



A constant flow of innovation
for battery technology

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

Thomas No.	Mfr. No.	Description	Available Sizes
C872M69	39724	Carbon black, acetylene, 50% compressed, non regulated	250g
C872M70	39724	Carbon black, acetylene, 50% compressed, non haz	1kg
C872M71	39724	Carbon black, acetylene, 50% compressed, UN1325	3kg
C852M78	45527-30	Carbon black, acetylene	250g
C852M79	45527-95	Carbon black, acetylene, UN1325	2 x 500g
C858X35	H30253-14	CRBN black Super P® Conductive 99+%, non haz	25g
C858X36	H30253-22	CRBN black Super P® Conductive 99+%, UN1325	100g
C851J29	46311-03	Fullerene powder, 99% C ₆₀ , UN1325	1g
C851J30	46311-06	Fullerene powder, 99% C ₆₀ , UN1325	5g
C851J28	46311-MD	Fullerene powder, 99% C ₆₀ , UN1325	250mg
C952U00	11155-06	Germanium(IV) oxide	5g
C952U01	11155-14	Germanium(IV) oxide	25g
C952U02	11155-22	Germanium(IV) oxide	100g
C952G51	10510-06	Germanium(IV) oxide	5g
C952G52	10510-14	Germanium(IV) oxide	25g
C952G53	10510-22	Germanium(IV) oxide	100g
C880L56	40798-TA	Graphite powder, synthetic, conducting grade, -325 mesh, UN1325	28g
C880L57	40798-TB	Graphite powder, synthetic, conducting grade, -325 mesh, UN1325	113g
C880L58	40798-TC	Graphite powder, synthetic, conducting grade, -325 mesh, UN1325	227g
C880L59	40798-TD	Graphite powder, synthetic, conducting grade, -325 mesh, UN1325	454g
C952L76	10769-14	Lithium foil, 0.75mm thick x 19mm wide, UN1415	25g
C968Z90	89709-30	Silicon(IV) oxide	250g
C968Z91	89709-A1	Silicon(IV) oxide	1kg
C968Z92	89709-A7	Silicon(IV) oxide	5kg
C968Y33	88777-14	Silicon(IV) oxide	25g
C968Y34	88777-22	Silicon(IV) oxide	100g
C952N15	10856-14	Silicon(IV) oxide	25g
C952N16	10856-22	Silicon(IV) oxide	100g
C863R81	12283-22	Tin(IV) oxide,	100g
C863R82	12283-36	Tin(IV) oxide,	500g
C863R83	12283-A3	Tin(IV) oxide,	2kg
C952L67	10760-18	Zinc shot, 1-6mm	50g
C952L68	10760-30	Zinc shot, 1-6mm	250g
C952L69	10760-A1	Zinc shot, 1-6mm	1kg

Binders

Thomas No.	Mfr. No.	Description	Available Sizes
C870P04	L04280-0E	Acrylic acid, UN2218	2.5kg
C870P02	L04280-22	Acrylic acid, UN2218	100g
C870P03	L04280-36	Acrylic acid, UN2218	500g
C872C60	J61887-22	Alginic acid sodium salt, high viscosity	100g
C872C61	J61887-30	Alginic acid sodium salt, high viscosity	250g
C872C62	J61887-A1	Alginic acid sodium salt, high viscosity	1kg

Cathodes

Thomas No.	Mfr. No.	Description	Available Sizes
C961X48	14049-18	Lithium cobalt(III) oxide, 97%	50g
C961X49	14049-30	Lithium cobalt(III) oxide, 97%	250g
C961X50	14049-A1	Lithium cobalt(III) oxide, 97%	1kg
C871M17	42090-14	Lithium cobalt(III) oxide	25g
C871M18	42090-22	Lithium cobalt(III) oxide	100g
C880D71	40250-14	Lithium manganese(III,IV) oxide	25g
C880D72	40250-22	Lithium manganese(III,IV) oxide	100g
C863X00	12839-04	Lithium sulfide, UN2813	2g
C863X01	12839-09	Lithium sulfide, UN2813	10g
C863X02	12839-18	Lithium sulfide, UN2813	50g
C863X03	12839-30	Lithium sulfide, UN2813	250g
C952L55	10755-09	Sulfur pieces, Puratronic, UN1350	10g
C952L56	10755-18	Sulfur pieces, Puratronic, UN1350	50g
C952L57	10755-30	Sulfur pieces, Puratronic UN1350	250g
C880Q99	43766-36	Sulfur powder, -325 mesh, UN1350	500g
C880R00	43766-A3	Sulfur powder, -325 mesh, UN1350	2kg
C873H52	10343-14	Sulfur pieces, UN1350	25g
C873H53	10343-22	Sulfur pieces, UN1350	100g
C873H54	10343-36	Sulfur pieces, UN1350	500g
C874Z97	33394-36	Sulfur powder, sublimed, -100 mesh, UN1350	500g
C874Z98	33394-A3	Sulfur powder, sublimed, -100 mesh, UN1350	2kg
C880Z55	44263-30	Zinc oxide, UN3077	250g
C880Z56	44263-A1	Zinc oxide, UN3077	1kg
C880Z57	44263-A7	Zinc oxide, UN3077	5kg

Electrolytes

Thomas No.	Mfr. No.	Description	Available Sizes
C961R61	13408-22	Lithium bromide, anhydrous	100g
C961R62	13408-36	Lithium bromide, anhydrous	500g
C961R58	13407-14	Lithium hydroxide, anhydrous, UN2680	25g
C961R59	13407-22	Lithium hydroxide, anhydrous, UN2680	100g

Electrolytes continued on page 4

Electrolytes *continued from page 3*

Thomas No.	Mfr. No.	Description	Available Sizes
C961R60	13407-36	Lithium hydroxide, anhydrous 500g UN2680	500g
C961R51	13405-14	Lithium nitrate, anhydrous 25g UN2722	25g
C961R52	13405-30	Lithium nitrate, anhydrous 250g UN2722	250g
C961R53	13405-A1	Lithium nitrate, anhydrous 1kg UN2722	1kg
C961R54	13405-A7	Lithium nitrate, anhydrous 5kg UN2722	5kg
C952M24	10804-09	Manganese(II) chloride tetrahydrate 10g	10g
C952M25	10804-18	Manganese(II) chloride tetrahydrate 50g	50g
C950L86	A16199-0C	Potassium hydroxide, flake, 85% 10KG UN1813	10kg
C950L85	A16199-0E	Potassium hydroxide, flake, 85%, UN1813	2.5kg
C972H45	A10552-0B	SOD BRMIDE 99+% (dry wt.) WATR <1.0%	1kg
C972H46	A10552-0I	SOD BRMIDE 99+% (dry wt.) WATR <1.0%	5kg
C972H44	A10552-30	SOD BRMIDE 99+ (dry wt.) WATR <1.0%	250g

Interstitials

Thomas No.	Mfr. No.	Description	Available Sizes
C857C37	H27307-09	LITH bis(triFLROMETHLSulfonyl)imide, UN2923	10g
C857C38	H27307-18	LITH bis(triFLROMETHLSulfonyl)imide, UN2923	50g
C873M28	11529-03	Lithium hexafluorophosphate, 98%, UN2923	1g
C873M29	11529-09	Lithium hexafluorophosphate, 98%, UN2923	10g
C873M30	11529-18	Lithium hexafluorophosphate, 98%, UN2923	50g
C873M26	11528-09	Lithium tetrafluoroborate, 98%, UN3260	10g
C873M27	11528-18	Lithium tetrafluoroborate, 98%, UN3260	50g
1179G24	42180-4X	Nafion N-117 membrane .180mmTHK	60 x 60cm
1179G23	42180-RF	Nafion N-117 membrane .180mmTHK	30 x 30cm
1179G22	42180-VA	Nafion N-117 membrane .180mmTHK	15 x 15cm
1179G21	42179-4X	Nafion N-115 membrane .125mmTHK	60 x 60cm
1179G20	42179-RF	Nafion N-115 membrane .125mmTHK	30 x 30cm
1179G19	42179-VA	Nafion N-115 membrane .125mmTHK	15 x 15cm
C973Z69	A10239-0E	PLYETHLene PWR LO density 500 MIC	2.5kg
C973Z67	A10239-22	PLYETHLene PWR LO density 500 MICRN	100g
C973Z68	A10239-36	PLYETHLene PWR LO density 500 MICRN	500g
1178H30	45176-HB	PLYETHLene sheet HI Density	300 x 300mm
1178H29	45175-HB	PLYETHLene sheet LO Density	300 x 300mm
1178H55	45197-HB	PLYETHLene sheet LO Density	300 x 300mm
1178H54	45196-HB	PLYPROPLene sheet 3.18mm	300 x 300mm

Metals-Battery Components

Thomas No.	Mfr. No.	Description	Available Sizes
1179L63	43424-FI	ALUM FL .25mmTHK ANNLD 99.9995%	50 x 50mm
1179L64	43424-GH	ALUM FL .25mmTHK ANNLD 99.9995	100 x 100mm
1179L65	43424-HP	ALUM FL .25mmTHK ANNLD 99.9995	100 x 500mm

Metals-Battery Components *continued from page 4*

Thomas No.	Mfr. No.	Description	Available Sizes
C879A53	44332-FI	Aluminum foil, 0.5mm thick, annealed	50 x 50mm
C879A54	44332-GH	Aluminum foil, 0.5mm thick, annealed	100 x 100mm
C879A55	44332-HP	Aluminum foil, 0.5mm thick, annealed	100 x 500mm
1179N08	46714-FL	ALUM MAG GAUZ alloy 5056 16MSH	75 x 75mm
1179N09	46714-GT	ALUM MAG GAUZ alloy 5056 16MSH	150 x 150mm
1179M80	46579-FL	ALUM MAG GAUZ alloy 5056 20MSH	75 x 75mm
1179M81	46579-GT	ALUM MAG GAUZ alloy 5056 20MSH	150 x 150mm
1179M82	46579-HB	ALUM MAG GAUZ alloy 5056 20MSH	300 x 300mm
C880K64	40707-6M	Aluminum Ultrathin foil, 0.8 micron thick	160 x 160mm
C880K63	40707-6X	Aluminum Ultrathin foil, 0.8 micron thick	140 x 140mm
C880K62	40707-YD	Aluminum Ultrathin foil, 0.8 micron thick	30 x 30mm
C968P51	46986-RF	Copper foil, 0.025mm	30 x 30cm
C968P52	46986-RG	Copper foil, 0.025mm	30 x 150cm
C968P53	46986-RH	Copper foil, 0.025mm	30 x 1000cm
1179G28	42189-FI	CPPR FL 0.1mm THK 99.999%	50 x 50mm
1179G29	42189-GH	CPPR FL 0.1mm THK 99.999%	100 x 100mm
1179G30	42189-HG	CPPR FL 0.1mm THK 99.999%	100 x 300mm
C961X83	14092-RN	Magnesium Aluminum Zinc wire, 3.18mm dia	5 x 90cm
C961X84	14092-RO	Magnesium Aluminum Zinc wire, 3.18mm dia	5 x 90cm
C961X85	14092-RP	Magnesium Aluminum Zinc wire, 3.18mm dia	100 x 90cm
1179D05	41785-H7	NCKL wire .15mmdia ANNLD Nickel	250m
1179D06	41785-I1	NCKL wire .15mmdia ANNLD Nickel	1000m
C880N42	40946-BW	Stainless Steel wire, 0.51mm (0.02in) dia, Type 304	50cm
C880N43	40946-BZ	Stainless Steel wire, 0.51mm (0.02in) dia, Type 304	150cm

Organic Solvents/Electrolyte Components

Thomas No.	Mfr. No.	Description	Available Sizes
C857B70	H27270-06	1-BUTL-23-diMETHLimidazolium CLRIDE	5g
C857P57	H27270-18	1-BUTL-23-diMETHLimidazolium CLRIDE	50g
C969T55	A12260-0C	1-Methyl-2-pyrrolidinone	10kg
C969T54	A12260-0E	1-Methyl-2-pyrrolidinone	2.5kg
C969T53	A12260-36	1-Methyl-2-pyrrolidinone	500g
C850Q56	H61502-14	4-Fluoro-1,3-dioxolan-2-one, 98%	25g
C850Q57	H61502-22	4-Fluoro-1,3-dioxolan-2-one, 98%	100g
C969Y05	A12477-0D	Diethyl carbonate, 99+%, UN2366	10L
C969Y04	A12477-0F	Diethyl carbonate, 99+%, UN2366	2.5L

Organic Solvents/Electrolyte Components continued on page 6

Thomas No.	Mfr. No.	Description	Available Sizes
C969Y03	A12477-AP	Diethyl carbonate, 99+%, UN2366	500ml
C968M88	A15735-0C	Ethylene carbonate	10kg
C968M87	A15735-0E	Ethylene carbonate	2.5kg
C968M86	A15735-36	Ethylene carbonate	500g
C850Q56	H61502-14	4-Fluoro-1,3-dioxolan-2-one, 98%	25g
C850Q57	H61502-22	4-Fluoro-1,3-dioxolan-2-one, 98%	100g
C956G86	A15552-0B	Propylene carbonate	1kg
C956G87	A15552-0I	Propylene carbonate	5kg
C956G85	A15552-30	Propylene carbonate	250g
C871L09	41963-K2	Trichloroethylene, Electronic Grade, UN1710	1L
C871L10	41963-K7	Trichloroethylene, Electronic Grade, UN1710	4L
C871L11	41963-M6	Trichloroethylene, Electronic Grade, UN1710	4 x 4L
C850K45	H60822-18	4-Vinyl-1,3-dioxolan-2-one, 99%, UN2810	50g
C850K46	H60822-30	4-Vinyl-1,3-dioxolan-2-one, 99%, UN2810	250g

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.

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