

Thermo Fisher
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Chemicals

A constant flow of innovation
for battery technology

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Battery Technology

All batteries are made up of three major components: a negative electrode (Anode), a positive electrode (cathode) and an electrolyte, a substance that reacts chemically with the anode and cathode. Metals, metal oxides, and solvents are all essential in battery production. Thermo Fisher Scientific offers a range of quality products to support battery research and manufacturing.

Anodes

Stock No.	Description	Available Sizes
39724	Carbon black, acetylene, >99.9%	250 g, 1 kg, 3 kg
45527	Carbon black, acetylene, 100% compressed, >99.9%	250 g, 2x500 g
H30253	Carbon black, Super P™ Conductive, 99+% (metals basis)	25 g, 100 g
46311	Fullerene powder, 99% C60	250 mg, 1 g, 5 g
11155	Germanium(IV) oxide, Puratronic™, 99.999%	5 g, 25 g, 100 g
10510	Germanium(IV) oxide, White powder/flake/crystalline/beads, etc., 99.9999%	5 g, 25 g, 100 g
40798	Graphite powder, synthetic, conducting grade, -325 mesh, 99.9995% (metals basis)	28 g, 113 g, 227 g, 454 g
10769	Lithium foil, 0.75mm (0.03in) thick x 19mm (0.75in) wide, 99	25 g
89709	Silicon(IV) oxide, 99.8% (metals basis)	250 g, 1 kg, 5 kg
88777	Silicon(IV) oxide, 99.995% (metals basis)	25 g, 100 g
10856	Silicon(IV) oxide, Puratronic™ 99.999% (metals basis)	100 g
12283	Tin(IV) oxide, 99.9% (metals basis)	100 g, 500 g, 2 kg
10760	Zinc shot, 1-6mm (0.04-0.24in), Puratronic™, 99.9999% (metals basis)	50 g, 250 g, 500 g, 1 kg

Binders

Stock No.	Description	Available Sizes
L04280	Acrylic acid, 99%, stab. with ca 200ppm 4-methoxyphenol	100 g, 500 g
J61887	Alginic acid sodium salt, high viscosity	100 g, 250 g, 1 kg

Cathodes

Stock No.	Description	Available Sizes
14049	Lithium cobalt(III) oxide, 97%	50 g, 250 g, 1 kg
42090	Lithium cobalt(III) oxide, 99.5% (metals basis)	25 g, 100 g
40250	Lithium manganese(III,IV) oxide, 99.5% (metals basis)	25 g, 100 g
12839	Lithium sulfide, 99.9% (metals basis)	2 g, 10 g, 50 g, 250 g
10755	Sulfur pieces, 99.99% (metals basis), Puratronic™	10 g, 50 g, 250 g
43766	Sulfur powder, 99.5%	500 g, 2 kg
10343	Sulphur Pieces, Puratronic™, 99.9995% (metals basis)	25 g, 100 g, 500 g
33394	Sulphur Powder, sublimed, -100 mesh, 0.995	500 g, 2 kg
44263	Zinc oxide, 99.9% (metals basis)	250 g, 1 kg, 5 kg

Electrolytes

Stock No.	Description	Available Sizes
13408	Lithium bromide, anhydrous, 99% min	100 g, 500 g, 2500 g
13407	Lithium hydroxide, anhydrous, 98%	25 g, 100 g, 500 g
13405	Lithium nitrate, anhydrous, 99%	25 g, 250 g, 1 kg, 5 kg
10804	Manganese(II) chloride tetrahydrate, Puratronic™, 99.999% (metals basis)	10 g, 50 g
A16199	Potassium hydroxide, flake, 85%	500 g, 2500 g, 10000 g
A10552	Sodium bromide, 99+% (dry wt.), water <1.0%	250 g, 1000 g, 5000 g
H27307	Lithium bis(trifluoromethylsulfonyl)imide, 98+%	10 g, 50 g
11529	Lithium hexafluorophosphate, 98%	1 g, 10 g, 50 g
11528	Lithium tetrafluoroborate, 98%	10 g, 50 g

Separators

Stock No.	Description	Available Sizes
42180	Nafion™ N-117 membrane, 0.180mm thick, ≥0.90 meq/g exchange capacity	15 × 15 cm, 30 × 30 cm
42179	Nafion™ N-115 membrane, 0.125mm thick, ≥0.90 meq/g exchange capacity	15 × 15 cm, 30 × 30 cm, 60 × 60 cm
A10239	Polyethylene powder, low density, 500 micron	100 g, 500 g, 2500 g
45176	Polyethylene sheet, High Density, 12.7mm (0.5 in.) thick	300 × 300 mm
45175	Polyethylene sheet, Low Density, 3.18mm (0.125 in.) thick	300 × 300 mm
45197	Polyethylene sheet, Low Density, 6.35mm (0.25 in.) thick	300 × 300 mm
45196	Polypropylene sheet, 3.18mm (0.125mm) thick	300 × 300 mm

Metals- battery components

Stock No.	Description	Available Sizes
43424	Aluminum foil, 0.25mm (0.01 in.) thick, annealed, Puratronic™, 99.9995% (metals basis)	50 × 50 mm, 100 × 100 mm, 100 × 500 mm
44332	Aluminum foil, 0.5mm (0.02 in.) thick, annealed, Puratronic™, 99.9999% (metals basis)	50 × 50 mm, 100 × 100 mm, 100 × 500 mm
46714	Aluminum Magnesium gauze, alloy 5056, 16 mesh woven from 0.24mm (0.0095 in.) dia. wire	75 × 75 mm, 150 × 150 mm
46579	Aluminum Magnesium gauze, alloy 5056, 20 mesh woven from 0.23mm (0.009 in.) dia. wire	75 × 75 mm, 150 × 150 mm, 300 × 300 mm
40707	Aluminum Ultrathin foil, 0.8 micron thick, 99.1% (metals basis)	30 × 30 mm, 140 × 140 mm
46986	Copper foil, 0.025mm (0.001 in.) thick, annealed, uncoated, 99.8% (metals basis)	30 × 30 cm, 30 × 150 cm, 30 × 1000 cm
42189	Copper foil, 99.999% (metals basis), Puratronic™	50 × 50 mm, 100 × 100 mm, 100 × 300 mm
14092	Magnesium Aluminum Zinc wire, 3.18mm (0.125 in.) dia., 90cm (35 in.) long	5 × 90 cm, 25 × 90 cm, 100 × 90 cm
41785	Nickel Wire, 0.15mm (0.006 in.) dia., approx.99%, Nickel 200 (metals basis)	250 m, 1000 m
40946	Stainless Steel wire, 0.51mm (0.02 in.) dia., Type 304	50 cm, 150 cm

Organic solvents/electrolyte components

Stock No.	Description	Available Sizes
H27270	1-Butyl-2,3-dimethylimidazolium chloride, 99%	50 g
A12260	1-Methyl-2-pyrrolidinone, 99+%	10000 g
19740	1-n-Butylpyridinium chloride, 98%	50 g
H61502	4-Fluoro-1,3-dioxolan-2-one, 98%	25 g, 100 g
A12477	Diethyl carbonate, 99+%	2500 ml, 10000 ml
A15735	Ethylene carbonate, 99%	500 g, 2500 g, 10000 g
H61502	Fluoroethylene carbonate, 4-Fluoro-1,3-dioxolan-2-one, 98%	100 g
A15552	Propylene Carbonate, 99%	1000 g, 2.5 kg
41963	Trichloroethylene, Electronic Grade, 99.5+%	1 L, 4 L, 4 x 4 L
H60822	Vinyl ethylene carbonate, 4-Vinyl-1,3-dioxolan-2-one, 99%	50 g, 250 g

Application highlights

Research

The battery chemicals offered from Thermo Fisher Scientific are a great choice for the academic and industrial research laboratories involved in battery research and development.

The metals, metal oxides and selective liquid and solid electrolytes are very popular among the battery researchers.

Electronic devices

The battery chemicals are extensively used in various components for electronics applications. Rechargeable batteries are the common choice for the fast-drain electronic devices such as mobile phones and laptops. Non-rechargeable batteries are preferred in slow-drain devices like clocks and remote controls.

Automobile industry

Rechargeable batteries revolutionized the automobile industry. Continuous development of improvement in battery technologies is evident from recent advancements in electric vehicles. The battery chemicals we offer in our portfolio are very important components of electric vehicles (EV) battery technology.

Browse the complete portfolio of products supporting battery research and manufacturing. For more information visit: thermofisher.com/battery-technology

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