

Battery Metals Product Guide



As the world's leading and most diverse derivatives marketplace, CME Group is where the world comes to manage risk. Built on the heritage of CME, CBOT, NYMEX and COMEX, our exchanges offer the widest range of global benchmark products across all major asset classes, including futures and options based on interest rates, equity indices, foreign exchange, energy, agricultural commodities, crypto and metals. We bring buyers and sellers together through our Globex electronic trading platform and ClearPort services for OTC transactions.

Manage your battery raw materials price risk with Battery Metals futures and options contracts

We offer a suite of Battery Metals futures and option contracts covering the cobalt and lithium supply chain. The contracts are financially settled based on the monthly average of reference prices published by Fastmarkets.

Lithium and Cobalt futures and options are financially settled based on widely used reference prices published by Fastmarkets. The Fastmarkets' price assessments capture the spot price of the respective underlyings across cobalt metal, cobalt hydroxide, lithium carbonate, lithium hydroxide and spodumene.

The Lithium contracts are quoted in U.S. dollars per kilogram and have a contract size of 1,000 kilograms, equivalent to one metric ton. Spodumene is quoted in U.S. dollars per metric ton with a contract size of 10 metric tons. The Cobalt contracts are quoted in U.S. dollars per pound and have a contract size of 2,204.62, again equivalent to one metric ton. Details on the underlying price assessment are available at <https://www.fastmarkets.com>.

Why Lithium futures and options?

Lithium is a key material in the manufacturing of lithium-ion batteries, as well as many other products across various industries. Lithium hydroxide is widely used in high energy density batteries while lithium carbonate is used in batteries using LFP (lithium-iron-phosphate) chemistry. Spodumene is a lithium-containing rock that is further processed and refined into lithium downstream chemicals. Lithium carbonate is an input for lithium-ion battery cathodes, pharmaceuticals, and other industrial applications. The rapid growth of electric vehicles and large-scale battery storage applications will require an increasing amount of lithium in the coming years. The underlying Fastmarkets assessments track the price of Lithium product basis CIF (cost, insurance, freight) China, Japan and South Korea, where most of the industry's manufacturing capacity is located.

With these products, we allow you to hedge your lithium price risk using centrally cleared financial instruments. You can manage your commodity price risk separately from your physical business. Lithium futures and options can be a cost-efficient hedging tool to protect profit margins and minimize risk. The contracts are available for up to three years forward, thereby establishing a forward price curve and empowering customers to execute long-term hedging strategies.

Why Cobalt futures and options?

Cobalt is a key material in the manufacturing of lithium-ion batteries for consumer electronics and electric vehicles, as well as specialty alloys used in aerospace and other industries. Just like lithium, the energy transition is expected to grow demand for cobalt over the coming years. The underlying Fastmarkets cobalt metal assessment for standard-grade cobalt metal in-warehouse Rotterdam serves as the key industry reference point for pricing cobalt across the supply chain. The Cobalt Hydroxide contract provides a hedging tool for cobalt hydroxide shipped into China, where most of the global refining capacity is located. Due to its cash settlement, the contracts allow you to manage commodity price risk separately from physical cobalt trading. The contracts are available for up to five years forward.

Who trades Lithium and Cobalt contracts at CME Group?

Market participants seeking a central point of price discovery, price transparency and risk management trade our products. The contracts are a helpful tool for producers, battery manufacturers, recyclers, automakers, as well as merchant traders and intermediaries along the supply chain. It also gives financial investors access to Battery Metal commodities without having to manage a physical delivery process.

How can you trade Lithium and Cobalt futures and options?

Electronically on screen via the Globex platform.

Centrally cleared through ClearPort, through specialized interdealer brokers or directly bilaterally agreed between market participants.

COBALT PRODUCT SPECIFICATIONS

PRODUCT NAME	COBALT METAL (FASTMARKETS) FUTURES	COBALT HYDROXIDE CIF CHINA (FASTMARKETS) FUTURES	COBALT METAL (FASTMARKETS) AVERAGE PRICE OPTION
PRODUCT SYMBOLS	Globex, ClearPort and Clearing: COB	Globex, ClearPort and Clearing: COH	Globex, ClearPort and Clearing: COO
TRADING HOURS	Globex: Sunday - Friday 6:00 p.m. - 5:00 p.m. Eastern time/ET (5:00 p.m. - 4:00 p.m. Central time/CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT) Globex preopen: Sunday 5:00 p.m. - 6:00 p.m. ET (4:00 p.m. - 5:00 p.m. CT). Monday - Friday 5:45 p.m. - 6:00 p.m. ET (4:45 p.m. - 5:00 p.m. CT) ClearPort: Sunday - Friday 6:00 p.m. - 5:00 p.m. ET (5:00 p.m. - 4:00 p.m. CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT)		
CONTRACT UNIT	2,204.62 pounds (equivalent to one metric ton)		
PRICE QUOTATION	U.S. dollars per pound		
MINIMUM FLUCTUATION	\$0.01 per pound		
TERMINATION/ EXPIRATION	The contract terminates at the close of trading on the last UK business day of the contract month. If that day is not an Exchange business day, trading in the contract terminates on the prior Exchange business day.		
LISTED CONTRACTS	Monthly contracts listed for the current year and the next four calendar years		
SETTLEMENT TYPE	Financial		
OPTION TYPE	N/A		European exercise style
FLOATING PRICE	Equal to the arithmetic average of all available daily price assessments published for cobalt standard grade, in-whs Rotterdam, \$/lb (mid-price of daily range) by Fastmarkets during the contract month	For contract months through and including Dec-25: Equal to the arithmetic average of all available price assessments published for "Cobalt hydroxide, min 30% Co, inferred, China, \$ per lb" in \$/pound by Fastmarkets during the contract month For contract months Jan-26 and beyond: Equal to the arithmetic average of all available price assessments published for "Cobalt hydroxide 30% Co min, cif China, \$/lb" in \$/pound by Fastmarkets during the contract month	Equal to the arithmetic average of all available daily price assessments published for cobalt standard grade, in-whs Rotterdam, \$/lb (mid-price of daily range) by Fastmarkets during the contract month

These contracts are subject to the rules and regulations of COMEX.

LITHIUM PRODUCT SPECIFICATIONS

PRODUCT NAME	LITHIUM HYDROXIDE CIF CJK (FASTMARKETS) FUTURES	LITHIUM CARBONATE CIF CJK (FASTMARKETS) FUTURES	LITHIUM HYDROXIDE CIF CJK (FASTMARKETS) AVERAGE PRICE OPTION	LITHIUM CARBONATE CIF CJK (FASTMARKETS) AVERAGE PRICE OPTION
PRODUCT SYMBOLS	Globex, ClearPort and Clearing: LTH	Globex, ClearPort and Clearing: LTC	Globex, ClearPort and Clearing: LHO	Globex, ClearPort and Clearing: SPM
TRADING HOURS	Globex: Sunday – Friday 6:00 p.m. – 5:00 p.m. Eastern time/ET (5:00 p.m. – 4:00 p.m. Central time/CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT) Globex preopen: Sunday 5:00 p.m. – 6:00 p.m. ET (4:00 p.m. – 5:00 p.m. CT). Monday – Friday 5:45 p.m. – 6:00 p.m. ET (4:45 p.m. – 5:00 p.m. CT) ClearPort: Sunday – Friday 6:00 p.m. – 5:00 p.m. ET (5:00 p.m. – 4:00 p.m. CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT)			
CONTRACT UNIT	1,000 kilograms (equivalent to one metric ton)			10 metric tons
PRICE QUOTATION	U.S. dollars per kilogram			U.S. dollars per metric ton
MINIMUM FLUCTUATION	\$0.01 per kilogram			\$1.00 per metric ton
TERMINATION/ EXPIRATION	The contract terminates at the close of trading on the last business day of the contract month.			
LISTED CONTRACTS	Monthly contracts listed for the current year and the next two calendar years			
SETTLEMENT TYPE	Financial			
OPTION TYPE	N/A		European exercise style	European exercise style
FLOATING PRICE	Equal to the arithmetic average of all available daily price assessments published for "Lithium hydroxide monohydrate min 56.5% LiOH.H ₂ O battery grade spot price, US\$ per kg CIF China, Japan & South Korea" in \$/kilogram by Fastmarkets during the contract month	Equal to the arithmetic average of all available daily price assessments published for "Lithium Carbonate 99.5% Li ₂ CO ₃ min, battery grade spot price, US\$ per kg CIF China, Japan & South Korea" in \$/kilogram by Fastmarkets during the contract month	Equal to the arithmetic average of all available daily price assessments published for "Lithium hydroxide monohydrate min 56.5% LiOH.H ₂ O battery grade spot price, US\$ per kg CIF China, Japan & South Korea" in \$/kilogram by Fastmarkets during the contract month	Equal to the arithmetic average of all available daily price assessments published for "Lithium carbonate 99.5% Li ₂ CO ₃ min, battery grade, spot prices cif China, Japan & Korea" in \$/kilogram by Fastmarkets during the contract month

These contracts are subject to the rules and regulations of COMEX.

For more information on our Metals products, visit cmegroup.com/battery-metals, or email metals@cmegroup.com

Hedging with financially settled futures

Financially settled futures can be used to manage commodity price risk.

How hedging works

Hedging is essentially protection against adverse price events. Just as you protect your home, car or health, hedging guards against having to incur unforeseen, extra costs. If properly hedged, changes in the underlying prices should be offset by the hedge, thus protecting profit margin and asset value. The typical participants of a hedge strategy include the producers of the commodity and the companies that need to purchase that commodity later.

Some potential participants are:

- Buyers: OEMs, battery manufacturers, project developers, investors
- Sellers: Producers, merchant traders, refiners/converters, investors

Basic components of hedging

An underlying asset is the physical product to be hedged, on which a derivatives product is based.

Derivatives are financial instruments whose prices move concurrently with the underlying asset, such as Lithium and Cobalt futures contracts. Derivatives enable market participants to dynamically manage their price exposure, reduce risk, lock in profits and protect margins.

Inventory hedging example*

SCENARIO

On March 4, 2025, a merchant trader holds 200 metric tons of unsold cobalt metal inventory. Concerns arise about the potential for cobalt prices to weaken over the next two months. This presents a risk to the value of its inventory, prompting the trader to consider hedging strategies to protect against potential losses. The merchant recognizes the need to secure the value of its inventory and reduce exposure to a volatile spot market for that period.

The merchant trader faces the risk of declining cobalt prices until it can find a buyer for its material. To mitigate the risk of the inventory depreciating in value, the trader can implement a hedging strategy by selling Cobalt Metal (Fastmarkets) futures contracts. Should cobalt prices decline as feared, the trader will realize a gain on the value of their short futures contracts. This gain will serve to offset the loss incurred from selling at lower cobalt prices later.

EXAMPLE

The Cobalt Metal (Fastmarkets) futures contract is based on one metric ton of cobalt. Therefore, to hedge its entire 200 metric tons of unsold metal inventory against price declines, the merchant trader needs to sell 200 May 2025 Cobalt Metal (Fastmarkets) futures contracts.

On March 4, 2025, the May 2025 Cobalt Metal (Fastmarkets) futures price is \$12/lb. The merchant trader executes the hedge by selling 200 May 2025 Cobalt Metal (Fastmarkets) futures contracts at the prevailing price of \$12/lb. This establishes a short position in the futures market, designed to offset potential losses of the inventory value.

On April 15, 2025, the trader executes a physical sale and ships 50 metric tons of physical cobalt at a price of \$10/lb. Simultaneously, it buys back 50 May 2025 Cobalt Metal (Fastmarkets) futures contracts at the then-current market price of \$10/lb. This action reduces their hedge proportionally to the amount of inventory sold. The \$2/lb decrease in the price of the underlying physical cobalt since the hedge was initiated is to offset by an equivalent profit on its short futures position. The trader realizes a profit of \$2/lb on the 50 futures contracts they bought back, effectively compensating for the decline in the physical cobalt price.

As the merchant trader continues to sell off its physical cobalt inventory, it progressively reduces the size of the hedge. The trader achieves this by buying back an equivalent amount of Cobalt Metal (Fastmarkets) futures contracts corresponding to the tonnage of cobalt metal sold. This process continues until the entirety of the cobalt inventory is sold, at which point the entire hedge is liquidated. If there is remaining inventory that the trader wishes to protect against price decreases by the expiry of the May 2025 contract, the trader can roll forward its hedge by opening a correspondingly sized short futures position in a deferred month.

If the cobalt price decreases, the trader's short futures position will generate a profit, offsetting the lower price obtained in the physical cobalt market. Conversely, if the cobalt price increases, the trader will sell its physical cobalt at a higher price, which will offset the loss incurred on the futures position.

Irrespective of the movement in the physical spot market, the hedging strategy protects the merchant trader's profit margin and the inventory value. In this example, the hedge enables the trader to mitigate the risk of price fluctuations while awaiting favorable market conditions.

* All prices and situations are theoretical

Procurement hedging example*

SCENARIO

On October 1, 2025, an original equipment manufacturer (OEM) agrees to purchase lithium-ion batteries from a battery manufacturer over a six-month period starting in January 2026. The contract terms include a formula price linked to the price of lithium hydroxide during the delivery period, meaning that the final price for the delivered batteries will fluctuate based on the realized average price of lithium hydroxide over those six months.

The OEM, wanting to maintain a predictable profit margin despite the fluctuating lithium hydroxide price, decides to hedge its risk by using the Lithium Hydroxide CIF CJK (Fastmarkets) futures contracts. This allows it to effectively lock in a price for the lithium hydroxide and thereby manage an important cost component of the batteries it is purchasing.

EXAMPLE

The OEM estimates that the order size is equivalent to 100 metric tons of lithium hydroxide per month over the six-month contract period. The Lithium Hydroxide CIF CJK (Fastmarkets) futures contract has a contract size of one metric ton. Therefore, to hedge the exposure, the battery manufacturer needs to purchase a strip of six times 100 Lithium Hydroxide futures contracts with expiries from January to June 2026.

On October 1, 2025, the price for a January-June 2026 strip of Lithium Hydroxide futures price is \$12 per kg. The battery manufacturer is able to execute this hedge by buying 100 metric tons in each month in the period January through June 2026.

As the battery manufacturer begins delivering batteries and issuing invoices, the price charged to the OEM will fluctuate based on the current spot price of lithium hydroxide.

If the price of lithium hydroxide increases, the OEM has covered its risk with the purchase of Lithium Hydroxide futures contracts, which gain in value and thereby mitigate the impact of the additional cost in the physical procurement contract. If the price decreases, the OEM will purchase batteries at a lower cost, which will offset the negative PnL on the futures contract. Regardless of the direction of price, the variable price risk associated with lithium is covered with a hedge using Lithium Hydroxide futures contracts, and the OEM can procure finished batteries from its supplier at a predictable cost, thereby protecting its profit margins.

Profit margin is protected.

It is important to note that by hedging, a company is trying to mitigate risk, not make additional profit through speculation. Therefore, if properly hedged, adverse and favorable price fluctuations will net the same result and provide businesses higher certainty about future sales revenues and the cost of input goods.

* All prices and situations are theoretical

Calendar spread hedging example*

SCENARIO

On January 5, 2026, a battery manufacturer finalizes its production schedule, which involves a three-month gap between raw material procurement and finished product delivery. The manufacturer agrees to purchase physical cobalt metal in May to begin a production run, with the purchase price formula-linked to the May average of the Fastmarkets spot price. Simultaneously, they hold a long-term sales contract to deliver finished batteries to an automaker in August, with the final sales price formula-linked to the August average of the Fastmarkets cobalt price.

The manufacturer faces the risk of a widening spread between the two months. If spot prices spike in May and crash by August, the manufacturer's profit margin on the production run will be severely squeezed or turn negative. The manufacturer, wanting to maintain a predictable profit margin despite the timing gap and fluctuating cobalt prices, decides to hedge its risk by using Cobalt Metal (Fastmarkets) futures contracts. This allows them to effectively lock in their raw material cost structure and secure its profit margin.

EXAMPLE

The manufacturer needs 100 metric tons of physical cobalt metal for the production run. The Cobalt Metal (Fastmarkets) futures contract is based on one metric ton of cobalt. Therefore, to hedge the exposure across the three-month gap, the manufacturer needs to execute a calendar spread by buying 100 May 2026 Cobalt Metal (Fastmarkets) futures contracts and selling 100 August 2026 Cobalt Metal (Fastmarkets) futures contracts.

On January 5, 2026, the May 2026 Cobalt futures are trading at \$12/lb, and the August 2026 futures are trading at \$13/lb. The manufacturer executes the hedge by buying 100 May contracts at \$12/lb and selling 100 August contracts at \$13/lb. This establishes a locked-in margin regardless of what the physical market does over the coming months.

In May, the physical market spikes, and the Fastmarkets average settles at \$15/lb. The manufacturer pays the supplier \$15/lb for the physical cobalt. Simultaneously, their long May futures contracts financially settle at \$15/lb, generating a profit of \$3/lb that offsets the higher physical cost, netting an effective input cost of \$12/lb.

In August, the physical market declines, and the Fastmarkets average settles at \$10/lb. The manufacturer delivers the batteries and receives a lower formula-linked price based on the \$10/lb cobalt value. Simultaneously, their short August futures contracts financially settle at \$10/lb. Since they sold at \$13/lb, they realize a profit of \$3/lb on the futures, resulting in an effective sales revenue component of \$13/lb.

Irrespective of the movement in the physical spot market, the hedging strategy protects the battery manufacturer's cobalt price exposure across the production timeline. In this example, the calendar spread hedge enables the manufacturer to mitigate the risk of price fluctuations during the time between raw material procurement and final product delivery, securing a stable cost and revenue structure rather than relying on favorable market conditions at the time of physical purchase or sale.

* All prices and situations are theoretical

Clearing at CME Group

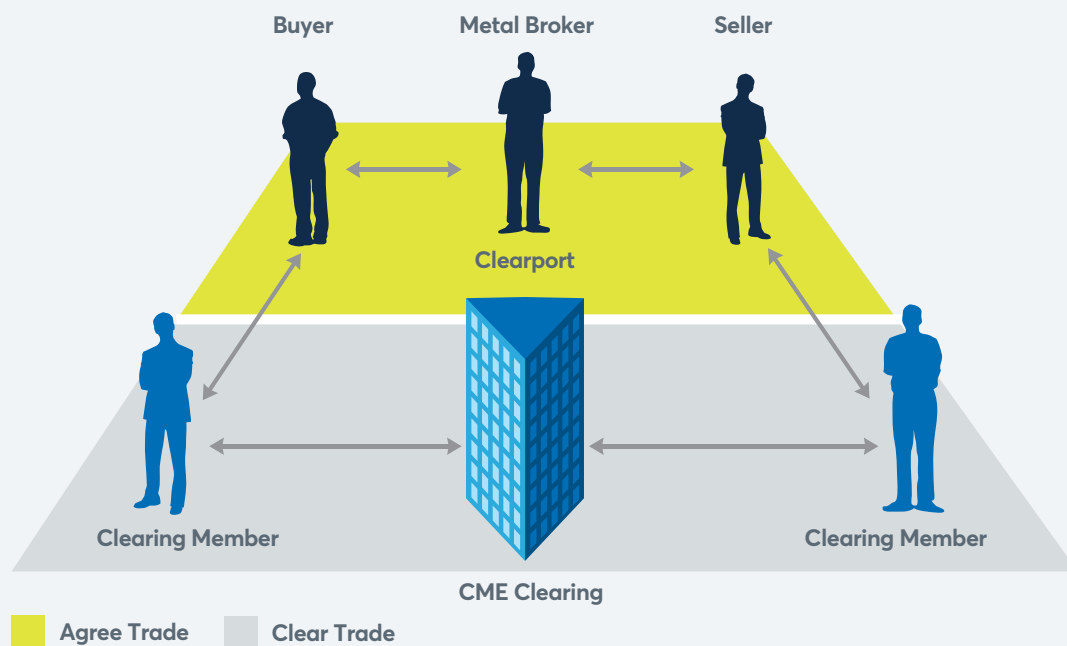
Trading Battery Metals contracts via a metals broker

A metals broker can provide independent price discovery and execution by looking to match buyers and sellers on the same trade. Once the trade is agreed, for example via phone, chat, instant message, etc., it is submitted for clearing as a block trade. The broker uses a tool called ClearPort. Buyers and sellers need to register on ClearPort, which is a free online process, but using ClearPort to book and confirm the trade is all handled by the broker.

You can also get instant confirmations of your CME Group trades.

CME CLEARPORT: STEPS TO SET-UP

- Establish a clearing member relationship
- Register for CME Clearport at cmegroup.com/clearport/registration



Trading Battery Metals contracts via a CME Direct screen

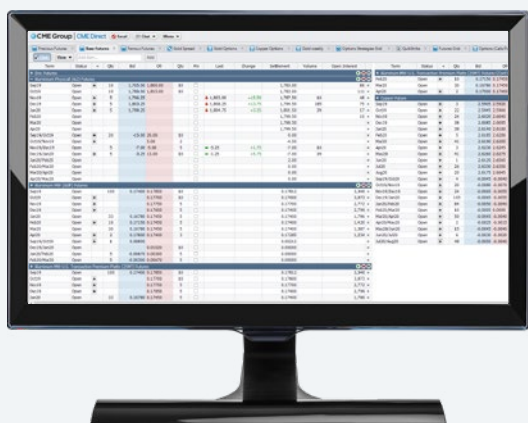
CME Direct is a trading screen allowing access to the exchange's anonymous matching engine, Globex. If another participant has posted an order, you can trade that number. You can also post your own orders for other participants to trade. Price discovery and execution take place directly on the exchange.

Electronic trading on Globex is typical for our more liquid products, and we are starting to see more regular liquidity for Cobalt and Lithium futures on Globex complementing block-trading activity executed via metal brokers or directly via counterparties.

You can also get instant confirmations of your CME Group trades.

CME DIRECT: STEPS TO SET-UP

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- Register for CME Direct at cmegroup.com/trading/cme-direct/registration



For more information please visit cmegroup.com/metals

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Mailing Address: 20 South Wacker Drive, Chicago, Illinois 60606

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