

# **SMM Battery-Grade Lithium Carbonate Spot Price Standard**

**Product: SMM Battery-Grade Lithium Carbonate Spot Price**

**Last Formal Consultation Period: 2024/05/28 – 2024/06/28**

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## **1. SMM Price Assessment Methodology General Principles**

Shanghai Metals Market (hereinafter referred to as SMM) is a fully independent third-party service provider that does not engage in any substantive transactions. Instead, it acts as a market observer or organizer, maintaining close communication with buyers and sellers, and providing relevant services to the market. SMM continuously formulates, reviews, and revises its methodology through communication with industry insiders, adopting the most common product specifications, trade terms, and conditions within the industry. It gives equal importance to normal transactions that meet specification standards. SMM reserves the right to exclude from its price assessments any information deemed unreliable or unrepresentative.

SMM publishes daily spot metal prices (or indices, etc., for both the Chinese and international markets), commonly known as SMM prices. For each SMM price published, SMM has established a corresponding methodology (all of which are available on SMM's official website [www.smm.cn](http://www.smm.cn)). The methodology specifies how SMM prices are formed and released, and SMM strictly adheres to these guidelines when forming and releasing SMM prices.

To align with the actual situation in the spot market, SMM will make necessary revisions to the SMM price assessment methodology, announcing them on the SMM official website [www.smm.cn](http://www.smm.cn) 28 days before their formal implementation. For any questions or suggestions regarding SMM prices and their methodologies, please contact SMM customer service personnel (contact details can be found on the SMM official website [www.smm.cn](http://www.smm.cn)). This paragraph should be read in conjunction with SMM's methodology review and change policies, as well as SMM's complaint policy.

This document sets out the standards and management methods for the SMM battery-grade lithium carbonate spot price. SMM has established this standard to create a transparent and verifiable SMM price formation mechanism, providing an important pricing benchmark for market participants.

The SMM Benchmark Management Committee regularly reviews the methodology and its assessment and release processes. This committee oversees the SMM methodology and compilation process, ensuring that the prices or indices accurately reflect the physical spot

market conditions of the relevant commodities. If the committee identifies any issues, it will immediately highlight them and propose external consultations and modifications to the methodology or process being implemented, thereby enhancing the quality of the SMM-published prices or indices. The committee can only propose changes to the methodology and steps used for future price or index assessments; it cannot alter already published prices or indices.

## **2. Formation of the SMM Battery-Grade Lithium Carbonate Spot Price**

The development of China's lithium industry began after the founding of New China, with resource reserves ranking among the world's top. The first generation of lithium mining was located at the No. 3 ore vein in Keketuohai, Xinjiang, and with the assurance of lithium resources, the first lithium chemical plant in New China, the Xinjiang Lithium Chemical Plant, was built in 1958, marking the start of the domestic lithium smelting industry, primarily serving traditional sectors such as glass ceramics, aluminum refining, and catalysts. As environmental conditions deteriorated, the development of clean energy became a significant shift following the Second Industrial Revolution. In the automotive industry, the largest industrial system globally, new energy vehicles (NEVs) are undoubtedly the future direction under the pressure of energy and environmental protection, gradually becoming a crucial end-user, accounting for over 70% of lithium resource applications.

As the world's largest lithium carbonate smelting base, China has become a pillar in the global new energy industry. Over several decades, domestic lithium carbonate smelters have undergone restructuring and expansion, growing from three major smelters with a capacity of about 5,000 mt of lithium carbonate to over 100 companies with a combined capacity of approximately 1.3 million mt, covering various lithium extraction technologies, including spodumene, lepidolite, and salt lake brine. As a mainstream lithium chemical product, the rapid fluctuations in lithium carbonate prices directly impact the costs and profits of downstream materials and battery industries. With the gradual growth of new industries such as aerospace, pharmaceuticals, and nuclear fusion, and the increasing penetration of NEVs driven by global carbon emission policies, lithium resources have become the "white petroleum" of the new era, and the future trading scale of the lithium carbonate market is immeasurable.

### **2.1 Definitions, Background**

Definition: SMM battery-grade lithium carbonate is an indicative price formed and published by SMM according to this methodology, which can be used as a reference for settlement in the lithium carbonate industry chain (electrolyte, LiPF<sub>6</sub>, lithium carbonate, cathode material, battery, automaker, etc.). This price reflects the most likely widely

transacted battery-grade lithium carbonate price on each full working day.

Background for Publishing the SMM Battery-Grade Lithium Carbonate Spot Price:

The Chinese lithium carbonate market is vast, ranking first in the world. Changes in the spot battery-grade lithium carbonate prices in the Chinese domestic market directly affect the global spot battery-grade lithium carbonate price trends. In analyzing the global supply and demand for battery-grade lithium carbonate, the "China factor" is becoming increasingly important. Therefore, there is an urgent need to compile and publish a price that fully reflects the spot battery-grade lithium carbonate prices in the domestic market, objectively, truthfully, and timely, reflecting the supply and demand situation in China's battery-grade lithium carbonate spot market. Thus, the SMM battery-grade lithium carbonate spot price was born. By analyzing this price, the patterns and reasons for changes in the spot battery-grade lithium carbonate prices can be discovered, providing a reference for scientific decision-making by enterprises, research institutions, and government departments in the battery-grade lithium carbonate industry.

The SMM battery-grade lithium carbonate spot price is an assessed price formed and published by SMM according to this methodology, which can be used by buyers and sellers as a reference for spot battery-grade lithium carbonate trade settlements. This price reflects the actual transaction prices of enterprises at the time of the SMM battery-grade lithium carbonate spot price release on each full working day, as well as the most likely transaction price range for delivered spot transactions. The price is mainly based on the day's national spot transaction price conditions, including related trade expenses such as transportation, taxes, and capital occupation costs.

## **2.2 Overview of Formation Method**

SMM collects data for assessing the battery-grade lithium carbonate spot price through price collection (i.e., gathering original data that meets SMM standards), including non-transactional quotes from buyers and sellers provided by price submitters, and actual transaction prices of spot trades provided by price submitters. Each transaction included in the standard price collection should involve no less than 30 mt and no more than 500 mt of battery-grade lithium carbonate. The data collection, assessment (calculation), and daily management of the SMM battery-grade lithium carbonate spot price are carried out by the SMM battery-grade lithium carbonate business team (consisting of three members: A position, B position, and a price manager).

SMM prices aim to reflect the true transaction levels of battery-grade lithium carbonate throughout the day. Therefore, when equally specified and same shipment period transactions, quotes, and bids are simultaneously announced in the market, transaction information is more important than quote and bid information. Please read this section in conjunction with the SMM Data Input Level Guidelines.

## **2.3 Sources of Original Data Information**

### **2.3.1 Price Collection from Submitters**

Please note that the following standards and procedures should be read in conjunction with one of SMM's policies: the inclusion and exclusion policy for price submitters.

#### **2.3.1.1 Selection Criteria for Price Submitters**

SMM selects representative market participants from the tangible industry chain as target price submitters (i.e., data providers, including smelters and downstream enterprises) for the SMM battery-grade lithium carbonate spot price according to the following criteria.

SMM takes all reasonable precautions to determine and verify the authenticity and reliability of each price submitter. SMM's procedures aim to minimize the risk of using any anomalous price data and oppose any manipulation of indices.

SMM policies include, but are not limited to, the following steps:

Collecting and verifying the authenticity of relevant public documents (such as business licenses) for each price submitter

Ensuring that each price submitter participates in the trading, purchasing, selling, or production of one or more related battery-grade lithium carbonate products in the industry chain

Ensuring that each designated contact person at a price submitter company has the direct access to relevant data and the necessary authority and capability to promptly submit the data to SMM price analysts

Verifying the reputation of each price submitter through inquiries with other reputable market participants

##### **2.3.1.1.1 Requirements for Smelters**

- a. Battery-grade lithium carbonate annual production capacity of over 5,000 tons, with standardized sales models, smooth sales channels, relatively stable sales volumes, a certain level of influence and recognition, lawful and honest operations, and a good market reputation
- b. Able to objectively and truthfully feedback on the actual production and sales situation of the company's battery-grade lithium carbonate, including production, operating rate, product quality, selling price, sales volume, sales destination, and product inventory, and maintain good communication with SMM price analysts on these matters
- c. Have some judgment and expectations regarding the macroeconomic situation, the current state of the battery-grade lithium carbonate industry, and the battery-grade lithium carbonate market transactions, and maintain good communication with SMM price analysts on these matters

##### **2.3.1.1.2 Requirements for Downstream Enterprises**

- a. Battery-grade lithium carbonate annual procurement volume of over 1,000 tons, with

standardized procurement models, smooth procurement channels, relatively stable procurement volumes, a certain level of influence and recognition, lawful and honest operations, and a good market reputation

- b. Able to objectively and truthfully feedback on the actual procurement situation of the company's battery-grade lithium carbonate, including product quality, procurement price, procurement volume, source of procurement, and battery-grade lithium carbonate inventory, and maintain good communication with SMM price analysts on these matters
- c. Have some judgment and expectations regarding the macroeconomic situation, the current state of the battery-grade lithium carbonate industry, and the battery-grade lithium carbonate market transactions, and maintain good communication with SMM price analysts on these matters

#### **2.3.1.2 Formation and Adjustment of the List of Price Submitters**

SMM selects price submitters based on the above criteria and forms a relatively stable list of price submitters. To ensure the smooth conduct of price collection, SMM signs a formal price submitter agreement with each price submitter, ensuring the accuracy and timeliness of price data while protecting the commercial confidentiality of the price submitters. SMM assigns dedicated price analysts to communicate with the dedicated price submission contacts at each price submitter regarding market conditions related to price data. SMM continuously evaluates each price submitter based on the above criteria and adjusts the list of price submitters according to the evaluation results. For price submitters whose evaluation results do not meet the above standards, SMM will include them in the rectification list and notify them to rectify within a specified period. If the price submitter refuses to rectify or still fails to meet the standards within 30 days after the rectification notice is issued, SMM will terminate their qualification as a price submitter.

Data providers will not receive incentives, rewards, or benefits from SMM for providing data, except for the possibility of receiving related services from SMM for free subscription.

#### **2.3.1.3 Price Collection Method**

SMM will, in accordance with the price submitter agreement, have price analysts regularly (between 9:00 AM and 10:00 AM on each trading day) collect relevant data information on spot battery-grade lithium carbonate prices from the price submitters' contact persons via telephone, QQ, WeChat, fax, and email. Price data submitted after 10:00 AM will not be used as a basis for that day's price assessment. Incomplete data lacking the minimum required details, even if submitted before the deadline, will not be included. The price data information can include transaction prices of the day, previously unconsidered but already transacted prices, expected most likely pending transaction prices, offers, and counteroffers. All instant messaging content, email communications, and records of any face-to-face communications will be archived; details of telephone communications will be summarized and entered into the database. This price data

information must be from typical, repeatable transactions between non-affiliated market participants (financially and legally independent).

SMM price analysts must adhere to business ethics guidelines when reporting to their supervisors any communication from market participants under duress or threat, or any attempt to influence the assessment results through inducements.

The price data information provided by the price submitters to SMM should at least include the following, and SMM price analysts should encourage price submitters to provide as much detailed information as possible, beyond the minimum requirements:

#### **Battery-Grade Lithium Carbonate Specifications**

Battery-Grade Lithium Carbonate: Battery-Grade Lithium Carbonate: Compliant with YS/T582-2023,  $\text{Li}_2\text{CO}_3 \geq 99.5\%$ , with magnetic substance content no more than 0.003%. For details, see the industry standard "YS/T582-2023 Battery-Grade Lithium Carbonate" in the attachment.

#### **Transaction Prices/Counteroffers/Offer, etc.**

This can be a specific price figure or a potential transaction price range, in units of ten thousand yuan/mt.

#### **Reference Transaction Volume**

Under normal market conditions, single transactions are based on a minimum unit of 30 mt and a maximum unit of 500 mt. When the market is affected by force majeure and other factors, leading to sporadic transactions, adjustments can be made accordingly.

#### **Delivery Location and Method**

Domestic mainstream trading locations. Same-day delivery, door-to-door service.

#### **Payment Terms**

Payment terms under negotiated trade agreements, such as bank wire transfer, acceptance bills, etc.

### **2.3.2 Collecting Data from Other Sources**

SMM's policy for collecting market data is to welcome all information from various sources or organizations, provided that the data is submitted with good and genuine intentions. However, all parties must acknowledge SMM's code of conduct for data submitters. SMM does not accept instant messaging requests from unidentified individuals and requires that SMM price analysts confirm the identity of market participants at least according to the procedure outlined in 2.3.1.1 before engaging in instant messaging communications.

## **2.4 Detailed Process and Relevant Regulations**

### **2.4.1 Data Collection**

SMM price analysts will collect price data information based on the aforementioned standards. The preliminary price data results will take into account the bid-ask levels, spot

market conditions, futures market conditions, macroeconomics, industry status, market transactions, supply and demand, inventory levels, and other significant political, economic, and natural factors, ultimately resulting in an initial raw dataset.

Prioritization: transaction prices, quotes/bids, expectations, cross-verification, etc. Analysts will adopt no fewer than four price points daily, following the prioritization order. If there is insufficient high-priority data, it will be supplemented by subsequent data.

#### **2.4.2 Data Standardization**

SMM price analysts need to standardize this preliminary data, resulting in a high-low price range that reflects the actual or most likely transactions of the day. The SMM battery-grade lithium carbonate price range generally does not exceed 5,000 yuan/mt.

##### **Volume Standardization**

For actual transaction prices of volumes greater than 500 mt or less than 30 mt, when there are sufficient price points on the day, SMM will prioritize reasonable transaction prices. When there are insufficient price points, SMM will consider these abnormal cases after quotes/bids and expectations. In extreme cases, if there is only one transaction, SMM will consider this abnormal case after quotes/bids and before expectations.

##### **Delivery Method Standardization**

For cash transactions and those with payment terms, SMM will standardize prices in conjunction with the market acceptance price. During special periods, SMM will consider factors such as logistics and transportation costs.

Each price data point will be electronically recorded or simultaneously documented in writing. All electronic and paper records must be archived by the price collectors and retained (for at least five years) in a secure network and physical environment. For details, please refer to SMM's data retention policy.

#### **2.4.3 Data Analysis, Verification, and Screening**

SMM will make every effort to confirm bids, offers, and transaction information with relevant parties. SMM will endeavor to verify all market data information provided by buyers/sellers with their counterparties. When both parties to a transaction cannot or are unwilling to confirm the data, SMM will seek cross-verification from other market participants.

For questionable, non-replicable, or significantly abnormal quotes or transactions in the raw dataset, SMM will exclude them from the price assessment, i.e., perform "N-flagging" in the raw dataset, and record the reasons for exclusion, which will also be retained (for at least five years). For example, SMM ensures that only transaction or quote data executed between financially and legally independent parties is included in the price assessment. SMM price analysts will compare the data submitted by price submitters, analyze the content of each data point, and verify whether each data point is consistent with broader market trends. This includes, but is not limited to, situations such as:

A transaction price is significantly higher due to special circumstances or services;  
A company's quote is deliberately high due to internal sales plans or policies;  
A company's offer is intentionally released to the market early based on market predictions.

If any abnormal data is found, SMM price analysts need to investigate it. Therefore, SMM defines that if a received quote or transaction data is more than 5% above or below the arithmetic mean of other normal data, SMM can define it as questionable data (outliers or suspicious transactions). SMM price analysts will re-contact the price submitters to verify the accuracy, applicability, and completeness of the submitted data. If the error is confirmed to be due to submission errors, such as input errors, the error will be corrected and the data will be re-verified and screened. If no errors are found during the submission process, or if the data is found to be inconsistent with the current market situation after verification, SMM price analysts may conclude that the data submitted by the price submitter is not qualified and needs to be excluded from the raw dataset.

Finally, SMM will derive a final dataset, presented as a high-low price range.

SMM aims to minimize subjective judgment in the price assessment process. Established standards and procedures are applied to manage the steps taken by SMM price analysts in screening collected data (please read SMM's Expert Judgment Guidelines for details) and to evaluate whether the data included in the price assessment is valid or has been excluded for anomalies. The experience of SMM price analysts in the battery-grade lithium carbonate trading market is to ensure that only data meeting the clear methodology requirements is included in the price assessment. After screening and "N-flagging" the initial raw dataset, no subjective judgment is made on the standardized data or price assessment. The SMM Benchmark Management Committee regularly reviews the implementation of these procedures to ensure compliance with its published standards. To ensure the highest possible standards, SMM price analysts receive training and regular evaluations in the markets they are responsible for assessing, ensuring that SMM price analysts consistently follow the methodology.

#### **2.4.4 Special Circumstances**

In periods of low liquidity, where there is a lack of sufficient, reliable, and verified market information, SMM reserves the right to assess spot prices using a fallback procedure, taking into account production economics, product correlation, transportation costs, and forward market factors, to ensure that a sufficient and accurate data sample is used for price assessment. Please refer to SMM's Non-Liquid Market Management Policy for more details.

Additionally, if there is no market information about substantial bids and offers or transactions on the valuation day, or if there is only one bid or offer, or if the bid-offer



spread is too wide to establish a transaction value, SMM will, in most cases, make a price judgment, based on carrying over the previous day's SMM price range, etc.

Given that the market sometimes experiences sparse trading, SMM does not set a minimum transaction volume threshold for data submission in such situations.

#### **2.4.5 Price Publication**

SMM will form the SMM battery-grade lithium carbonate spot price according to the following standards and regulations and publicly release it on the SMM official website [www.smm.cn](http://www.smm.cn).

The publication time is between 10:00-10:10 AM on each working day (excluding Chinese statutory holidays and weekends).

The deadline for price collection, from 10:00 AM to the latest publication time of 10:10 AM, is used to verify data and calculate the final published battery-grade lithium carbonate spot price. SMM encourages price submitters not to wait until the last moment to submit their data information. This is to ensure that SMM price analysts have sufficient time to verify the data and incorporate it into the price assessment process.

The publication time may also be affected by various emergencies and force majeure factors, such as power outages and natural disasters. If this occurs, SMM will make every effort to inform the market of the delayed price publication time as soon as possible. For detailed reference, please read in conjunction with the SMM disaster recovery procedure.

The prices published by SMM are available to any customer who has subscribed to SMM services. The prices published by SMM are protected by copyright, and without a clear agreement with SMM, any third party is not allowed to distribute or use them for commercial benefits.

#### **2.4.6 Modification of Published Prices**

After the price is published, if an error is found, whether due to incorrect operation or calculation error, SMM will promptly issue a correction announcement and modify the error. For details, please refer to the SMM valuation correction policy.

### **2.5 Key Points Review**

#### **2.5.1 Price (Product) Standards**

Battery-grade lithium carbonate: Complies with YS/T582-2023,  $\text{Li}_2\text{CO}_3 \geq 99.5\%$ , and the content of magnetic substances in the product does not exceed 0.003%. For specific specifications and indicators, please refer to the attachment: Industry Standard "YS/T582-2023 Battery-grade Lithium Carbonate".

#### **2.5.2 Major Battery-grade Lithium Carbonate Producers**

IOSCO battery-grade lithium carbonate producers account for approximately 65% of China's total battery-grade lithium carbonate capacity (based on 2024 capacity).

### **2.5.3 Reference Transaction Volume**

SMM defines the typical transaction volume that reflects market circulation as 30-500 mt per transaction.

### **2.5.4 Delivery Method**

Same-day delivery, seller delivers; transportation methods include air or truck.

### **2.5.5 Payment Method**

Bank acceptance payment (with a 30-day payment term + 6-month acceptance bill as the standard, other payment methods are standardized to this standard).

### **2.5.6 Delivery Location**

Buyer's in-plant inventory.

### **2.5.7 Pricing Unit**

RMB 10,000 yuan/mt.

### **2.5.8 Presentation Form**

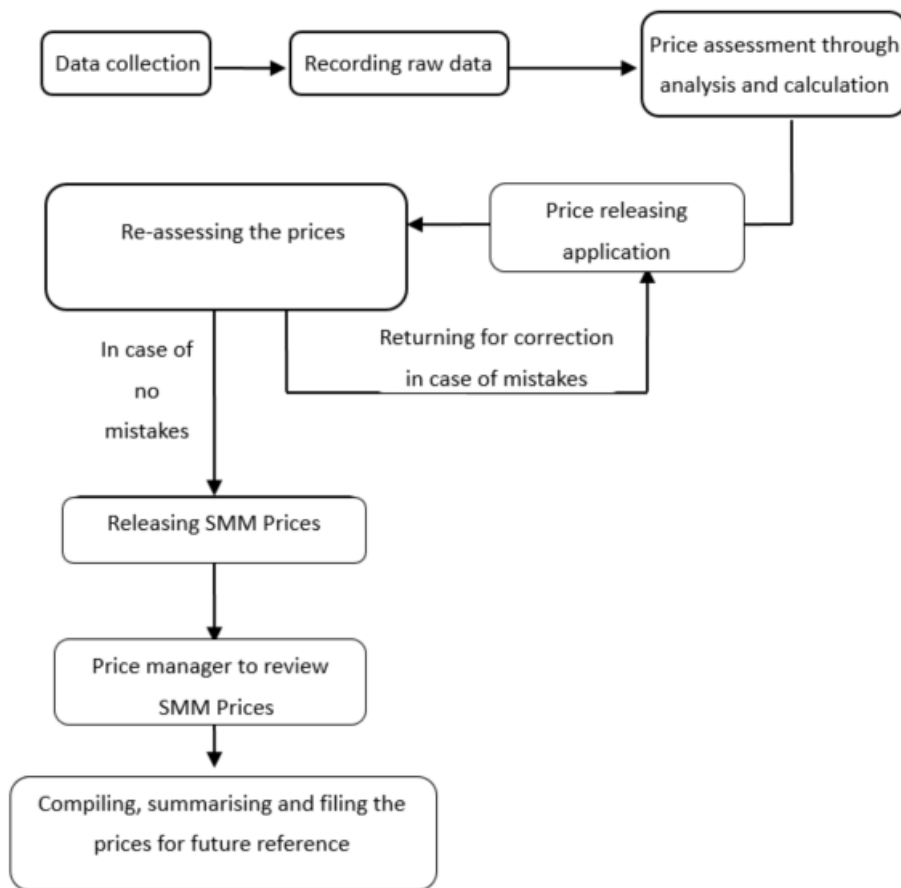
Presented in range form, including tax (13% VAT).

### **2.5.9 Release Time**

Every working day from 10:00 to 10:10 (excluding Chinese statutory holidays and weekends).

## **2.6 Quotation Process**

SMM conducts spot battery-grade lithium carbonate quotations every working day from 9:00 to 10:10, with the specific process as follows:



## 2.7 Methodology Changes

All markets are changing, and SMM has the responsibility to ensure that the methodology for market reports evolves with the market. Therefore, SMM will regularly conduct internal reviews of the appropriateness of the methodology based on industry feedback. For all substantial but non-urgent potential changes, SMM will follow a formal external consultation process. Major changes will then be announced with at least a 28-day notice period, inviting industry professionals to comment, unless special circumstances, especially force majeure (natural disasters, wars, exchange bankruptcies, etc.), result in a shortened notice period. SMM is committed to carefully reviewing all comments on proposed methodology changes, but in some cases, it may have to make changes to the methodology against the wishes of some market participants. In addition, SMM has a formal methodology consultation process. SMM commits to holding at least one formal consultation on battery-grade lithium carbonate reports annually. The date of the last consultation and the deadline for the next consultation committed by SMM are located at the top of the methodology document. For details, see the SMM Methodology Review and Change Policy.

### **3. Historical Price Data**

This section should be read in conjunction with the SMM Record Retention Policy. Historical prices for battery-grade lithium carbonate on SMM can be queried from December 25, 2006.

For information on subscribing to historical price data, visit [www.smm.cn](http://www.smm.cn).

### **4. Compliance with SMM Policies**

All relevant SMM employees must not only comply with the methodology published by SMM but also follow SMM's internal standards and policies. These include: SMM Conflict of Interest Policy, SMM Whistleblower Policy, SMM Error Correction Policy, SMM Methodology Review Consultation and Change Policy, SMM Complaint Policy, etc.