <150 µm, 99.99% trace metals basis

262722
Niobium
powder, <45 µm, 99.8% trace metals basis

262781
Niobium
foil, thickness 0.25 mm, 99.8% trace metals basis

901931
NORIT® A SUPRA EUR USP
meets analytical specifications of USP

901934
NORIT® RX3 EXTRA

263257
Osmium
powder, 99.9% trace metals basis

203939
Palladium
powder, 99.995% trace metals basis

267082
Palladium
sponge, 99.9% trace metals basis

326666
Palladium
powder, <1 µm, ≥99.9% trace metals basis

464651
Palladium
powder, <75 µm, 99.9% trace metals basis

203998
Palladium
powder or granules, 99.99% trace metals basis

348678
Palladium
foil, thickness 1.0 mm, 99.9% trace metals basis

373206
Palladium
evaporation slug, diam. × L 0.6 cm × 0.6 cm, 99.95% trace metals basis

267120
Palladium
foil, thickness 0.025 mm, 99.9% trace metals basis

267112
Palladium
wire, diam. 1.0 mm, 99.9% trace metals basis

287474
Palladium
foil, thickness 0.5 mm, 99.9% trace metals basis

348643
Palladium
foil, thickness 0.25 mm, 99.98% trace metals basis

267260
Platinum
foil, thickness 0.5 mm, 99.99% trace metals basis

357367
Platinum
wire, diam. 0.10 mm, 99.99% trace metals basis

267155
Platinum
sponge, ≥99.9% trace metals basis

327492
Platinum
wire, diam. 1.0 mm, 99.9% trace metals basis

349380
Platinum
foil, thickness 0.1 mm, 99.9% trace metals basis

349321
Platinum
foil, thickness 0.25 mm, 99.99% trace metals basis

349348
Platinum
foil, thickness 0.127 mm, 99.99% trace metals basis

349402
Platinum
wire, diam. 0.25 mm, 99.9% trace metals basis

444685
Platinum
wire, diam. 2.0 mm, 99.9% trace metals basis

267244
Platinum
foil, thickness 0.025 mm, 99.9% trace metals basis

267260
Platinum
foil, thickness 0.5 mm, 99.99% trace metals basis

357367
Platinum
wire, diam. 0.10 mm, 99.99% trace metals basis

267155
Platinum
sponge, ≥99.9% trace metals basis

327492
Platinum
wire, diam. 1.0 mm, 99.9% trace metals basis

267171
Platinum
wire, diam. 0.25 mm, 99.99% trace metals basis

267201
Platinum
wire, diam. 0.5 mm, 99.99% trace metals basis

267228
Platinum
wire, diam. 0.5 mm, 99.9% trace metals basis

349356
Platinum
foil, thickness 0.05 mm, 99.99% trace metals basis

349364
Platinum
foil, thickness 0.025 mm, 99.99% trace metals basis

373214
Platinum
evaporation slug, diam. × L 0.6 cm × 1.2 cm, 99.99% trace metals basis

349372
Platinum
foil, thickness 1.0 mm, 99.99% trace metals basis

204013
Platinum
powder, 99.995% trace metals basis

204048
Platinum
powder (coarse), 99.99% trace metals basis

298107
Platinum
gauze, 52 mesh, 99.9% trace metals basis

267821
Platinum
wire, diam. 0.127 mm, 99.9% trace metals basis

298093
Platinum
gauze, 100 mesh, 99.9% trace metals basis

267244
Platinum
foil, thickness 0.025 mm, 99.9% trace metals basis

357375
Platinum
wire, diam. 0.076 mm, ≥99.99% trace metals basis

327484
Platinum

shot, ≤3 mm, ≥99.9% trace metals basis

444685
Platinum
wire, diam. 2.0 mm, 99.9% trace metals basis

204188
Rhenium
powder, 99.995% trace metals basis

267317
Rhenium
foil, thickness 0.25 mm, 99.98% trace metals basis

267279
Rhenium
powder, −100 mesh, ≥99.9% trace metals basis

204218
Rhodium
powder, 99.95% trace metals basis

276332
Rubidium
ingot, 99.6% trace metals basis

209694
Ruthenium
powder, −200 mesh, 99.9% trace metals basis

545023
Ruthenium
powder, 99.99% trace metals basis

261203
Samarium
−40 mesh, 99% trace rare earth metals basis

209643
Selenium
pellets, <5 mm, ≥99.99% trace metals basis

209651
Selenium
powder, −100 mesh, ≥99.5% trace metals basis

204307
Selenium
pellets, <5 mm particle size, ≥99.999% trace metals basis

229865
Selenium
powder, −100 mesh, 99.99% trace metals basis

215619
Silicon
powder, −325 mesh, 99% trace metals basis

343250
Silicon
pieces, 99.95% trace metals basis

265527
Silver
foil, thickness 0.1 mm, 99.9% trace metals basis

295744
Silver
wool, diam. 0.05 mm, ≥99.9% trace metals basis

265551
Silver
wire, diam. 0.127 mm, 99.99% trace metals basis

327050
Silver
shot, 1-3 mm, ≥99.99% trace metals basis

348783
Silver
wire, diam. 0.1 mm, 99.9% trace metals basis

326976
Silver
foil, thickness 2.0 mm, 99.9% trace metals basis

265586
Silver
wire, diam. 0.5 mm, ≥99.99% trace metals basis

265594
Silver

wire, diam. 1.0 mm, ≥99.99% trace metals basis

265608
Silver
wire, diam. 1.0 mm, 99.9% trace metals basis

265500
Silver
powder, <250 µm, 99.99% trace metals basis

369438
Silver
foil, thickness 1.0 mm, 99.99% trace metals basis

327093
Silver
powder, 5-8 µm, ≥99.9% trace metals basis

327077
Silver
flakes, 10 µm, ≥99.9% trace metals basis

327034
Silver
wire, diam. 0.25 mm, ≥99.99% trace metals basis

327026
Silver
wire, diam. 0.5 mm, 99.9% trace metals basis

327018
Silver
wire, diam. 2.0 mm, 99.9% trace metals basis

348759
Silver
wire, diam. 1.5 mm, ≥99.99% trace metals basis

265578
Silver
wire, diam. 0.25 mm, 99.9% trace metals basis

326984
Silver
foil, thickness 0.25 mm, 99.9% trace metals basis

267430
Silver
wire, diam. 2.0 mm, ≥99.99% trace metals basis

303372
Silver
granular, >250 µm, 99.99% trace metals basis

373249
Silver
evaporation slug, diam. × L 0.6 cm × 1.2 cm, 99.99% trace metals basis

265519
Silver
foil, thickness 0.025 mm, 99.9% trace metals basis

327107
Silver
powder, <45 µm, ≥99.99% trace metals basis

327085
Silver
powder, 2-3.5 µm, ≥99.9% trace metals basis

403326
Strontium
granular, 99% trace metals basis

343730
Strontium
random pieces, 99%

441899
Strontium
dendritic pieces, purified by distillation, 99.99% trace metals basis

460346
Strontium
dendritic pieces, purified by distillation, 99.9% trace metals basis

357243
Tantalum
foil, thickness 0.05 mm, ≥99.9% trace metals basis

262846
Tantalum

powder, −325 mesh, 99.9% trace metals basis

692824
Tantalum
powder, 60-100 mesh, 99.9%

357251
Tantalum
foil, thickness 0.5 mm, ≥99.9% trace metals basis

262897
Tantalum
foil, thickness 0.25 mm, ≥99.9% trace metals basis

545007
Tantalum
powder, 99.99% trace metals basis

262862
Tantalum
wire, diam. 1.0 mm, ≥99.9% trace metals basis

262919
Tantalum
foil, thickness 0.025 mm, ≥99.9% trace metals basis

262889
Tantalum
foil, thickness 1.0 mm, ≥99.9% trace metals basis

204544
Tellurium
pieces, 99.999% trace metals basis

264865
Tellurium
powder, −30 mesh, 99.997% trace metals basis

263303
Tellurium
granular, −5-+50 mesh, 99.99% trace metals basis

264865
Tellurium
powder, −30 mesh, 99.997% trace metals basis

204544
Tellurium
pieces, 99.999% trace metals basis

277932
Thallium
granular, ≤6 mm diameter, 99.9% trace metals basis

204692
Tin
shot, 99.999% trace metals basis

268496
Titanium
powder, −100 mesh, 99.7% trace metals basis

433667
Titanium
evaporation slug, diam. × L 6.3 mm × 6.3 mm, ≥99.99% trace metals basis

366994
Titanium
powder, <45 µm avg. part. size, 99.98% trace metals basis

267481
Titanium
foil, thickness 0.25 mm, 99.99% trace metals basis

460397
Titanium
foil, thickness 0.127 mm, ≥99.99% trace metals basis

267503
Titanium
foil, thickness 0.25 mm, 99.7% trace metals basis

348805
Titanium
foil, thickness 0.5 mm, 99.99% trace metals basis

268526
Titanium
sponge, 3-19 mm, 99.5% trace metals basis

348864
Titanium

wire, diam. 0.5 mm, 99.99% trace metals basis

305812
Titanium
5-10 mm, ≥99.99% trace metals basis (purity exclusive of Na and K content)

460400
Titanium
wire, diam. 0.25 mm, 99.7% trace metals basis

267902
Titanium
wire, diam. 0.81 mm, 99.7% trace metals basis

348848
Titanium
foil, thickness 0.025 mm, 99.98% trace metals basis

348791
Titanium
foil, thickness 0.127 mm, 99.7% trace metals basis

369489
Titanium
foil, thickness 2.0 mm, 99.7% trace metals basis

266035
Titanium
wire, diam. 1.0 mm, 99.99% trace metals basis

356972
Tungsten
wire, diam. 0.5 mm, ≥99.9% trace metals basis

357189
Tungsten
foil, thickness 0.5 mm, ≥99.9% trace metals basis

267562
Tungsten
wire, diam. 1.0 mm, 99.99% trace metals basis

267554
Tungsten
wire, diam. 0.25 mm, ≥99.9% trace metals basis

357197
Tungsten
foil, thickness 0.127 mm, ≥99.9% trace metals basis

267546
Tungsten
foil, thickness 0.25 mm, ≥99.9% trace metals basis

774065
Vanadium
powder, -100 mesh, 99.9% trace metals basis

774073
Vanadium
pieces, 1-3 mm, 99.9% trace metals basis

357162
Vanadium
foil, thickness 0.127 mm, 99.7% trace metals basis

262935
Vanadium
powder, −325 mesh, 99.5% trace metals basis

95430
Woods metal
alloy (low melting), granular

244104
Woods metal
stick

466069
Ytterbium
powder, ≥99.9% trace rare earth metals basis

262994
Yttrium
chips, 99.9% trace rare earth metals basis

267929
Zinc
wire, diam. 1.0 mm, 99.995% trace metals basis

266361
Zinc

sticks, diam. 7-10 mm, 99.97% trace metals basis

402583
Zinc
shot, <12 mm, 99.99% trace metals basis

324930
Zinc
powder, <150 µm, 99.995% trace metals basis

267635
Zinc
shot, 5 mm, 99.999% trace metals basis

365319
Zinc-Copper couple
powder

Oxides & Ceramics

Oxides are solid materials that consist of a cation and anion and can be composed of numerous elements including alkaline earth, transition and rare earth metals. Functional oxides have tunable physiochemical properties that can be used in energy materials. They are abundant and stable and are used in materials such as glass and ceramics. Ceramics are inorganic materials, comprised of metal or non-metal compounds. Ceramics encompass a wide range of structures from amorphous to polycrystalline or even single crystals. Since they are nonmetallic, they are usually electrically nonconductive or wide band-gap semiconductors but can be doped to be used as semiconductors. Ceramics exhibit excellent thermal stability at high temperatures.

Our manufacturing facility in Urbana, Illinois, USA is a Materials Chemistry Center of Excellence for the production of high purity oxides used in a wide variety of applications ranging from high technology to ceramics. Our capabilities include several specialized synthesis and purification techniques, resulting in our ability to consistently supply oxides of trace metal purities ranging from 3N (99.9%) to 5N (99.999%). Several of our ultra-pure oxide products are offered in discrete particle size ranges for custom applications.

918601
Alpha-Tricalcium phosphate
(TCP), powder, ≥98%, <500 µm particle size

900798
Aluminosilicate
MCM-41, pellet, diam. × thickness 2 mm × 5 mm

643653
Aluminosilicate, mesostructured
MCM-41 (hexagonal)

241873
Aluminum carbide
powder, ~325 mesh, 95%

241903
Aluminum nitride
powder, 10 µm, ≥98%

769290
Aluminum oxide
powder, ultra dry

634875
Aluminum oxide
single crystal substrate, <0001>

202606
Aluminum oxide
99.997% trace metals basis

517747
Aluminum oxide, mesoporous
MSU-X (wormhole), average pore size 3.8 nm

09772
Aluminum silicate
synthetic, 82% SiO_2 basis (based on calcined substance), 9.5% Al_2O_3 basis (based on calcined substance), 8% Na_2O basis (based on calcined substance)

520209
Aluminum titanate
powder

336734
Ammonium tetrathiotungstate
≥99.9% trace metals basis

202649
Antimony(III) oxide
99.999% trace metals basis

379255
Antimony(III) oxide
99.99% trace metals basis

230898
Antimony(III) oxide
powder, 5 µm, *ReagentPlus*®, 99%

554847
Barium oxide
99.99% trace metals basis

288497
Barium oxide
97%

769304
Barium peroxide
anhydrous, ≥86.0% (RT)

773956
Barium phosphate
powder, -200 mesh, 99.9% trace metals basis

338842
Barium titanate(IV)
powder, <2 µm, 99.5% trace metals basis

383309
Barium zirconate
powder, <10 µm

95381
Bismuth(III) oxide
purum, ≥98.0% (KT)

202827
Bismuth(III) oxide
powder, 99.999% trace metals basis

223891
Bismuth(III) oxide
ReagentPlus®, powder, 10 µm, 99.9% trace metals basis

378119
Boron carbide
powder, <10 µm, 98%

378100
Boron carbide
powder, −200 mesh, 98%

255475
Boron nitride
powder, ~1 µm, 98%

202894

Cadmium oxide
≥99.99% trace metals basis

244783
Cadmium oxide
powder, 99.5% trace metals basis

21039
Calcium carbide
granulated, technical, ≥75% (gas-volumetric)

270296
Calcium carbide
pieces, thickness <10 mm , typically, technical grade, ~80%

756415
Calcium nitride
powder, -200 mesh, 99% trace metals basis (contains <0.5% Mg)

208159
Calcium oxide
ReagentPlus®, 99.9% trace metals basis

229539
Calcium oxide
99.995% trace metals basis

451711
Calcium oxide
anhydrous, powder, ≥99.99% trace metals basis

466271
Calcium peroxide
75%, −200 mesh

21240
Calcium silicide
technical

211575
Cerium(IV) oxide
powder, <5 µm, 99.9% trace metals basis

202975
Cerium(IV) oxide
powder, 99.995% trace metals basis

221643
Cobalt(II,III) oxide
powder, <10 µm

383309
Barium zirconate
powder, <10 µm

95381
Bismuth(III) oxide
purum, ≥98.0% (KT)

202827
Bismuth(III) oxide
powder, 99.999% trace metals basis

223891
Bismuth(III) oxide
ReagentPlus®, powder, 10 µm, 99.9% trace metals basis

378119
Boron carbide
powder, <10 µm, 98%

378100
Boron carbide
powder, −200 mesh, 98%

255475
Boron nitride
powder, ~1 µm, 98%

202894
Cadmium oxide
≥99.99% trace metals basis

244783
Cadmium oxide
powder, 99.5% trace metals basis

21039
Calcium carbide
granulated, technical, ≥75% (gas-volumetric)

270296
Calcium carbide
pieces, thickness <10 mm , typically, technical grade, ~80%

756415
Calcium nitride
powder, -200 mesh, 99% trace metals basis (contains <0.5% Mg)

208159
Calcium oxide
ReagentPlus®, 99.9% trace metals basis

229539
Calcium oxide
99.995% trace metals basis

451711
Calcium oxide
anhydrous, powder, ≥99.99% trace metals basis

466271
Calcium peroxide
75%, −200 mesh

21240
Calcium silicide
technical

211575
Cerium(IV) oxide
powder, <5 µm, 99.9% trace metals basis

202975
Cerium(IV) oxide
powder, 99.995% trace metals basis

221643
Cobalt(II,III) oxide
powder, <10 µm

343153
Cobalt(II) oxide
−325 mesh

203130
Copper(II) oxide
99.999% trace metals basis

450812
Copper(II) oxide
powder, 99.99% trace metals basis

450804
Copper(II) oxide
powder, 99.995% trace metals basis

289264
Dysprosium(III) oxide
99.9% trace metals basis

203181
Dysprosium(III) oxide
≥99.99% trace metals basis

289248
Erbium(III) oxide
99.9% trace metals basis

203238
Erbium(III) oxide
≥99.99% trace metals basis

323543
Europium(III) oxide
99.999% trace metals basis

203262
Europium(III) oxide
99.99% trace metals basis

289221
Europium(III) oxide
99.9% trace metals basis

48220
Gadolinium(III) oxide
≥99.9%

278513
Gadolinium(III) oxide
powder, 99.9% trace metals basis

203297
Gadolinium(III) oxide
powder, ≥99.99% trace metals basis

481769
Gallium nitride
99.9% trace metals basis

215066
Gallium(III) oxide
≥99.99% trace metals basis

483001
Germanium(IV) oxide
powder, 99.999% trace metals basis

483702
Germanium(IV) oxide
≥99.99% trace metals basis

199478
Germanium(IV) oxide
(crystalline powder), 99.998% trace metals basis

71063
Goethite
30-63% Fe

202118
Hafnium(IV) oxide
powder, 98%

203394
Hafnium(IV) oxide
≥99.95%

H9750
Holmium(III) oxide
≥99.9% (rare earth content, expressed as Ho_2O_3)

229679
Holmium(III) oxide
powder, 99.999% trace metals basis

912204

Hydroxyapatite granules
1.0-2.0 mm

912190
Hydroxyapatite granules
0.5-1.0 mm grain size

919101
Hydroxyapatite, acicular powder
≥96%, 60 nm±10 nm particle size

494682
Indium tin oxide
−325 mesh, ≥99.99% trace metals basis

203424
Indium(III) oxide
99.998% trace metals basis

289418
Indium(III) oxide
99.99% trace metals basis

366870
Indium(III) phosphide
pieces, 3-20 mesh, 99.998% trace metals basis

752622
Iron disilicide
powder, -20 mesh, 99.9% trace metals basis

691593
Iron phosphide, Fe_3P
99.5% trace metals basis

310069
Iron(II,III) oxide
powder, <5 µm, 95%

518158
Iron(II,III) oxide
99.99% trace metals basis

400866
Iron(II) oxide
−10 mesh, ≥99.6% trace metals basis

400874
Iron(II) titanate
−100 mesh, 99.9%

371254
Iron(III) oxide
hydrated, catalyst grade, 30-50 mesh

529311
Iron(III) oxide
≥99.995% trace metals basis

709190
Lanthanum boride
powder, −325 mesh, 99.5% trace metals basis

203556
Lanthanum(III) oxide
99.999% trace metals basis

199923
Lanthanum(III) oxide
99.99% trace metals basis

L4000
Lanthanum(III) oxide
≥99.9%

241547
Lead oxide
powder (red), 1-2 µm, 99%

203610
Lead(II) oxide
99.999% trace metals basis

215805
Lead(II) titanate
powder, <5 µm, ≥99%

518131
Lead(IV) oxide
99.998% trace metals basis

336637

Lithium aluminate

374725
Lithium oxide
97%, powder, −60 mesh

347043
Lithium peroxide
technical grade, 90%

400939
Lithium titanate
−80 mesh

400920
Lithium zirconate
−80 mesh

203661
Lutetium (III) oxide
99.99% trace metals basis

289191
Lutetium (III) oxide
99.9% trace metals basis

553913
Magnesium boride
powder, −100 mesh, ≥99% trace metals basis

415111
Magnesium nitride
cubic phase, −325 mesh, ≥99.5% trace metals basis

634646
Magnesium oxide
(single crystal substrate), ≥99.9% trace metals basis, <100>, L × W × thickness 10 mm × 10 mm × 0.5 mm

203718
Magnesium oxide
99.99% trace metals basis

529699
Magnesium oxide
≥99.99% trace metals basis

433624
Magnesium peroxide complex
technical grade

343196
Magnesium silicide
≥99% trace metals basis, −20 mesh

709182
Molybdenum boride
powder, −325 mesh, 99.5% trace metals basis

399531
Molybdenum carbide
−325 mesh, 99.5%

243647
Molybdenum disilicide
powder, ≥99% trace metals basis

234761
Molybdenum(IV) oxide
99%

203815
Molybdenum(VI) oxide
99.97% trace metals basis

228656
Neodymium(III) oxide
99.9% trace metals basis

203858
Neodymium(III) oxide
99.99% trace metals basis

372641
Nickel phosphide
−100 mesh, 98%

481793
Nickel(II) oxide
≥99.995% trace metals basis

383163
Niobium(IV) oxide

99.9% trace metals basis

208515
Niobium(V) oxide
−325 mesh, 99.9% trace metals basis

203920
Niobium(V) oxide
99.99% trace metals basis

278904
Potassium dioxide
powder

308382
Potassium hexafluorotitanate(IV)

205176
Praseodymium(III,IV) oxide
99.9% trace metals basis

558249
Praseodymium(III) oxide
99.9% trace metals basis

342254
Rhenium(IV) oxide
99.7% trace metals basis

380997
Rhenium(VI) oxide
99.9% trace metals basis

515736
Rhenium(VII) oxide
99.995% trace metals basis

228672
Samarium(III) oxide
99.9% trace metals basis

204358
Sand, white quartz
≥99.995% trace metals basis

S5130

Silica, fumed
powder

378097
Silicon carbide
-200 mesh particle size

357391
Silicon carbide
−400 mesh particle size, ≥97.5%

85356
Silicon dioxide
granular, ≥99.9%

342890
Silicon dioxide
−325 mesh, 99.5% trace metals basis

342831
Silicon dioxide
fused (granular), 4-20 mesh, 99.9% trace metals basis

248622
Silicon nitride
predominantly β-phase, ≤10micron primary particle size

334103
Silicon nitride
powder, ≥99.9% trace metals basis

325171
Silicon nitride
predominantly a-phase, ≤10 micron

755680
Strontium aluminate
-100 mesh, 99.5% trace metals basis

756423
Strontium nitride
powder, -60 mesh, 99.5%, Ba: <1%

415138
Strontium oxide
99.9% trace metals basis

415200
Strontium peroxide
98%

773948
Strontium phosphate
powder, -200 mesh, 99.9% trace metals basis

396141
Strontium titanate
powder, 99%

634689
Strontium titanate
single crystal substrate, <100>

336173
Tantalum boride (1:2)
99.5%

280801
Tantalum(IV) carbide
≤5 µm

204536
Tantalum(V) oxide
<20 µm, 99.99% trace metals basis

303518
Tantalum(V) oxide
99% trace metals basis

697222
Tantalum(V) oxide
−60 mesh, 99.5%

204579
Terbium(III,IV) oxide
99.999% trace metals basis

253952
Terbium(III,IV) oxide
99.9% trace metals basis

590509

Terbium(III) oxide
99.99% trace metals basis

☐

918857
Tetracalcium phosphate (TTCP) powder
≥98%, ≤50 µm particle size

☐

214744
Thallium(III) oxide
99%

☐

204676
Thulium(III) oxide
99.99% trace metals basis

☐

289167
Thulium(III) oxide
99.9% trace metals basis

☐

518174
Tin(II) oxide
99.99% trace metals basis

☐

204714
Tin(IV) oxide
≥99.99% trace metals basis

☐

244651
Tin(IV) oxide
−325 mesh, 99.9% trace metals basis

☐

336289
Titanium boride
powder, <10 µm

☐

518913
Titanium carbonitride
powder, ≤5 µm, 99.8% trace metals basis

☐

595063
Titanium nitride
<3 µm

☐

481033
Titanium(III) oxide
−100 mesh, 99.9% trace metals basis

307807
Titanium(IV) carbide
−325 mesh, 98%

594849
Titanium(IV) carbide
powder, <4 µm, ≥99% (Ti)

769371
Titanium(IV) oxide
pellets, diam. × thickness 12.5 mm × 5.5 mm

232033
Titanium(IV) oxide, anatase
powder, 99.8% trace metals basis

248576
Titanium(IV) oxide, anatase
powder, −325 mesh, ≥99% trace metals basis

635057
Titanium(IV) oxide, rutile
<001>, (single crystal substrate), ≥99.9% trace metals basis, L × W × thickness 10 mm × 10 mm × 0.5 mm

204730
Titanium(IV) oxide, rutile
99.995% trace metals basis

204757
Titanium(IV) oxide, rutile
≥99.98% trace metals basis

224227
Titanium(IV) oxide, rutile
powder, <5 µm, ≥99.9% trace metals basis

241881
Tungsten(IV) carbide
powder, 2 µm, ≥99%

400505
Tungsten(IV) oxide
−100 mesh, 99.99% trace metals basis

95410

Tungsten(VI) oxide
powder, puriss., 99.9%

204781
Tungsten(VI) oxide
powder, 99.995% trace metals basis

232785
Tungsten(VI) oxide
powder, ≤25 µm, ≥99% trace metals basis

215988
Vanadium(III) oxide
98%

463744
Vanadium(III) oxide
99.99% trace metals basis

745847
Vanadium(IV) carbide
powder, <2 µm, 99.9% trace metals basis

215821
Vanadium(IV) oxide
≥99% trace metals basis

204854
Vanadium(V) oxide
99.95% trace metals basis

204889
Ytterbium(III) oxide
99.99% trace metals basis

246999
Ytterbium(III) oxide
99.9% trace metals basis

357464
Yttrium barium copper oxide
powder, ≤5 µm particle size, 99.9%

328626
Yttrium barium copper oxide
powder

756490
Yttrium oxide, europium doped
99% trace metals basis

204927
Yttrium(III) oxide
99.999% trace metals basis

205168
Yttrium(III) oxide
99.99% trace metals basis

709247
Zinc arsenide
pieces, 99.995% trace metals basis

255750
Zinc oxide
99.99% trace metals basis

204951
Zinc oxide
99.999% trace metals basis

481424
Zinc peroxide
50-60%

918849
Zirconium oxide
monoclinic, <10 µm particle size, 99.6%

913685
Zirconium oxide milled nanofibers

204994
Zirconium(IV) oxide
99.99% trace metals basis (purity excludes ~2% HfO_2)

230693
Zirconium(IV) oxide
powder, 5 µm, 99% trace metals basis

499250
Zirconium(IV) oxide, sulfated
pore 18 Å (mesoporous), 99% trace metals basis

Fuel Cell Membranes & Materials

As sustainable, renewable energy sources, fuel cells generate electrical energy through a reverse electrolysis reaction between a hydrogen-rich fuel source and oxygen. Fuel cells can operate higher efficiencies relative to traditional combustion engines and lower emissions, often producing only heat and water as waste products. This clean and efficient source of electricity can be scaled up for power plant applications or scaled down for transport or portable power applications. Current research is focused on improving the performance and durability of fuel cell technology while reducing costs, such as developing ion-exchange membrane electrolytes and improving membrane electrode assemblies.

Our fuel cell and membrane materials provide superior properties, such as high proton conductivity, high chemical and thermal stability, and low gas permeability for fuel cell components. We offer platinum and platinum alloys, doped-platinum catalysts, and alternative platinum-deposition materials for high activation of fuel cell catalysts.

- **Proton Exchange Membrane (PEM) Fuel Cells**
- **Solid Oxide Fuel Cells (SOFCs)**

SOLID OXIDE FUEL CELLS (SOFC)

Solid oxide fuel cells use a solid oxide electrolyte to conduct negative oxygen ions from the fuel cell cathode to the anode. Our solid oxide materials include a variety of yttria-stabilized zirconia (YSZ), lanthanum strontium manganite (LSM), gadolinium-doped ceria (GDC), and other ceramic materials specifically designed for improving the durability and performance of SOFC applications.

PROTON EXCHANGE MEMBRANE (PEM) FUEL CELLS

In PEM fuel cells, a polymer membrane conducts protons from the anode to the cathode while blocking electrons, using water electrolysis to produce energy. For PEM fuel cells we offer materials with high proton conductivity, high chemical and thermal stability, and low gas permeability properties, including polymeric materials and fluorinated polymers functionalized with sulphonic acid moieties, such as Nafion™ membranes.

715298
1,2,4,5-Tetrakis(4-carboxyphenyl)benzene

contains up to 6 wt. % water, ≥98%

180467
1,3-Cyclohexanebis(methylamine), mixture of isomers
98%

706884
1,3,5-Tris(4′-carboxy[1,1′-biphenyl]-4-yl)benzene
95%

686859
1,3,5-Tris(4-carboxyphenyl)benzene
≥98%, ≤20 wt. % solvent

767921
1,3,5-Triscarboxyphenylethynylbenzene
≥95%

752525
2-Hydroxyterephthalic acid
97%

721247
2,2′-Diamino-4,4′-stilbenedicarboxylic acid

382132
2,5-Dihydroxyterephthalic acid
98%

731706
3,3′,5,5′-Tetracarboxydiphenylmethane
≥95% (HPLC)

759597
4,4′-Stilbenedicarboxylic acid
98%

741175
4,4′,4″-*s*-Triazine-2,4,6-triyl-tribenzoic acid
95%

724440
9,10-Anthracenedicarboxylic acid
95%

802549
Aquivion® D72-25BS
PFSA eq. wt. 720 g/mole SO_3H, liquid, dispersion, 25% in water, stabilized CF_3 polymer chain ends

802565
Aquivion® D79-25BS
liquid, dispersion, 25% in water, PFSA eq. wt. 790 g/mole SO_3H, contains CF_3 polymer chain ends as stabilizer

802573
Aquivion® D79-25BS-Li
liquid dispersion, 25% in water, PFSLi eq. wt. 790 g/mole SO_3Li, stabilized CF_3 polymer chain ends

802654
Aquivion® D87-25B
liquid, dispersion, 25% in water, PFSA eq. wt. 870 g/mole SO_3H

802557
Aquivion® D98-25BS
liquid, dispersion, 25% in water, PFSA eq. wt. 980 g/mole SO_3H, contains CF_3 polymer chain ends as stabilizer

688738
Basolite® A100
produced by BASF

690872
Basolite® F300
produced by BASF

691348
Basolite® Z1200
produced by BASF

794325
Basolite® Z377

682098
Borane-ammonia complex
95%

695254
Calcium borohydride

497355
Calcium hydride
powder, 99.99% trace metals basis

558257
Calcium hydride
99.9% trace metals basis

734519
Cerium(IV) oxide-gadolinium doped
<0.5 µm particle size, powder, contains 10 mol % gadolinium as dopant

572357
Cerium(IV) oxide-gadolinium doped
nanopowder, contains 20 mol % gadolinium as dopant

572330
Cerium(IV) oxide-gadolinium doped
nanopowder, contains 10 mol % gadolinium as dopant

734624
Cerium(IV) oxide-samarium doped
<0.5 µm particle size, powder, contains 20 mol % samarium as dopant

763756
Cerium(IV) oxide-yttria doped
nanopowder, yttria 20 mol %, <50 nm particle size (TEM), 99.9% trace metals basis

749125
Cobalt(II) oxo pivalate

730882
Disodium bis(4-chloro-3-sulfophenyl)sulfone
97%

749141
Iron(III) oxo acetate perchlorate hydrate

757357
Lanthanum gallate, strontium and magnesium doped
powder, 0.3-0.6 µm, 99% trace rare earth metals basis

685933
Lanthanum-nickel alloy
hydrogen-storage grade

685968
Lanthanum-nickel-cobalt alloy
hydrogen-storage grade

686034
Lithium aluminum hydride
hydrogen-storage grade

685917
Lithium borodeuteride
≥95%

686026
Lithium borohydride
hydrogen-storage grade, ≥90%

201049
Lithium hydride
powder, −30 mesh, ≥95%

399558
Lithium nitride
−60 mesh, ≥99.5%

685976
Mischmetal-nickel alloy
hydrogen-storage grade

237523
Palladium on barium carbonate
reduced, extent of labeling: 5 wt. % loading

918768
PIM-1

918784
PIM-EA-TB

918776
PIM-py

520780
Platinum black
fuel cell grade, ≥99.9% trace metals basis

326712
Ruthenium black

AEM2B3066
Xion AEM-Pention-72-15CL
thickness 30 µm, L × W 15 cm × 15 cm

AEM2B0566
Xion AEM-Pention-72-15CL
thickness 5 µm, L × W 15 cm × 15 cm

AEM2B2044
Xion AEM-Pention-72-15CL
thickness 20 µm, L × W 10 cm × 10 cm

AEM2B5022
Xion AEM-Pention-72-15CL
thickness 50 µm, L × W 5 cm × 5 cm

AEM2B1022
Xion AEM-Pention-72-15CL
thickness 10 µm, L × W 5 cm × 5 cm

AEM2B5044
Xion AEM-Pention-72-15CL
thickness 50 µm, L × W 10 cm × 10 cm

AEM2B2066
Xion AEM-Pention-72-15CL
thickness 20 µm, L × W 15 cm × 15 cm

AEM2B3022
Xion AEM-Pention-72-15CL
thickness 30 µm, L × W 5 cm × 5 cm

AEM2B5066
Xion AEM-Pention-72-15CL
thickness 50 µm, L × W 15 cm × 15 cm

AEM2B0522
Xion AEM-Pention-72-15CL
thickness 5 µm, L × W 5 cm × 5 cm

AEM2B3044

Xion AEM-Pention-72-15CL
thickness 30 µm, L × W 10 cm × 10 cm

AEM2B0544
Xion AEM-Pention-72-15CL
thickness 5 µm, L × W 10 cm × 10 cm

AEM2B1044
Xion AEM-Pention-72-15CL
thickness 10 µm, L × W 10 cm × 10 cm

AEM2B1066
Xion AEM-Pention-72-15CL
thickness 10 µm, L × W 15 cm × 15 cm

AEM2B2022
Xion AEM-Pention-72-15CL
thickness 20 µm, L × W 5 cm × 5 cm

AEM2A1044
Xion AEM-Pention-72-5CL
thickness 10 µm, L × W 10 cm × 10 cm

AEM2A0522
Xion AEM-Pention-72-5CL
thickness 5 µm, L × W 5 cm × 5 cm

AEM2A0544
Xion AEM-Pention-72-5CL
thickness 5 µm, L × W 10 cm × 10 cm

AEM2A5066
Xion AEM-Pention-72-5CL
thickness 50 µm, L × W 15 cm × 15 cm

AEM2A0566
Xion AEM-Pention-72-5CL
thickness 5 µm, L × W 15 cm × 15 cm

AEM2A1066
Xion AEM-Pention-72-5CL
thickness 10 µm, L × W 15 cm × 15 cm

AEM2A1022
Xion AEM-Pention-72-5CL
thickness 10 µm, L × W 5 cm × 5 cm

AEM2A2022
Xion AEM-Pention-72-5CL
thickness 20 µm, L × W 5 cm × 5 cm

AEM2A2044
Xion AEM-Pention-72-5CL
thickness 20 µm, L × W 10 cm × 10 cm

AEM2A2066
Xion AEM-Pention-72-5CL
thickness 20 µm, L × W 15 cm × 15 cm

AEM2A3022
Xion AEM-Pention-72-5CL
thickness 30 µm, L × W 5 cm × 5 cm

AEM2A3044
Xion AEM-Pention-72-5CL
thickness 30 µm, L × W 10 cm × 10 cm

AEM2A3066
Xion AEM-Pention-72-5CL
thickness 30 µm, L × W 15 cm × 15 cm

AEM2A5022
Xion AEM-Pention-72-5CL
thickness 50 µm, L × W 5 cm × 5 cm

AEM2A5044
Xion AEM-Pention-72-5CL
thickness 50 µm, L × W 10 cm × 10 cm

PEM3A1044
Xion PEM-Aquivion®-720
thickness 10 µm, L × W 10 cm × 10 cm

PEM3A3044
Xion PEM-Aquivion®-720
thickness 30 µm, L × W 10 cm × 10 cm

PEM3A1044
Xion PEM-Aquivion®-720
thickness 10 µm, L × W 10 cm × 10 cm

PEM3A3044

Xion PEM-Aquivion®-720
thickness 30 µm, L × W 10 cm × 10 cm

PEM3A0544
Xion PEM-Aquivion®-720
thickness 5 µm, L × W 10 cm × 10 cm

PEM3A3066
Xion PEM-Aquivion®-720
thickness 30 µm, L × W 15 cm × 15 cm

PEM3A2022
Xion PEM-Aquivion®-720
thickness 20 µm, L × W 5 cm × 5 cm

PEM3A2044
Xion PEM-Aquivion®-720
thickness 20 µm, L × W 10 cm × 10 cm

PEM3A0566
Xion PEM-Aquivion®-720
thickness 5 µm, L × W 15 cm × 15 cm

PEM3A5022
Xion PEM-Aquivion®-720
thickness 50 µm, L × W 5 cm × 5 cm

PEM3A1022
Xion PEM-Aquivion®-720
thickness 10 µm, L × W 5 cm × 5 cm

PEM3A5066
Xion PEM-Aquivion®-720
thickness 50 µm, L × W 15 cm × 15 cm

PEM3A1066
Xion PEM-Aquivion®-720
thickness 10 µm, L × W 15 cm × 15 cm

PEM3A5044
Xion PEM-Aquivion®-720
thickness 50 µm, L × W 10 cm × 10 cm

PEM3A2066

Xion PEM-Aquivion®-720
thickness 20 µm, L × W 15 cm × 15 cm

PEM3B5022
Xion PEM-Aquivion®-830
thickness 50 µm, L × W 5 cm × 5 cm

PEM3B2022
Xion PEM-Aquivion®-830
thickness 20 µm, L × W 5 cm × 5 cm

PEM3B1044
Xion PEM-Aquivion®-830
thickness 10 µm, L × W 10 cm × 10 cm

PEM3B5066
Xion PEM-Aquivion®-830
thickness 50 µm, L × W 15 cm × 15 cm

PEM3B3044
Xion PEM-Aquivion®-830
thickness 30 µm, L × W 10 cm × 10 cm

PEM3B3066
Xion PEM-Aquivion®-830
thickness 30 µm, L × W 15 cm × 15 cm

PEM3B2044
Xion PEM-Aquivion®-830
thickness 20 µm, L × W 10 cm × 10 cm

PEM3B2066
Xion PEM-Aquivion®-830
thickness 20 µm, L × W 15 cm × 15 cm

PEM3B3022
Xion PEM-Aquivion®-830
thickness 30 µm, L × W 5 cm × 5 cm

PEM3B0522
Xion PEM-Aquivion®-830
thickness 5 µm, L × W 5 cm × 5 cm

PEM3B0544
Xion PEM-Aquivion®-830

thickness 5 µm, L × W 10 cm × 10 cm

PEM3B0566
Xion PEM-Aquivion®-830
thickness 5 µm, L × W 15 cm × 15 cm

PEM3B1022
Xion PEM-Aquivion®-830
thickness 10 µm, L × W 5 cm × 5 cm

PEM3B1066
Xion PEM-Aquivion®-830
thickness 10 µm, L × W 15 cm × 15 cm

WEM1A3022
Xion WEM-Hydrex-200
thickness 30 µm, L × W 5 cm × 5 cm

WEM1A3044
Xion WEM-Hydrex-200
thickness 30 µm, L × W 10 cm × 10 cm

WEM1A3066
Xion WEM-Hydrex-200
thickness 30 µm, L × W 15 cm × 15 cm

WEM1A5022
Xion WEM-Hydrex-200
thickness 50 µm, L × W 5 cm × 5 cm

WEM1A5044
Xion WEM-Hydrex-200
thickness 50 µm, L × W 10 cm × 10 cm

WEM1A5066
Xion WEM-Hydrex-200
thickness 50 µm, L × W 15 cm × 15 cm

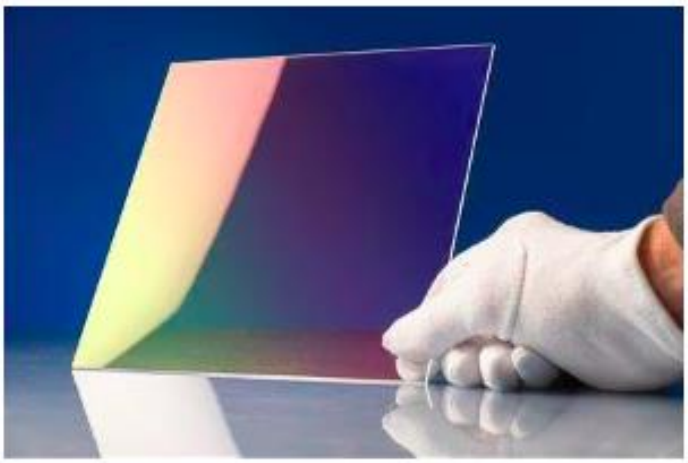
544779
Zirconium(IV) oxide-yttria stabilized
<100 nm particle size

572322
Zirconium(IV) oxide-yttria stabilized
nanopowder

572349
Zirconium(IV) oxide-yttria stabilized
nanopowder

464228
Zirconium(IV) oxide-yttria stabilized
submicron powder, 99.9% trace metals basis (purity excludes ~2% HfO_2)

Chalcogenides



Chalcogenides are compounds containing at least one chalcogen elemental ion and at least one metallic element. They typically include sulfides, selenides, and tellurides. Available in amorphous, crystalline, and nanocrystalline forms, chalcogenides are noted for their superior electronic, optical, and semiconducting properties. Additional distinctive features include an ability to bend, self-organize, and photo-darken. Whether your research focuses on sensors, optoelectronics, photovoltaics, or biomedical applications, we offer various low to high-purity compounds to optimally fit your needs.

Our Life Science Nanomaterials Research and Development Team is focused on providing you with materials at the forefront of innovation. In conformity with this focus, we offer diverse and exclusive chalcogenides, scaling and commercialization services, and customized solutions for diverse applications.

- **Transition Metal Chalcogenides and Dichalcogenides**
- **Chalcogenide Quantum Dots**

TRANSITION METAL CHALCOGENIDES AND DICHALCOGENIDES

Transition metal chalcogenides are ultra-thin materials with tunable electronic and optoelectronic properties, indirect bandgaps, and enhanced stabilities. While transition metal monochalcogenides are semiconductors of the type MX, dichalcogenides are of the type MX_2 in which M is a transition metal and X is a chalcogen atom. These materials have an electronic bandgap making them useful for a wide range of applications in batteries, solar cells, flexible electronics, fiber optics, energy storage, and catalysis. We offer graphene-like transition metal dichalcogenides, such as molybdenum disulfide (MoS_2) and tungsten disulfide (WS_2), for utilization in field-effect transistors and monolayered photoluminescent thin films.

CHALCOGENIDE QUANTUM DOTS

Chalcogenide quantum dots are semiconductor nanoparticles with excellent quantum confinement effects, surface-volume ratio, solubility, edge effects, tunable photoluminescence, and fluorescence properties. We offer high-quality molybdenum disulfide (MoS_2) and tungsten disulfide (WS_2) quantum dots featuring easy functionalization and enhanced photostability. These materials impart a new dimension to standard 2D nanosheets, enabling applications in energy, batteries, and imaging.

333182
Aluminum sulfide
granular, <10 mm particle size, 98%

401196
Antimony(III) selenide
99.99% trace metals basis

244562
Antimony(III) sulfide
powder

229466
Antimony(III) sulfide
99.995% trace metals basis

733490
Antimony(III) telluride
powder, −325 mesh, 99.96% trace metals basis

523437
Barium sulfide
99.9%

733504
Bismuth selenide
granular (melted), ≥99.995% trace metals basis

333190
Bismuth(III) sulfide
99%

733482
Bismuth(III) telluride
powder, −325 mesh, 99.99% trace metals basis

244600
Cadmium selenide
-325 Mesh particle size, 99.99% trace metals basis, electronic grade

481629
Copper(I) selenide
99.95% trace metals basis

342459
Copper(I) sulfide

powder, −325 mesh

450820
Copper(II) sulfide
powder, 99.99% trace metals basis

342467
Copper(II) sulfide
powder, −100 mesh, ≥99% trace metals basis

410527
Gallium(III) sulfide
99.99% trace metals basis

484539
Germanium(II) sulfide
99.99% trace metals basis

403318
Indium(III) selenide

308293
Indium(III) sulfide red
99.99% trace metals basis

778117
Iron disulfide
powder, −325 mesh, 99.8% trace metals basis

372595
Lead(II) sulfide
99.9% trace metals basis

254266
Lead(II) telluride
99.998% trace metals basis

213241
Lithium sulfide
99.98% trace metals basis

400947
Manganese(II) sulfide
~100 mesh particle size

243566

Mercury(II) sulfide red
99%

909106
Molybdenum (IV) diselenide
lithium intercalated

808652
Molybdenum disulfide
Crystal, 99.995%

778087
Molybdenum(IV) selenide
-325 mesh, 99.9% trace metals basis

69860
Molybdenum(IV) sulfide
powder

234842
Molybdenum(IV) sulfide
powder, <2 µm, 98%

343226
Nickel sulfide
99.7% trace metals basis, −150 mesh

60539
Potassium tellurite
≥95.0% (calc. on dry substance, RT)

P0677
Potassium tellurite
≥90%

257710
Selenium sulfide

400688
Sodium tellurite
−100 mesh, 99%

808822
Tungsten diselenide
Crystal, 99.995%

243639
Tungsten(IV) sulfide
powder, 2 µm, 99%

244619
Zinc selenide
powder, 10 µm, 99.99% trace metals basis

254320
Zinc telluride
−100 mesh, 99.99% trace metals basis

Quantum Dots

Quantum dots are semiconducting nanocrystals, typically ranging between 2 and 10 nanometers in diameter (10-50 atoms), that can convert an incoming spectrum of light into a different frequency of energy output. These man-made crystals are made small enough that quantum mechanical effects emerge. Quantum dots have unique electronic optoelectronic properties that allows for tunability of energy levels with their wavelength or color. The particles can be made to emit or absorb specific wavelengths of light through tailoring of their physical dimensions. As quantum dots increase in size, the emission color will have a red spectral shift.

Read more about

- **Quantum Dot Properties & Applications**
- **Inorganic Quantum Dots**
- **Carbon-based Quantum Dots**
- **Perovskite Quantum Dots**
- **Quantum Dot Kits**

QUANTUM DOT PROPERTIES & APPLICATIONS

Our quantum dots feature bright emissions, narrow size distributions, high purity, and high quantum yields; and are offered in both organic and aqueous formulations.

- Light emitting diodes (LEDs)
- Solid state lighting (SSL)
- Displays
- Photovoltaics (PVs)
- Transistors

- Quantum computing
- Biomedical imaging
- Förster resonance energy transfer (FRET)
- Biosensors

INORGANIC QUANTUM DOTS

We offer a variety of quantum dots, including core-type, core-shell, and alloyed quantum dots. Core type particles are composed of a single material, such as a chalcogenide. Core-shell quantum dots consist of a semiconducting core material and a distinct semiconductor shell, such as ZnS, which is used widely to achieve high quantum efficiency and stability. Finally, alloyed quantum dots maintain their size while tuning the optical properties via homogenous and gradient internal structures.

Inorganic quantum dots offer a continuous absorption spectrum and better photostability as compared to conventional molecular dyes. With spectral ranges from UV to NIR, our quantum dots are available in easy-to-handle solutions of water or toluene solvent, and in a wide range of surface functionalization for bioimaging applications, including common chemistries such as carboxyl, amine, and succinimidyl 4-(N-maleimidomethyl)cyclohexane-1-carboxylate (SMCC).

CARBON-BASED QUANTUM DOTS

Carbon-based quantum dots display many advantageous properties in addition to quantum confinement and edge effects, such as high biocompatibility, water solubility, facile chemical modification, and catalytic properties. Types of carbon-based quantum dots include graphene quantum dots (GQDs) and carbon quantum dots (CQDs). GQDs are graphene structures (sp2-hybridized carbon) composed of several layered sheets with lateral dimensions less than 100 nanometers. CQDs are comprised of a disordered sp2- and sp3- hybridized carbon structure similar to amorphous carbon and have physical dimensions of less than 10 nanometers.

PEROVSKITE QUANTUM DOTS

Perovskite quantum dots (PQDs) are semiconducting materials with high luminescent efficiency. They have a low threshold, tunable wavelength, and ultra-stable stimulated emission (SE). These semiconductors are a class of hybrid organic-inorganic metal halide based perovskite materials, with the common formula ABX3, where A is Cesium (Cs) or FA (formamidinium), X is Chlorine (Cl), Bromine (Br), or Iodide (I). They have a direct bandgap which is useful for a variety of optoelectronic devices.

QUANTUM DOT KITS

Take advantage of the unique optical and biocompatible properties of our quantum dot kits. The kits come with nanoparticles in ready-to-use mixtures. Easily screen antibodies or develop new *in vitro* diagnostics. No prior experience with conjugation is needed. Unleash the potential of these powerful materials in your research endeavors.

OCNQSS645
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 645 nm, 1 µM

OCNQSS665
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 665 nm, 1 µM

OCNQSS450
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 450 nm, 1 µM

OCNQSS490
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 490 nm, 1 µM

OCNQSS525
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 525 nm, 1 µM

OCNQSS540
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 540 nm, 1 µM

OCNQSS560
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 560 nm, 1 µM

OCNQSS580
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 580 nm, 1 µM

OCNQSS600
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 600 nm, 1 µM

OCNQSS620
Cd-based Core/Shell Quantum Dots with Streptavidin
fluorescence λ_{em} 620 nm, 1 µM

900511
CdSe/CdS core-shell type quantum rods
fluorescence λ_{em} 530 nm, 5 mg/mL in hexane

900512
CdSe/CdS core-shell type quantum rods
fluorescence λ_{em} 560 nm, 5 mg/mL in hexane

900514
CdSe/CdS core-shell type quantum rods
fluorescence λ_{em} 620 nm, 5 mg/mL in hexane

918822
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 470 nm, 1 mg/mL in water

☐

918865
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 520 nm, 1 mg/mL in water

☐

919322
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 600 nm, 1 mg/mL in water

☐

919055
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 520 nm, 5 mg/mL in toluene

☐

919314
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 580 nm, 1 mg/mL in water

☐

919063
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 540 nm, 5 mg/mL in toluene

☐

919292
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{ex} 540 nm, 1 mg/mL in water

748021
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 520 nm, solid

☐

748099
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 600 nm, solid

☐

748080
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 560 nm, solid

☐

748129
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 580 nm, solid

☐

790192

CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 620 nm, solid

748056
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 540 nm, solid

900235
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 540 nm, 4 µM in 10 mM PBS

900238
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 600 nm, 4 µM in 10 mM PBS

900247
CdSe/ZnS core-shell type quantum dots
PEG functionalized, fluorescence λ_{em} 620 nm, 4 µM in H_2O

900243
CdSe/ZnS core-shell type quantum dots
PEG functionalized, fluorescence λ_{em} 520 nm, 4 µM in H_2O

900221
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 540 nm, 1 mg/mL in H_2O

900226
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 645 nm, 1 mg/mL in H_2O

900224
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 620 nm, 1 mg/mL in H_2O

900214
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 520 nm, 5 mg/mL in toluene

900212
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 645 nm, solid

900222

CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 580 nm, 1 mg/mL in H_2O

900219
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 620 nm, 5 mg/mL in toluene

900218
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 600 nm, 5 mg/mL in toluene

919071
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 560 nm, 5 mg/mL in toluene

919187
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 620 nm, 1 mg/mL in water

919160
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 580 nm, 1 mg/mL in water

919225
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 620 nm, 5 mg/mL in toluene

919497
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{ex} 650 nm, 1 mg/mL in water

919284
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 520 nm, 1 mg/mL in water

919276
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 500 nm, 1 mg/mL in water

919047
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 500 nm, 5 mg/mL in toluene

919179
CdSe/ZnS core-shell type quantum dots

carboxylic acid functionalized, fluorescence λ_{em} 600 nm, 1 mg/mL in water

919268
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 470 nm, 1 mg/mL in water

919306
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 560 nm, 1 mg/mL in water

900235
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 540 nm, 4 µM in 10 mM PBS

900214
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 520 nm, 5 mg/mL in toluene

900212
CdSe/ZnS core-shell type quantum dots
stabilized with octadecylamine ligands, fluorescence λ_{em} 645 nm, solid

900238
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 600 nm, 4 µM in 10 mM PBS

900247
CdSe/ZnS core-shell type quantum dots
PEG functionalized, fluorescence λ_{em} 620 nm, 4 µM in H_2O

919209
CdSe/ZnS core-shell type quantum dots
oleic acid functionalized, fluorescence λ_{em} 580 nm, 5 mg/mL in toluene

919535
CdSe/ZnS core-shell type quantum dots
amine functionalized, fluorescence λ_{em} 450 nm, 1 mg/mL in water

919144
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 500 nm, 1 mg/mL in water

919152
CdSe/ZnS core-shell type quantum dots

carboxylic acid functionalized, fluorescence λ_{em} 560 nm, 1 mg/mL in water

919195
CdSe/ZnS core-shell type quantum dots
carboxylic acid functionalized, fluorescence λ_{em} 650 nm, 1 mg/mL in water

777978
CdTe core-type quantum dots
COOH functionalized, fluorescence λ_{em} 710 nm, powder

777943
CdTe core-type quantum dots
COOH functionalized, fluorescence λ_{em} 570 nm, powder

777978
CdTe core-type quantum dots
COOH functionalized, fluorescence λ_{em} 710 nm, powder

777935
CdTe core-type quantum dots
COOH functionalized, fluorescence λ_{em} 520 nm, powder

777994
CdTe core-type quantum dots
COOH functionalized, fluorescence λ_{em} 770 nm, powder

924288
Copper indium sulfide zinc sulfide ($CuInS_2$/ZnS) core/shell Quantum Dots
in toluene, fluorescence λ_{em} 560 nm, 1 mg/mL

924334
Copper indium sulfide zinc sulfide ($CuInS_2$/ZnS) core/shell Quantum Dots
in toluene, fluorescence λ_{em} 700 nm, 1 mg/mL

924342
Copper indium sulfide zinc sulfide ($CuInS_2$/ZnS) core/shell Quantum Dots
in toluene, fluorescence λ_{em} 750 nm, 1 mg/mL

924261
Copper indium sulfide zinc sulfide ($CuInS_2$/ZnS) core/shell Quantum Dots
in toluene, fluorescence λ_{em} 530 nm, 1 mg/mL

924326
Copper indium sulfide zinc sulfide ($CuInS_2$/ZnS) core/shell Quantum Dots
in toluene, fluorescence λ_{em} 650 nm, 1 mg/mL

900712
Graphene quantum dots
aqua green luminescent, 1 mg/mL in H_2O

900713
Graphene quantum dots
aqua green luminescent, powder

900560
Graphene quantum dots
>0.005% in H_2O

900726
Graphene quantum dots
blue luminescent, powder

920304
Indium Phosphide Zinc Sulfide (InP/ZnS) Quantum Dots
in toluene, stabilized with oleic acid, fluorescence λ_{em} 650 nm

920282
Indium Phosphide Zinc Sulfide (InP/ZnS) Quantum Dots
in toluene, stabilized with oleic acid, fluorescence λ_{em} 590 nm

920290
Indium Phosphide Zinc Sulfide (InP/ZnS) Quantum Dots
in toluene, stabilized with oleic acid, fluorescence λ_{em} 620 nm

920274
Indium Phosphide Zinc Sulfide (InP/ZnS) Quantum Dots
in toluene, stabilized with oleic acid, fluorescence λ_{em} 560 nm

920266
Indium Phosphide Zinc Sulfide (InP/ZnS) Quantum Dots
in toluene, stabilized with oleic acid, fluorescence λ_{em} 530 nm

935123
Infrared Ag_2S quantum dots
λ_{max}, 800 nm, 10 mg/mL in DMF

935158
Infrared Ag_2Se quantum dots
λ_{max}, 980 nm, 50 mg/mL in toluene

935115
Infrared PbS quantum dots
λ_{max}, 2000 nm, 100 mg/mL (in toluene)

935107
Infrared PbS quantum dots
λ_{max}, 1850 nm, 100 mg/mL in toluene

935085
Infrared PbS quantum dots
λ_{max}, 1650 nm, 100 mg/mL in toluene

935093
Infrared PbS quantum dots
λ_{max}, 1250 nm, 100 mg/mL in toluene

776777
InP/ZnS quantum dots
stabilized with oleylamine ligands, fluorescence λ_{em} 620 nm, 5 mg/mL in toluene

776793
InP/ZnS quantum dots
stabilized with oleylamine ligands, fluorescence λ_{em} 560 nm, 5 mg/mL in toluene

776750
InP/ZnS quantum dots
stabilized with oleylamine ligands, fluorescence λ_{em} 530 nm, 5 mg/mL in toluene

776785
InP/ZnS quantum dots
stabilized with oleylamine ligands, fluorescence λ_{em} 650 nm, 5 mg/mL in toluene

776769
InP/ZnS quantum dots
stabilized with oleylamine ligands, fluorescence λ_{em} 590 nm, 5 mg/mL in toluene

914541
Molybdenum disulfide quantum dots

747025
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1200 nm, 10 mg/mL in toluene

747076
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1400 nm, 10 mg/mL in toluene

747017
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1000 nm, 10 mg/mL in toluene

747084
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1600 nm, 10 mg/mL in toluene

900733
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 900 nm, 10 mg/mL in toluene

900734
PbS core-type quantum dots
fluorescence λ_{em} 1000 nm, 10 mg/mL in toluene

900738
PbS core-type quantum dots
fluorescence λ_{em} 1400 nm, 10 mg/mL in toluene

900727
PbS core-type quantum dots
fluorescence λ_{em} 1600 nm, 10 mg/mL in toluene

900728
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1500 nm, 10 mg/mL in toluene

900735
PbS core-type quantum dots
oleic acid coated, fluorescence λ_{em} 1100 nm, 10 mg/mL in toluene

905062
Perovskite quantum dots
oleic acid and oleylamine coated, fluorescence λ_{em} 530 nm, 10 mg/mL in toluene

900746
Perovskite quantum dots
oleic acid and oleylamine coated, fluorescence λ_{em} 510 nm, 10 mg/mL in toluene

900747
Perovskite quantum dots
oleic acid and oleylamine coated, fluorescence λ_{em} 480 nm, 10 mg/mL in toluene

900748
Perovskite quantum dots
oleic acid and oleylamine coated, fluorescence λ_{em} 450 nm, 10 mg/mL in toluene

914290
Tungsten disulfide quantum dots

Battery Materials

With unrivaled purity and consistency, our battery materials provide excellent, reliable performance to help our customers achieve reproducible data, even during long cycling experiments. Our diverse selection of battery materials supports all your research needs, from bench-scale to pilot-scale and even manufacturing.

- **Electrolyte Battery Materials**
- **Cathode Battery Materials**
- **Anode Battery Materials**
- **Solid-state Battery Materials**
- **Sodium-ion Battery Materials**
- **Battery-grade Precursors**

ELECTROLYTE BATTERY MATERIALS

An electrolyte is a substance that conducts electricity when dissolved in a solvent and is essential to the proper functioning of a battery. For lithium-ion batteries, the electrolyte usually consists of a lithium salt like lithium hexafluorophosphate dissolved in a blend of organic solvents like ethylene carbonate and diethyl carbonate.

Our battery-grade electrolytes offer the most consistent and reliable performance by strictly limiting trace water and acid impurities. We understand that customers have different needs

when it comes to electrolyte formulation, so we offer both **preformulated electrolytes** that can be used right out of the bottle, as well as all the **battery-grade electrolyte materials**, such as solvents, electrolytic salts, and additives, that customers need to formulate their own electrolytes in-house. This flexibility and customization ensure that our customers get exactly the right solutions for their needs, whether they are working on coin cell testing or pouch cell prototyping.

CATHODE BATTERY MATERIALS

In a lithium-ion battery, the cathode is the electrode that acquires electrons from the external circuit and plays a critical role in maintaining charge balance by simultaneously intercalating lithium ions. Typically, the cathode consists of a cathode active material (CAM, ~90%), polymeric binder (~5%), and a conductive additive (~5%). These materials are mixed to form a slurry, which is then cast onto an aluminum foil current collector to create the cathode.

The choice of CAM is a key factor that determines the energy density of the lithium-ion battery through cell voltage and capacity. Our **high-quality CAMs** include popular materials such as lithium cobalt oxide ($LiCoO_2$), lithium manganese oxide ($LiMn_2O_4$), lithium iron phosphate ($LiFePO_4$ or LFP), and lithium nickel manganese cobalt oxide ($LiNiMnCoO_2$ or NMC), each offering strengths and tradeoffs with energy density, thermal stability, and cost-effectiveness. We also offer **ready-to-cast slurries** and **ready-to-use electrode sheets** for our customers who want to skip the time and labor of cathode processing and expedite their research.

ANODE BATTERY MATERIALS

In a lithium-ion battery, the anode is the "negative" or "reducing" electrode that provides a source of electrons. Classically, anode materials are made of graphite, carbon-based materials, or metal oxides, which are called intercalation-type anodes. Next-generation conversion-type anodes, such as silicon and lithium metal are gaining popularity due to their higher energy density.

We provide a range of **high-quality anode materials** including natural and artificial graphite, **silicon anode materials** such as nanoparticles and silicon-carbon composites, lithium titanate (LTO), and metallic lithium. We also offer anode materials with carbon and LATP-coatings to tailor the performance to the customer needs as well as **ready-to-cast slurries** and **ready-to-use electrode sheets**.

SOLID-STATE BATTERY MATERIALS

Solid-state batteries use a solid electrolyte to replace the liquid electrolyte used in current lithium-ion batteries and are one of the most promising next-generation battery technologies

to improve safety and energy density. Solid electrolytes can be made from a range of materials, such as ceramics, polymers, and glasses, each offering unique advantages and properties. Our high-quality **solid-state electrolyte materials** are available in a variety of compositions, including sulfides, oxides, and halides. The materials are carefully synthesized with controlled particle size, crystallinity, and purity to provide reliable and reproducible performance in electrochemical cells.

SODIUM-ION BATTERY MATERIALS

Sodium-ion batteries are an emerging alternative to lithium-ion batteries that offer significant advantages such as lower material costs, improved safety, and abundant resources. Sodium-ion batteries use sodium ions instead of lithium ions to store and transfer electric charges.

We provide a range of high-quality **sodium-ion battery materials**. Our sodium-ion materials include electrolytes, cathode and anode active materials, precursors, and electrode sheets, all designed to deliver high energy density, long cycle life, and consistent, reproducible performance.

BATTERY-GRADE PRECURSORS

Precursors are the compounds used to make the cathode or anode active materials. We offer a range of **high-quality salt precursors** for synthesis of battery materials, including battery-grade lithium salts such as lithium hydroxide and lithium carbonate and high-purity transition metal salts such as cobalt, manganese, nickel, aluminum, and iron salts. Whether precursors for solid-state reactions, co-precipitation, or wet chemical processing, we have the high-purity precursors to help our customers synthesize top-performing battery materials reliably and reproducibly.

Our team of experts is always available to help you navigate the vast array of battery materials and develop the best solutions that maximize the performance of your batteries. Discover these and additional battery materials, including our battery grade and greener alternative products. Check out our aluminum, copper, and nickel battery foil materials, high-viscosity anode and cathode binders, and carbon nanomaterials for all your research and commercial needs.

917060
1 M Biphenyl in DME
a precursor solution to prepare the prelithiation/presodiation reagent for disordered carbon, SiO, Sn, Sb, P, and S electrodes

900873
1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide
>99%, <500 ppm H_2O

900804
1-Butyl-2,3-dimethylimidazolium bis(trifluoromethylsulfonyl)imide

≥99%, H_2O <500 ppm

900802
1-Butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide
≥99%, H_2O <500 ppm

900856
1-Butyl-3-methylimidazolium chloride
≥99%

900813
1-Ethyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide
≥99%, H_2O <500 ppm

900787
1-Ethyl-3-methylimidazolium acetate
≥98%

900801
1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide
≥99%, H_2O ≤500 ppm

900771
1-Ethyl-3-methylimidazolium chloride
>99%

900779
1-Ethyl-3-methylimidazolium hexafluorophosphate
≥99%, <500 ppm H_2O

900772
1-Ethyl-3-methylimidazolium tetrafluoroborate
≥99%, <1000 ppm H_2O

900806
1-Methyl-1-propylpiperidinium bis(trifluoromethylsulfonyl)imide
≥99%, H_2O ≤500 ppm

933988
1,1,2,2-Tetrafluoroethyl 2,2,2-trifluoroethyl ether
≥99.5%, anhydrous, acid <=100 ppm, battery grade

933961
1,1,2,2-Tetrafluoroethyl 2,2,3,3-tetrafluoropropylether
≥99%, <=10 ppm acid, battery grade

774456
1,2-Propyleneglycol sulfite
≥98%

809985
1,3-Propanesultone
battery grade, ≥99%, acid <200 ppm, H2O <100 ppm

774243
1,3-Propylene sulfite
99%

809993
2-Propynyl methanesulfonate
battery grade, ≥99.5%, acid <200 ppm, H2O <100 ppm

733466
Acetonitrile
electronic grade, 99.999% trace metals basis

934674
Activated carbon
Electrode sheet, copper substrate, size 5 in. × 10 in.

900020
Adiponitrile
battery grade, >99%, acid <200 ppm, H2O <100 ppm

718203
Allyl methyl sulfone
96%

934011
Bis(2,2,2-trifluoroethyl) carbonate
≥99%, anhydrous, battery grade

484164
Carbon
glassy, spherical powder, 2-12 µm, 99.95% trace metals basis

702110
Carbon, mesoporous
hydrophilic pore surface

702102
Carbon, mesoporous

699632
Carbon, mesoporous
nanopowder, less than 500 ppm Al, Ti, Fe, Ni, Cu, and Zn combined

699640
Carbon, mesoporous
less than 100 ppm Al, Ti, Fe, Ni, Cu, and Zn combined

544841
Cerium(IV) oxide
nanopowder, <25 nm particle size (BET)

255645
Cesium carbonate
99.995% trace metals basis

764566
Cobalt sulfide
99.98% trace metals basis

483591
Diamond
synthetic monocrystalline powder, ≤1 µm

900018
Diethyl carbonate
battery grade, ≥99%, acid <10 ppm, H2O <10 ppm

809942
Dimethyl carbonate
battery grade, ≥99.9%, acid <10 ppm, H2O <10 ppm

934046
Ethyl 1,1,2,2-tetrafluoroethyl ether
≥99%, anhydrous, battery grade

754935
Ethyl methyl carbonate
99%

809934

Ethyl methyl carbonate
battery grade, 99.9%, acid <10 ppm, H2O <10ppm

709980
Ethyl methyl sulfone
for energy applications, 97%

809950
Ethylene carbonate
battery grade, ≥99%, acid <10 ppm, H2O <10 ppm

774251
Ethylene sulfite
≥99.0%

757349
Fluoroethylene carbonate
99%

901686
Fluoroethylene carbonate
battery grade, ≥99%, acid <200 ppm, anhydrous

935905
Fluoroethylene carbonate
Technipur®, 99% (GC)

934690
Graphite
electrode sheet, copper substrate, size 5 in. × 10 in.

496553
Graphite
rod, L 150 mm, diam. 6 mm, 99.995% trace metals basis

496537
Graphite
rod, L 150 mm, diam. 3 mm, low density, 99.995% trace metals basis

496588
Graphite
powder, <150 µm, 99.99% trace metals basis

496596
Graphite
powder, <45 µm, ≥99.99% trace metals basis

282863
Graphite
powder, <20 µm, synthetic

934666
Hard carbon
electrode sheet, copper substrate, size 5 in. × 10 in.

934038
Hexafluoroisopropyl methyl ether
≥99%, anhydrous, battery grade

918334
High-performance silicon anode
100 nm silicon particles in crosslinked conducting polyanaline matrix

912409
High-performance silicon anode
1 micron silicon particles in crosslinked conducting polyanaline matrix

704288
Lanthanum strontium cobalt ferrite
LSCF 6428

734632
Lanthanum strontium cobalt ferrite
powder, 0.6 µm particle size

763691
Lanthanum strontium cobaltite, LSC-82
99% trace metals basis

704296
Lanthanum strontium manganite
LSM-20, ≥99%

704261
Lanthanum strontium manganite
LSM-35

915394
Lithium Aluminum Titanium Phosphate (LATP) powder
battery grade

935832
Lithium bis(fluorosulfonyl)imide
99.9% trace metals basis, battery grade

757136
Lithium bis(oxalato)borate

919977
Lithium bis(trifluoromethanesulfonyl)imide
anhydrous, 99.99% trace metals basis

920398
Lithium bis(trimethylsilyl)amide
99.9% trace metals basis

725145
Lithium cobalt phosphate
powder, ≥99% (trace metals analysis)

442704
Lithium cobalt(III) oxide
99.8% trace metals basis

774138
Lithium difluoro(oxalato)borate

920347
Lithium hexafluoroarsenate(V)
anhydrous, 99.9% trace metals basis

920371
Lithium hexafluorophosphate
99.9% trace metals basis

450227
Lithium hexafluorophosphate
battery grade, ≥99.99% trace metals basis

934836
Lithium hexafluorophosphate solution
in ethylene carbonate and dimethyl carbonate with vinylene carbonate additive, 1.2 M $LiPF_6$ in EC/DMC=30/70 (w/w) + 1 wt.% VC, battery grade, ≥99.95% trace metals basis

934828
Lithium hexafluorophosphate solution
in ethylene carbonate and ethyl methyl carbonate with vinylene carbonate additive, 1.0 M $LiPF_6$ in EC/EMC=30/70 (w/w) + 1 wt.% VC, battery grade

934844
Lithium hexafluorophosphate solution
in ethylene carbonate and ethyl methyl carbonate with vinylene carbonate additive, 1.2 M $LiPF_6$ in EC/EMC=30/70 (w/w) + 1 wt.% VC, battery grade, ≥99.5% trace metals basis

920312
Lithium hydroxide
anhydrous, 99.9% trace metals basis

934771
Lithium iron phosphate
electrode sheet, aluminum substrate, size 5 in. × 10 in.

759546
Lithium iron(II) phosphate
powder, <5 µm particle size (BET), >97% (XRF)

442712
Lithium iron(III) oxide
95%

916099
Lithium lanthanum titanate (LLTO)
powder, battery grade

725137
Lithium manganese dioxide
powder, <1 µm particle size, ≥98% trace metals basis

725110
Lithium manganese nickel oxide
spinel, powder, <0.5 µm particle size (BET), >99%

915432
Lithium manganese nickel oxide
spinel, powder, battery grade

725129
Lithium manganese oxide
spinel, powder, <0.5 µm particle size (BET), ≥98% trace metals basis

916439
Lithium Manganese Oxide spinel (LMO) powder
battery grade

765171
Lithium nickel cobalt aluminium oxide
electrode sheet, aluminum substrate, size 5 in. × 10 in.

760994
Lithium nickel cobalt aluminium oxide
powder, <0.5 µm particle size, >98%

760986
Lithium nickel cobalt oxide
powder, <0.5 µm particle size, >98%

757365
Lithium nickel dioxide
powder, <3 µm particle size (BET), ≥98% trace metals basis

765163
Lithium nickel manganese cobalt oxide
electrode sheet, aluminum substrate, size 5 in. × 10 in.

761001
Lithium nickel manganese cobalt oxide
powder, <0.5 µm particle size, >98%

932558
Lithium Nickel Manganese Cobalt Oxide (NMC111) Crosslinked Polyaniline Composite
Cathode for Lithium ion Battery

930938
Lithium nitrate
battery grade, anhydrous, 99.999% trace metals basis

634565
Lithium perchlorate
battery grade, dry, 99.99% trace metals basis

916374
Lithium phosphorus sulfide (LPS) powder
battery grade

916137
Lithium phosphorus sulfur chloride (LPSCl) powder
battery grade

920339
Lithium sulfate
anhydrous, 99.5% trace metals basis

213241
Lithium sulfide
99.98% trace metals basis

451622
Lithium tetrafluoroborate
ultra dry, powder, 99.99% trace metals basis

935913
Lithium tetrafluoroborate
Technipur®, ultra dry, powder, 99.99% trace metals basis

901695
Lithium tetrafluoroborate
≥98%, acid <200 ppm, anhydrous

915114
Lithium tin phosphorus sulfide (LSPS)
battery grade

915939
Lithium titanate
spinel "LTO" powder, battery grade

934003
Methyl (2,2,2-trifluoroethyl) carbonate
≥99%, anhydrous, battery grade

399523
Nickel(II) oxide
green, −325 mesh, 99%

203882
Nickel(II) oxide
99.99% trace metals basis

934682
NMC532
electrode sheet, aluminum substrate, size 5 in. × 10 in.

934755
NMC622
electrode sheet, aluminum substrate, size 5 in. × 10 in.

934712
NMC811
electrode sheet, aluminum substrate, size 5 in. × 10 in.

345245
Phosphoric acid
85 wt. % in H_2O, 99.99% trace metals basis

452289
Phosphoric acid
≥85 wt. % in H_2O, ≥99.999% trace metals basis

468096
Poly(tetrafluoroethylene)
powder, 35 µm particle size

81377
Poly(tetrafluoroethylene)
beads

427888
Polypropylene
Isotactic, average M_w ~250,000, average M_n ~67,000

427861
Polypropylene
Isotactic, average M_w ~340,000, average M_n ~97,000

809969
Propylene carbonate
battery grade, ≥99%, acid <10 ppm, H2O <10 ppm

928011
Ready-to-Cast $LiFePO_4$ (LFP) Slurry for Lithium ion battery

935387
Ready-to-Cast $LiMn_2O_4$ (LMO) Slurry for Lithium ion battery

Blade coatable ink slurry for lithium ion battery

928003
Ready-to-Cast $LiNi_{0.33}Mn_{0.33}Co_{0.33}O_2$ (NMC111) Slurry for Lithium ion battery

934267
Ready-to-Cast Lithium Titanate ($Li_4Ti_5O_{12}$) Slurry for Lithium ion battery
Blade coatable ink slurry for Lithium ion battery

934259
Ready-to-Cast Si Anode Slurry for Lithium ion battery
1-micron silicon particles

921386
Reduced graphene oxide enhanced NTCDA composite for battery

921351
Reduced graphene oxide enhanced PAQS composite for battery

921378
Reduced graphene oxide enhanced PMDA composite for battery

933759
Silicon
nanoparticles, 10 nm avg. part. size, ≥99% trace metals basis, battery grade

933767
Silicon
nanoparticles, 40 nm avg. part. size, ≥99% trace metals basis

924458
Single-layer graphene sheets for battery
Bio-sourced, avg. no. of layers, 1

933953
Sodium difluoro(oxalato)borate
≥99%, battery grade

934704
Sodium manganese oxide
$Na_{0.44}MnO_2$, powder, ≥99% trace metals basis

931950

Sodium perchlorate
anhydrous, ≥99.9% trace metals basis

932566
Sodium Terephthalate Composite
high-capacity anode for sodium ion batteries

934747
Sulfur
electrode sheet, aluminum substrate, size 5 in. × 10 in.

809977
Vinylene carbonate
battery grade, 99.5%, acid <200 ppm, H2O <100 ppm

Solar Energy Materials

Solar technology has advanced rapidly as efforts have increased to use less carbon energy and employ more renewable resources and green energy to stay abreast of global energy demands. Research in this area has focused on maximizing solar cell efficiency by applying new technologies and developing efficient, low-cost manufacturing materials. We offer powerful and stable solar energy materials that make the difference in your commercial and research solar energy applications.

- **Perovskite Solar Cell Materials**
- **Alternative Solar Cell Materials**

PEROVSKITE SOLAR CELL MATERIALS

The structure of the materials used and the ability to form thin films significantly affects solar cell efficiency. Hybrid perovskites have a distinctive crystal structure of organic-inorganic complexes. Perovskites with lead as the central cation produce the best photovoltaic efficiency. We offer lead iodide, specifically designed for enhanced solar cell performance. Our perovskite-structured hybrid compounds are well-suited for photovoltaics due to their self-assembling characteristics, and tunable compositions and structures. We also offer 2D perovskites that can be processed in liquid solutions or dispersions to attain a layered 2D structure over traditional 3D structures. Due to their stability and material versatility, our 2D perovskites find use in solar cells, LEDs, and phototransistors.

ALTERNATIVE SOLAR CELL MATERIALS

We offer a complete portfolio of precursors for the synthesis of organometallic perovskites. Our lead-free, nontoxic materials exhibit good stability and superior optoelectronic properties. We provide quantum-dot based perovskites, $CsPbX_3$ (X = Cl, Br, I) that possess high photoluminescence efficiency and narrow emission, emit in the visible spectral regime, and have increased power conversion efficiency. Our cadmium-free perovskite quantum dots are a unique class of hybrid inorganic and organic metal halide-based perovskite materials. They have a direct bandgap which can be useful for a variety of optoelectronic devices. Moreover, perovskite light-absorbing layers can be fabricated via a spin-coating process with our large selection of organohalides.

We also offer advanced materials for **organic photovoltaics (OPV)** including non-fullerene acceptors, polymeric donors, transport layer materials to support the entire workflow.

913324
2- Methyloxyethylammonium iodide

805971
Acetamidinium iodide

806196
Benzylammonium iodide

913081
Butane-1,4-diammonium bromide

912824
Butane-1,4-diammonium iodide

915181
Cesium bromide
AnhydroBeads™, 99.999% trace metals basis, (Perovskite grade)

914545
Cesium chloride
AnhydroBeads™, 99.999% trace metals basis, (Perovskite grade)

914819
Cesium iodide
AnhydroBeads™, 99.999% trace metals basis, (Perovskite grade)

912107
Di-iso-Propylammonium iodide

912859
Di-isopropylammonium bromide

912557
di-*n*-butylammonium dimethylammonium lead(II) decaiodide
n = 3

910961
di-*n*-butylammonium lead(II) tetraiodide
n = 1

912816
di-*n*-butylammonium methylammonium lead(II) heptaiodide
n = 2

912301
di-*n*-butylammonium tetramethylammonium lead(II) hexadecaiodide

n = 5

914363
di-*n*-butylammonium trimethylammonium lead(II) tridecaiodide
n = 4

912603
Di-*n*-propylammonium bromide

912379
Di-*n*-Propylammonium iodide

910945
di-phenylethylammonium lead(II) tetrabromide
n = 1

910937
di-phenylethylammonium lead(II) tetraiodide
n = 1

900872
Dimethylammonium bromide
≥98%

805831
Dimethylammonium iodide

900833
Ethane-1,2-diammonium bromide
≥98%

900852
Ethane-1,2-diammonium iodide
≥98%

805823
Ethylammonium Iodide

900835
Formamidinium bromide
≥98%

901437
Formamidinium bromide
≥99%, anhydrous

901436
Formamidinium iodide
≥99%, anhydrous

806048
Formamidinium iodide

932604
Ge-OMe TPA

900839
Guanidinium bromide
≥98%

901450
Guanidinium iodide
≥99%, anhydrous

806056
Guanidinium iodide
≥99%

900821
Imidazolium bromide
≥98%

915440
Lead(II) acetate trihydrate
99.999% trace metals basis, organic soluble for perovskites

915696
Lead(II) bromide
Anhydrobeads™, 99.999% trace metals basis, (perovskite grade)

900168
Lead(II) iodide
99.999% trace metals basis, perovskite grade

909114
Methyl germanane

793507
Methylammonium bromide
98%

806498
Methylammonium bromide

901435
Methylammonium bromide
≥99%, anhydrous

793493
Methylammonium iodide
98%

806390
Methylammonium iodide

901434
Methylammonium iodide
≥99%, anhydrous

914541
Molybdenum disulfide quantum dots

912069
Morpholinium bromide

900817
***n*-Butylammonium bromide**
≥98%

805874
***n*-Butylammonium iodide**

912875
***n*-Dodecylammonium bromide**

912581
***n*-Dodecylammonium iodide**

912611
***n*-Hexylammonium bromide**

912344
***n*-Hexylammonium iodide**

912638
***n*-Octylammonium bromide**

913065
***n*-Octylammonium iodide**
Greatcell Solar®

805858
***n*-Propylammonium iodide**

912360
***N*,*N*-Diethylethane-1,2-diammonium bromide**

912158
***N*,*N*-Diethylethane-1,2-diammonium iodide**

912093
***N*,*N*-Diethylpropane-1,3-diammonium bromide**

912867
***N*,*N*-Dimethylethane-1,2-diammonium bromide**

913340
***N*,*N*-Dimethylpropane-1,3-diammonium iodide**

900829
Phenethylammonium bromide
≥98%

805904
Phenethylammonium iodide

932418
Poly[bis(4-phenyl)(2,4,6-trimethylphenyl)amine]

924385
Silicon Tetrabiphenyl MeOTAD

914290
Tungsten disulfide quantum dots

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70
Казахстан +7(7172)727-132
Киргизия +996(312)96-26-47

www.sigmaaldrich.nt-rt.ru | | scx@nt-rt.ru