

7 August 2024

Styrene Methodology

Date of last formal consultation: 1 February 2022

Expiry date of this methodology document: 1 February 2025



General methodology

ICIS continuously develops, reviews and revises its methodologies in consultation with industry participants. The product specifications and trading terms and conditions used are intended to reflect typical working practices in the industry.

ICIS publishes market assessments based on information gathered from market participants about: spot transactions, spot bid and offer levels, contract price negotiations, prices of related commodities, and relevant freight costs.

ICIS does not make retrospective adjustments or changes to price assessments based on information received after publication time or after any cut-off point specified in individual methodology documents.

ICIS regards all arm's-length transactions which meet its specification criteria as carrying equal weight.

ICIS uses proprietary models where necessary to normalise data to the typical specifications for cargo size and date ranges given for each commodity.

Some ICIS assessments are the product of calculation alone, for example in markets where insufficient market activity takes place to permit price assessment, or where a market itself habitually sets prices according to a formula. Such calculated assessments are noted as such in their detailed methodology specifications.

ICIS endeavours to cross-check all the transaction information it gathers. ICIS will not use information for assessment purposes where such checks call into doubt the accuracy of the original information, or where a transaction appears to have occurred under circumstances that render it non-repeatable or otherwise markedly unusual.

Rationale for styrene methodology

All ICIS-published spot assessments in the weekly styrene reports are so-called "week's range" assessments. That is, they are intended to represent the tradable value throughout the week leading up to the date of the report. Similarly, in the daily reports they are for the whole day except for Asia (see details in assessment window). ICIS will indicate days where closure of particular markets due to public holidays would result in non-publishing and non-assessment days. The full week is defined from the report's deadline, e.g. Friday 17.00 to the following Friday 17.00.

The value published is intended to reflect the real transactable value of a commodity during the course of the week. As such, transaction information would take precedence over bids and offers.



Where a confirmed deal is done for the same specification and loading range as confirmed bids and offers, and when all are declared to the market simultaneously, the deal will take precedence over the bids and offers. In illiquid markets, sole deals will be used together with bids and offers. In a liquid trading period, deals will form the basis of assessments. In an illiquid market, a single or small number of deals will be included in the range, together with bids and offers. In the absence of any deals, bids and offers will be used. During the assessment process we may consider other information. However actual transactions, and bids and offers will always take precedence.

Specifically for the Asia styrene market, bids and offers are considered for assessment purposes in periods of illiquidity but inclusion in the price range would depend on prevailing market conditions. ICIS may exclude certain offers/bids in order to accurately reflect the level at which business can be done/would probably have taken place.

ICIS takes into account a wide range of market input in making such choices, and reserves the right to exclude from its analysis any price information deemed unreliable or unrepresentative of the market. ICIS commits to describing the information it deemed reliable in the market comment accompanying its assessments, including transactions, bids, offers and other market information used in making these assessments. This includes instances where ICIS typically makes assessments based on firm transaction or bid/offer information, but where that information was not available on a given day and alternative evidence was used.

Cargoes partially loading outside of the Assessed Trading Timeframe may be reflected in the assessment, but will not typically be used where there is deal/bid/offer information within the assessment period.

ICIS has adopted this “week’s range” methodology for styrene reports based on several decades of market observation and feedback. Other measurement strategies, for example weighted averaging, are vulnerable to random variation in transaction levels and volume, which can give rise to distortions.

In addition, the exact volume of transactions for any given product is unknowable in advance, and a volume-dependent methodology is exposed to: a) the charge that lower volumes will result in less accurate prices, and b) to the possibility of failure in the event no transactions occur.

Specifications for styrene

ICIS pricing quotes styrene in Europe, Asia-Pacific and the US Gulf.

Frequency:

- Aromatics Daily (Europe) and Styrene Daily (Asia) reports published on Mondays to Fridays



- Styrene weekly (Europe, Asia-Pacific and the US) reports published on Fridays
- Real time Price Alert Service delivering market news and trends throughout the day

Specifications: ICIS pricing quotes styrene in Europe, Asia and the US conforming to ASTM D-2827. In the domestic eastern China ex-tank market, styrene quoted is based on GB/T3915-2011 specification.

Timing: In Europe, cargoes loading in the current month and in the forward month of the date of publication.

In the US, cargoes loading or delivered within six weeks of the date of publication. For example, assessments on 1 March will be for March delivery only. Assessments on 15 March will be for March and April delivery.

In Asia, spot cargoes sold on a CFR basis are for arrival in half months 3-6 weeks forward from the week of publication. For instance, the daily assessments from 6-10 February 2023 cover the full week from Monday 27 February to Friday 24 March. The three assessed half-months are H2 February, H1 March and H2 March.


For FOB Korea cargoes, this is based on loading 3-6 weeks forward from the week of publication. For FOB China cargoes, they typically load 2-6 weeks forward from the week of publication.

Assessment window: Weekly assessments are based on information supplied by market participants through the week to close of business on Fridays at 1700 hours in London and Houston (US central time).

In Singapore, the daily CFR China and FOB China assessments are based on information collected from 1400-1700 hours. In the absence of deals and discussions during this period, ICIS will consider information earlier in the day for assessment purposes.

The CFR NE Asia, CFR SE Asia, and FOB Korea assessments are based on information through the week up to the close of the last business day at 1700 hours in Singapore.

ICIS data systems are technically complex and have been set up to reflect the full week, regardless of whether or not there is a holiday falling in a particular week, to best serve our subscribers. If a public holiday falls on a Friday in Singapore, the spot price assessments for the close of the assessment week will reflect the deals and/or discussions on the preceding business day with the exception of the domestic Chinese yuan quotes. Likewise, the full week's range would reflect deals and/or discussions from Monday to Thursday with



the exception of the yuan quotes. However, the date of the publication will remain unchanged.

During periods when the CFR China and FOB China quotes are not assessed, all Asia prices including FOB Korea, CFR NE Asia, and CFR SE Asia, which typically trade at a premium or discount to the China market, are similarly not assessed unless otherwise stated.

Domestic eastern China ex-tank quotes are assessed from 0900-1600 hours Beijing time.

Daily assessments are based on information gathered throughout the day to the close of business at 1700 hours in London.

Terms: In Europe and the US, credit terms of up to 30 days.

In Asia, FOB Korea quotes carry credit terms up to 30 days. For CFR China quotes, a 90-day credit term applies. For CFR NE Asia and CFR SE Asia quotes, terms are normalised to a 90-day credit basis, in line with the key Chinese spot market. FOB China quotes carry credit terms typically on at sight basis. For eastern China ex-tank quotes, terms for parcels are on a cash basis within 7 days of transaction. As for domestic Chinese forward cargoes, payment includes a 0-30% deposit paid upon deal done with the remainder paid in cash upon delivery of cargo.

CFR China and FOB China quotes take into account cargoes moving into main ports of China with the bulk of trade going to ports such as Zhangjiagang, Jiangyin, Changzhou, Nantong, Ningbo, Zhenjiang, Zhuhai and Dongguan. CFR NE Asia quotes reflects information of cargoes going into Taiwan, Korea and Japan. CFR SE Asia quotes include information of cargoes moving into Thailand, Indonesia, Malaysia, Vietnam, the Philippines and Singapore. Domestic eastern China ex-tank prices are based on information from Zhangjiagang, Jiangyin and Changzhou.

Standard cargo size: In Europe, 1,000 tonnes for the bulk barge quotes (FOB and CIF). Trucks are of 20 tonnes to 25 tonnes. In Asia, cargoes are typically 2,000-3,000 tonnes, with FOB China parcels being the exception at 2,000-5,000 tonnes. In domestic eastern China, assessments for spot market are based on parcels of 100-500 tonnes while assessments for forward market are based on 500-1,000 tonnes. In the US, spot prices are assessed for waterborne volumes of at least 1,000 tonnes.

Assessment basis: In Europe, where the weekly report includes the week's spot spread, Friday close prices and a low bid / high offer range, these are quoted separately.

The week's range is based on the week's deals. In the absence of deals, the assessment will reflect bids and offers and can use the correlation between



the current month and the forward month. In a week with only one deal, the assessment will reflect that deal as well as bids and offers.

The bid/offer range for the week is representative of the highest and lowest levels at which business has been talked for the week on a notional basis.

Deals done after the Friday close will be included in the following week's report. In the unusual event that no deals are done, the week's range will consist of the highest bid and lowest offer seen in the market that week.

The price at Friday close represents the bid/sell range at the Friday deadline at 1700 hours London time. In the absence of confirmed business, quoted spot prices may reflect discussion levels or the current levels of bids and offers.

The Europe barge monthly contract reference price (MCP) assessment is an arithmetic average of all bilateral settlements, so that each individual reported agreement counts once (see examples below).

1 Contractual participants

ICIS will check production and consumption volumes every 3 years, timed in line with the ICIS methodology consultation.

Participants are defined as those with a business interest to produce or purchase styrene

If new participants wish to join the process, they will formally inform ICIS of their balances, and we will check to ensure they are bona fide market participants.

Typically we would expect participants' contract volumes to be at least 12,000 tonnes/year, to ensure settlements are not off the market.

2 Timing of CP negotiations

Negotiations for the month "M" Europe CP will take place on the next working day following the settlement of the benzene CP in month "M-1".

Dates can be fixed for the calendar year at the beginning of each year and communicated to the participants, taking common national holidays in Europe into account.

ICIS will endeavour to keep the timing of the assessment, as desired by market participants. If ICIS has reason to believe that further time is required before a representative settlement may be reached, it may extend the deadline, which would usually be by 13.00 London time, with 16.00 as a fall-back time.



ICIS will make best efforts to obtain information on every settlement by the deadline.

After taking any unusual circumstances into account, ICIS may extend the settlement deadline. But after a settlement has been published by ICIS, no further settlements that emerge will be included in the figure and there will be no retroactive revision to include the late information.

3 Confidentiality of contract price settlements reported to ICIS

In line with the ICIS Editorial Standards, ICIS will keep settlements confidential.

The preferred method of communication to ICIS is email or messenger, but telephone or face-to-face is also acceptable.

In the unlikely event of being unable to contact the Europe editors, participants should use this email address: editorial@icis.com.

4 Bilateral settlements

Both SMCP settlement parties individually need to confirm the SMCP number in a separate communication to ICIS.

The final assessment will be a single number, not a range.

ICIS reserves the right to contact participants to confirm details.

5 ICIS process for reporting on final settlement of monthly CP

ICIS will not publish any initial or partial settlements until the final assessment is made and will therefore be available through the suite of ICIS products.

When ICIS has determined the final assessment, it will be reported on ICIS news and will therefore be available to all subscribers to the ICIS pricing report. The assessment will be reported as quickly as possible.

Subscribers are encouraged to register to receive email Alerts from ICIS on styrene news, through the ICIS Dashboard.

The final assessment by ICIS will also be included in that week's ICIS Styrene report.

Examples of assessment calculations:

For example in scenario 1:

Producers A, B, C. Consumers D, E, F.



Partners	Theoretical price	
A with D	2000	
A with E	2000	
B with D	2000	
B with F	2000	
C with E	2050	
C with F	2050	Total 12100 divided by 6 = 2017

Scenario 2:

A with D	2100	
B with D	2100	
C with E	2200	
C with F	2200	Total 8600 divided by 4 = 2150

Averages are whole numbers only.

The **Aromatics Daily (Europe)** report includes styrene spot transactions in USD/tonne on a FOB Amsterdam/Rotterdam/Antwerp basis. The price window reflects business for the current month, which will be abbreviated next to the quote (e.g. JAN, FEB). The month will switch to the following month, at that point when the majority of trade is being done for the following month. Spot prices are assessed based on information gathered throughout the day, including the day's bid-offer range and all deals done during the day, to close of business. On days with deals, the assessment will reflect deals alone. On days without deals, the assessment will reflect bids and offers alone and can use the correlation between the current month and the forward month. On days with only one deal, the assessment will reflect that deal as well as bids and offers.

The **ICIS Asia-Pacific** styrene weekly carries prices on the last business day of the assessment week, due to the volatile nature of the market, and prices based on the whole week's deals and discussion levels.

The price quotes for the whole week are derived from the highest and lowest daily postings for that week.

The published ranges represent a combination of the following price indications: the deals concluded, bids and offers, buy and sell indications and notional discussions. ICIS can assess prices within the best bid and offer



range or best buy and sell indications to reflect what is workable in the market. All USD prices are moved in multiples of \$5/tonne. The assessments are rounded to the nearest multiple of five.

In the absence of deals, assessments based on bids and offers will be made to accurately reflect the levels at which business would probably have taken place during the week or on the last business day of the assessment week. Factors affecting price movements, including the supply and demand situation, plant operating rates, feedstock and derivative markets, cargo movements, and general sentiment, will also be taken into account.

Discussions on a fixed or floating (using a premium/discount to the benchmark CFR China assessment) basis are taken into consideration for the CFR NE Asia, CFR SE Asia and FOB Korea assessments. When outright discussions are unavailable, these quotes are assessed at parity to CFR China.

The CFR NE Asia monthly contract price is calculated based on the average of weekly spot CFR China and weekly spot CFR NE Asia prices for the month on a 50:50 basis.

The CFR China Monthly Settlement Price (MSP) in the Asia Pacific report are the simple averages of the weekly assessments published in the calendar weeks of the assessed month. The MSP is rounded off to two decimal places.

In the US, in the event that no trades were heard on Friday, price indications heard from that date will be included in the Friday price assessment. In Asia, price indications, notional or otherwise, from the afternoon of Friday and at the close of business only will be included in the final price assessment.

The ICIS contract price quote in the US styrene report is updated on a monthly basis upon verification of full settlement. The published values may be subjected to discounts and other formulated instruments utilised by individual parties in their respective negotiations. Market settlements are more accurately defined by the delta, or unit change detected from month to month.

The styrene CDI Large Buyer Contract prices is a monthly price with monthly changes based on a combination of spot average prices and costs. Prices are FOB.

The styrene CDI Blended Styrene Price is a formula price equally weighted: 50% monthly spot average prices & 50% costs plus an adder. Prices are FOB. The adder is based on market surveys.

The styrene CDI price is the average spot styrene price during the month. Prices are FOB. Prices are based on market surveys.

The Styrene Daily (Asia) report covers spot deals on a CFR China and FOB China basis. The assessment takes into account deals, bids and offers and



price indications heard from 1400-1700 hours Singapore time. ICIS can also derive the assessment within the best bid and offer range, after considering all other market data and information. In period of illiquidity during this period, ICIS will consider information earlier in the day for assessment purposes. If liquidity is thin for the whole day and there are no deals and discussions, ICIS may consider import/export parity levels as a reference when assessing the CFR China and FOB China prices.

The CFR China assessment is based on a limited normalisation method which was introduced from 12 March 2018 after preliminary anti-dumping duties (ADD) were announced on imports of Korea, Taiwanese and US origin in February. The final ADD carried in the following table took effect on 26 June 2018 and was further extended on 23 June 2024 for another five years.

Cargoes subjected to ADD will only be normalised to a non-ADD basis and reflected in the assessments if deals/offers/bids are within a stipulated range that reflect the ADD quantum. If the cargoes are discussed/transacted at levels outside the normalisation threshold, such information will not be considered for assessment purposes.

In most cases, ICIS will apply normalisation price adjustments using the exact ADD from respective producers in Korea, the US and Taiwan. When there is a lack of confirmation regarding the cargo's origin, ICIS will apply normalisation price adjustments of 6.75% for styrene imports from Korea, 13.85% from the US and 4% for cargoes from Taiwan and they are derived from an average of the ADD applicable to each origin, rounded off to the nearest 5 basis points.

The accepted normalisation range for Korean and Taiwanese cargoes is determined by the highest and the lowest ADD level for both regions i.e. 6.20-7.50% and 3.80-4.20%, while the normalisation range for US cargoes is taking the highest and lowest ADD of major producers i.e. 13.70-13.90%.

Origin	Company	Levy
South Korea	Hanwha Total	6.20%
South Korea	Yeochoon NCC	6.20%
South Korea	Lotte Chemical	7.50%
South Korea	LG Chem	6.60%



South Korea	SK Global Chemical	6.60%
South Korea	All others	7.50%
Taiwan	Taiwan Chemical Fiber Co.	3.80%
Taiwan	All others	4.20%
US	Lyondell Chemical	13.90%
US	Westlake Styrene	13.70%
US	INEOS Styrolution	13.90%
US	Americas Styrenics	13.90%
US	All others	55.70%

Normalisation method

Example 1 (with knowledge of cargo origin)

Non ADD (\$/tonne) 1470

ADD (Korean and HTC origin) (\$/tonne) 1425

Normalisation threshold (%) 6.20-7.50

Normalisation range (\$/tonne) 1367-1384

ADD within range No

The price of the Korean cargo will not be considered for assessment purposes.

Example 2 (with knowledge of cargo origin)

Non ADD (\$/tonne) 1490

ADD (Korean and YNCC origin) (\$/tonne) 1390

Normalisation threshold (%) 6.20-7.50

Normalisation range (\$/tonne) 1386-1403

ADD within range Yes

Normalised price (\$/tonne) $1390 + \text{ADD of } 6.2\% = 1476$

The price of the Korean cargo will be included for assessment purposes.



Example 3 (without knowledge of cargo origin)

Non ADD (\$/tonne) 1490

ADD (Korean origin but unknown company) (\$/tonne) 1390

Normalisation threshold (%) 6.20-7.50

Normalisation range (\$/tonne) 1386-1403

ADD within range Yes

Normalised price (\$/tonne) $1390 + \text{ADD of } 6.75\% = 1484$

The price of the Korean cargo will be included for assessment purposes.

The half-month price table in the daily report commentary includes assessments for prompt and forward month cargoes. In the absence of deals or firm discussions in the market, the assessment would be based on the backwardation or contango with the preceding or following months. For example, if no prices are heard for August loading cargoes, the assessment would be based on the backwardation or contango with July and/or September. When the inter-month price spreads are not available or if there is insufficient information from the market, ICIS will apply the spread from the previous trading day.

The domestic China assessments carried in the daily Asia styrene report refer to the ex-tank prices in East China.

Domestic spot cargoes can be picked up within 7 days from the publication date. East China ex-tank forward goods are for delivery between the 21st day of the current month and the last business day of the following month in China.

East China ports include Zhangjiagang, Jiangyin, Changzhou, Nantong, Ningbo and Zhenjiang. The delivery locations for cargoes based on ex-tank Jiangsu (including forward cargoes) are at Zhangjiagang, Jiangyin and Changzhou. DEL Guangdong and ex-tank Guangdong quotes and delivered south China quotes reflect cargoes going to Zhaoqing, Foshan, Zhongshan, Jiangmen and Dongguan.

The assessment time frame for the domestic quotes is from 09:00-16:00 hours Beijing time each day.

The whole week's range for the domestic quotes carried in the Styrene (Asia Pacific) and Styrene (China) reports are derived from the highest and lowest daily posting for that week.

Non-publishing dates (MEG, PTA, styrene and SAN)

The Asia and China weekly reports will not be published for the above markets during long holidays in China such as the Lunar New Year as these markets are China centric.



Styrene (EUROPE)

Daily Price Assessments

Styrene Spot Price

- FOB RDAM current month (USD/MT)
- FOB RDAM forward month (USD/MT)

Weekly Price Assessments

Styrene Monthly Contract Prices

- FOB ARA BARGE NWE (EUR/MT & conversion to US CTS/LB)
- AVERAGE FOB ARA BARGE NWE (EUR/MT & conversion to US CTS/LB)

Styrene Spot Prices

- FOB RDAM close of business Friday current month (USD/MT & conversion to US CTS/LB)
- FOB RDAM week's range current month (USD/MT & conversion to US CTS/LB)
- FOB RDAM bid/offer week's range current month (USD/MT & conversion to US CTS/LB)
- FOB RDAM close of business Friday forward month (USD/MT & conversion to US CTS/LB)
- FOB RDAM week's range forward month (USD/MT & conversion to US CTS/LB)
- CIF RDAM week's range current month (USD/MT & conversion to US CTS/LB)
- FCA RDAM (TRUCKS) (EUR/MT & conversion to US CTS/LB)

Styrene Feedstock Contract Prices

- BENZENE CIF NWE Monthly (EUR/MT & conversion to USD/GAL)
- ETHYL BENZENE FOB NWE (USD/MT & conversion to US CTS/LB)
- ETHYLENE FD NWE Monthly (EUR/MT & conversion to US CTS/LB)

Styrene (ASIA-PACIFIC)

Daily Price Assessments

Styrene Spot Prices

- CFR China (USD/MT & conversion to US CTS/LB)
- FOB China (USD/MT & conversion to US CTS/LB)
- EAST CHINA EX-TANK (CNY/MT & conversion to US CTS/LB)



- EAST CHINA EX-TANK FORWARD (CNY/MT & conversion to US CTS/LB)

Weekly Price Assessments

Styrene Monthly Contract Price (Import)

- CFR N.E. ASIA (USD/MT & conversion to US CTS/LB)

Styrene Spot Prices – Price range at close of assessment week

- FOB KOREA (USD/MT & conversion to US CTS/LB)
- CFR N.E. ASIA (USD/MT & conversion to US CTS/LB)
- CFR S.E. ASIA (USD/MT & conversion to US CTS/LB)
- CFR CHINA (USD/MT & conversion to US CTS/LB)

Styrene Spot Prices – Price range for the week

- FOB KOREA (USD/MT & conversion to US CTS/LB)
- CFR N.E. ASIA (USD/MT & conversion to US CTS/LB)
- CFR S.E. ASIA (USD/MT & conversion to US CTS/LB)
- FOB CHINA (USD/MT & conversion to US CTS/LB)
- CFR CHINA (USD/MT & conversion to US CTS/LB)
- EAST CHINA EX-TANK (CNY/MT & conversion to US CTS/LB)
- EAST CHINA EX-TANK FORWARD (CNY/MT & conversion to US CTS/LB)

Monthly Settlement Prices (MSP) – Spot Prices

- CFR China (USD/MT)

Styrene Feedstock Spot Prices

- ETHYLENE CFR N.E.ASIA (USD/MT)
- BENZENE CFR N.E.ASIA (USD/MT)

Styrene (US GULF)

Weekly Price Assessments

Styrene Monthly Contract Price

- FOB USG (US CTS/LB & conversion to USD/MT)

Styrene Spot Prices

- FOB EXPORT(+) (US CTS/LB & conversion to USD/MT)
- FOB EXPORT (*) (US CTS/LB & conversion to USD/MT)



Note: (*) = Price range at close of business Friday.

(+) = Price range for the week.

Styrene Feedstock Prices

- ETHYLENE DEL Monthly Contract (US CTS/LB)
- BENZENE FOB Monthly Contract (USD/GAL)
- ETHYL BENZENE FOB USG (US CTS/LB)

Styrene (CHINA)

Frequency: ICIS styrene weekly report published on Fridays.

Weekly Price Assessments

Styrene Spot Prices – Price range at close of assessment week

- CFR CHINA (USD/MT)

Styrene Spot Prices – Price range for the week

- CFR CHINA (USD/MT)
- FOB CHINA (USD/MT)
- EAST CHINA EX-TANK (CNY/MT)
- EAST CHINA EX-TANK FORWARD (CNY/MT)
- DEL Guangdong (CNY/MT)
- EX-TANK Guangdong (CNY/MT)

Other principles and guidelines

Normalisation

In exceptional cases where the lack of liquidity represents a challenge in making assessments, editors can choose to adopt a normalisation process to include deals/trades information which falls outside the standard specifications listed in the methodology pertaining to, but not limited to, volume, timing, delivery, payment terms, import tariffs, product specifications and other operational matters. The normalisation process adopted should be in line with standard practices and will only be used either as a reference for assessments, or be included as part of the assessment range. Where normalisation has occurred and has been reflected in a published price assessment, this will be described in the text of the report and the process will be described and justified.



Changes to methodology

All markets evolve and ICIS has a duty to ensure its methodologies for market-reporting evolve in step with markets.

ICIS therefore regularly conducts internal reviews of the appropriateness of its methodologies, based on industry feedback.

Draft changes are then made public and comment requested from industry participants, with a minimum one-month notice period, except where, exceptionally a *force majeure* event (natural disaster, war, bankruptcy of a trading exchange etc.) makes necessary a shorter notice period.

ICIS is committed to reviewing all comments on proposed methodology changes, but in some cases may find it necessary to alter its methodologies against the wishes of some market participants.

In addition, ICIS has a formal methodology consultation process. The company commits to holding this consultation every three years for the Styrene Reports. The date of the last consultation launched and the expiry date by which the company commits to conducting the next consultation can be seen at the top of the methodology document.

Please also refer to the Methodology Consultation Process section of the company's Compliance Manual. This contains detailed flow charts documenting the internal and external review and consultation process.

Consistency

ICIS achieves consistency between its assessors in exercising their judgement by requiring all assessors to follow this detailed methodology as well as the company's Editorial Standards document. In addition, ICIS reporters are required to complete standard training before undertaking the work of a market reporter. Every reporter's work is spot checked.

Data standards

ICIS has a public Data Standards Policy which covers the type and quality of information we ask market participants to report.

The following principles relate to ICIS styrene assessments and commentaries:

- Where possible, please allow access to active market traders and allow them to comment on active news stories.
- Where possible, please provide market data from both front and back-office functions.
- Where possible, please provide complete data and not a subsection.
- Flag inter-affiliate transactions.



- Flag sleeve trade.
- Flag spread trades.
- When a source or contact leaves the organisation please contact ICIS to the replacement (ICIS requests that both the source and the organisation contacts them).
- Where information is not validated by the source (i.e. rumour) please indicate as such.

Delivery locations for price assessments

Locations for ICIS styrene assessments are chosen to reflect the concentration of liquidity on the traded markets.

Exercise of judgement

Apart from instances where data may be excluded (see below), ICIS will typically exercise judgement where market information about firm bids and offers or transactions is not available.

In most cases this will involve the application of spread trade information or prevailing market relationships, detailed in the specifications section for each grade in this document.

ICIS will also exercise judgement where only a bid or offer is available, or where a bid/offer spread is so wide as to be unhelpful in establishing tradable value. In both instances, spreads to other grades or prevailing market relationships will typically be used to assess the price. In these cases the assessment will still fall above the highest firm bid and below the lowest firm offer, as long as the bid and/or offer information meets all other criteria specified in this methodology.

Exclusion of data

In line with its Editorial Standards policy, ICIS reporters actively seek to identify anomalous market information and exclude it from the assessment process. For crude market assessments, this is done by the daily information gathering and verification process carried out by reporters, whereby market transaction, bid and offer information is confirmed and verified by multiple sources.

In assessing styrene markets, ICIS takes into consideration only arms-length transactions between non-affiliated parties.

ICIS does not accept bids or offers that are not firm. Any bid or offer which is demonstrably not firm will be disregarded and further bids or offers from the same counterparty may also be disregarded.



ICIS also excludes from its assessments transactions where ICIS market reporters have reasonable grounds to doubt that a transaction is representative of typical market behaviour: for example, where a deal is concluded disregarding the best bid or offer on the market; where there is evidence that a market participant has disclosed only part of its market activity to ICIS; or where a transaction lies outside the prevailing range of typical market activity.

ICIS records instances of anomalous data and reviews these instances on a regular basis with a view to determining if a pattern exists.

Where market reporters have concerns over the behaviour of a market participant, this will be escalated using the ICIS Escalation Process for Compliance and Regulatory Issues. This can be found in the company's Compliance Manual.

Market communication

ICIS communicates with a broad range of market participants – traders, brokers, back-office employees, supply managers, operations personnel and company executives – to obtain market information.

ICIS communicates with participants by telephone, email, instant messenger and in person. All instant messenger, email communication and notes of any face-to-face communication are archived and details of telephone communication are logged and data-based.

ICIS does not accept instant messenger communication from unknown parties, and reporters are required to verify a market participant's identity prior to using IM communication.

ICIS does not regard in any way as binding attempts by companies to restrict ICIS communication with their employees. ICIS has a duty to its subscribers to obtain the maximum possible amount of market information. ICIS treats all communication from market participants as confidential.

ICIS reporters are bound by a Code of Conduct to report to their superiors any coercive or threatening communication from market participants, or any offers of inducements of any kind intended to influence an assessment.

Where improper communication appears to have taken place, ICIS will communicate in the first instance with senior management at the company or companies involved, and if necessary with relevant market authorities.

ICIS expects the highest standards of propriety from all market participants, and regards all communications from market participants as representative of the views of an individual's employer.



ICIS is committed to the highest levels of customer service, and has a formal feedback and complaints policy, which can be viewed here:

<http://www.icis.com/about/icis-feedback-policy>

Market data verification

ICIS will always make best endeavours to confirm bids, offers and transactions with the relevant party/parties. ICIS attempts to cross-check all market data received from a buy or sell-side participant with a participant's trading counterparty.

Where both counterparties to a transaction cannot or will not confirm the data, ICIS seeks corroboration from other market sources.

Where transaction or bid/offer information has been received from a trader rather than from a company's back office, ICIS always seeks confirmation from other sources.

Where ICIS has grounds to doubt an item of market data, it may request further evidence that a transaction has taken place, including documented evidence.

ICIS treats transaction data received from active brokerages as confirmed.

On occasion, in markets with low liquidity and a low number of counterparties, ICIS may choose to use unconfirmed data, but only in so far as it is aligned with other market information and comes from a source deemed reliable by ICIS based on previous interactions.

Minimum data threshold

Because of the sometimes thinly traded nature of some markets, ICIS does not have a minimum data threshold for its assessment methodologies in this market.

ICIS makes clear in its daily market comments whether it has assessed a price based on transaction or bid/offer data or whether it has used other forms of evidence or calculation.

Selection of participants

ICIS policy on general market data is that we welcome all information regardless of source or constitution as long as it is provided in good faith as true.

However, only active market participants verified as such by existing active industry participants and verified as a viable business by ICIS investigations will be allowed to contribute price data to ICIS for the purpose of assessing tradable market value under this methodology.



Unit prices and credit terms

Styrene in all regions is generally traded in US dollars/tonne, cents/lb or euros/tonne and therefore all price assessments are quoted on these bases.

Typical credit terms for styrene are 30-90 days from Bill of Lading date.

Volumes

For each region ICIS publishes the standard cargo size, found in the specifications sections of this methodology document. Market information for cargoes conforming to these standards will be fully considered in the assessment process, providing the information conforms to all other specifications and conditions published in this methodology.

As indicated earlier, if ICIS has market information regarding cargoes outside of these published ranges, it will be normalised together with any standard-sized cargo information. In this case, ICIS will seek to establish whether there is a market price premium or discount for the non-standard cargo and apply this for the purpose of making its assessment.

General Methodology Guide for ICIS Chemicals

ICIS endeavours to provide a fair and timely representation of traded prices, which could be used as an effective reference point for market participants. As no two markets are the same, ICIS hopes to tailor methodologies which reflect the needs of each specific commodity market it covers based on factors such as, but not limited to, geography, trade flows/logistics, market size, product characteristics, participants and regulation. ICIS adopts an open policy to feedback regarding its methodology and will conduct reviews on a regular basis.

Spot range assessments

Published daily and weekly, these delineate the typically tradable range for a full working day or week.

The range is normally established using verified typical transactions and standardized atypical transactions.

In the event that no relevant transactions have occurred in the assessed period, ICIS will establish a range using bids and offers for typical spec material; and using established market relationships resulting from manufacturing economics, product linkages, freight and forward markets.

ICIS Mid-Point

Established referencing to ICIS prices often refer to the mid-point of the range as the fair representation of the commodity's traded value.



Weekly range assessments are marked in some ICIS reports with a “+” to distinguish them from spot close assessments (see below).

Instrument function: In liquid markets, ICIS would typically focus on the majority traded principle which would typically exclude deals considered to be outlier deals and unrepresentative of the general market consensus. Provides overview of market activity over course of one day in the case of daily reports, or one week in the case of weekly reports. Any change in assessment periods as a result of public holidays arising in any given week will be indicated via subscriber notes. Width of range offers insight into current levels of market volatility, and could also infer associated differentials caused by logistical and product variances.

ICIS endeavours to keep a tight range through maintaining detailed methodologies but this is difficult in thinly traded markets. Variable range width means assessment trades off accuracy for inclusivity, and transparency is reduced vis-a-vis spot close assessment. Suitable for inclusion in averaging mechanisms and market analysis tools.

Spot close assessments

Published daily and weekly, these reflect the transactable market value of the assessed product at the close of business for the assessed period (daily or weekly). Assessments are nevertheless shown as a low-high range, indicating the “space” in which a transaction is deemed to have been possible at the specified time. This low-high is typically tighter than that shown in a Spot Range assessment. The assessment is established taking into account:

- typical, repeatable transactions at arm’s length between non-affiliated market participants;
- standardized “atypical” transactions, where it is possible to derive a typical equivalent market value for a transaction which does not conform to standard specifications;
- bids and offers for typical spec material;
- movements in related markets. In the absence of reliable, confirmable market information for a specific commodity, ICIS reserves the right to compute changes in specific assessments based on established relationships derived from manufacturing economics, product linkages, freight, and forward markets.

Weekly/Daily Spot Close assessments are marked in some ICIS reports with a “*” to distinguish them from Spot Range assessments (see above).

Where possible, editors will indicate any weightage used for spot close assessments which are weighted towards an active period.



Instrument function: Reflects most recent tradable market value with high transparency and high accuracy. Suitable for inclusion in averaging mechanisms and market analysis tools.

Indexes

In some markets, ICIS publishes volume-weighted averages – known as “indexes” or “indices” – of verified typical transactions over specified periods, either daily or weekly.

Inputs to an index are checked editorially for conformity to specification and statistical outliers are eliminated. See individual methodologies for details.

Instrument function: An index is a mathematically derived indicator of typical traded value over a given period. Because it is an average, the deviation from the last transacted value at the close of business could be substantial, depending on the time period assessed, hence does not always provide a currently transactable price indication.

Contract reference prices

These are publicly announced, often single number, reference contract prices, agreed in multilateral negotiations and used as a base price for contractual sales of material by producers, typically between major producers and large end-users. ICIS publishes Contract Reference prices once confirmation is obtained of at least two agreements between recognised contract partners of significant size. Note that the date of publication can vary for each contract period depending on the speed of industry negotiations.

It is common for discounts to be associated with announced contract prices, which are usually not common knowledge.

Instrument function: Contract reference prices are used in some markets as the basis for monthly or quarterly contracts and form the basis for further negotiations between producers and buyers on volume-related discounts or premiums.

Contract price assessments

Published weekly, these reflect the achievable “base price” for contractual sales of material by producers, either to onward “distributors” or direct to end-users. Prices, typically valid either for one month or for three, are arrived at by negotiation between producers and buyers, and are updated by ICIS once confirmation is obtained of agreement between major producers and typical buyers of the size indicated in individual specifications. Note that most contract prices are agreed as a base from which discounts or premiums are given to individual buyers, and that the size of these discounts typically varies based on the volume purchased over the contract period by the buyer.



In the event that market participants fail or decline to confirm outright contract price levels to ICIS, ICIS reserves the right to make its assessments of achievable contract prices based on established market relationships derived from manufacturing economics, product linkages, freight, and forward markets.

Instrument function: Provides view of baseline for currently prevailing contract mechanisms, where these are statically determined – that is, bilaterally negotiated contracts not based on automated averaging of spot market prices.

Distribution indicators

Published weekly for some markets, these reflect contract prices net of known discounts to typical-sized product distributors. See individual methodology statements for details.

Instrument function: Provides additional insight into typical prices paid by buyers in statically determined (i.e. bilaterally negotiated contracts not based on averaged spot market prices).

Margins

Published in ICIS Margin Reports, margin prices reflect computed differentials between different products related through the processing chain.

Instrument function: Provides insight into supply chain economics and industry profitability. A useful reference for baseline production cost calculations, particularly by tracking the margin shifts across different periods. Theoretically determines scope of pricing further along processing chain. Note that market behaviour sometimes violates apparent margin economics. Suitable for in-depth market and industry analysis.

List or posted prices

Published weekly for some markets, these are released by manufacturers as suggested selling prices. In many cases, these prices are reduced after negotiations with buyers. Price changes are sometimes used as important references for negotiations in thinly traded markets.

Price changes

The change in prices from the previous period is indicated in blue as an increase (+), in red as a decrease (-) or no change (n/c) or not assessed (n/a). Changes for prices at the low end of each range are shown at the left and changes for prices at the high end of each range are shown at the right. Changes in weekly spot prices represent the changes from the previous week and changes in monthly or quarterly contract prices represent the change from the previous month or quarter.



Report name

Some reports cover a range of products. Trade in product of inferior quality (off-spec) is taken into consideration when it affects the market for material that meets standard specifications. Reference to off-spec/distressed cargo is at the discretion of the editor.

Periods referred to in contract price quotations are either months (noted by standard abbreviations) or quarters of the calendar year.

Q1 January February March
Q2 April May June
Q3 July August September
Q4 October November December

Feedstock prices

Contract prices for certain feedstocks are shown where appropriate. In all cases where feedstock prices are shown, they have been taken from the current ICIS pricing report for the product.

Date

ICIS pricing reports are written on the day of publication. The only exceptions are when a public holiday impacts the market. In some circumstances reports will be compiled one or a maximum two days early. When this occurs, it is clearly marked on the report. ICIS pricing provides daily and weekly pricing reports. Deadlines (unless otherwise specified in the methodology) are 1700 hours local time in London, Singapore, Shanghai and Houston. Market close prices refer to this deadline, unless specified otherwise.

Contract price assessments are updated in reports as soon as possible after confirmation is obtained of contract settlement. Because the amount of time required to reach contract agreement varies from month to month, it is not possible to guarantee publication of monthly contract prices at the same point in each month.

Note that information received after the relevant close cannot be used for assessment purposes, nor can a correction be issued based on subsequently received information.

The date of publication is not altered in the event of public holidays. All weekly reports are published at least 50 times per year. Certain reports are not published during a two-week period in late December/early January. Daily reports are published five times per week, but may not appear on certain days due to public holidays. Please refer to the ICIS pricing publishing schedule for more detailed information.



Geographical regions

ICIS pricing normally covers products on a regional basis to ensure the main drivers impacting the market in any given area are adequately covered.


Reports are currently issued covering Europe, the Middle East, Asia or Asia-Pacific, China, India, West Asia, the United States or North America, Latin America, and the Former Soviet Union.

Within these broad areas the most common quotations comprise:

NWE	mainland Northwest Europe (N. France, N. Germany, Benelux)
Med	Southern France, Spain, Italy
NE Asia	Taiwan, Korea, Japan, China
SE Asia	Singapore, Philippines, Indonesia, Malaysia, Thailand, Vietnam
West Asia	Pakistan, India
East Asia	NE Asia & SE Asia
GCC	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE
E. Med	Greece, Israel, Egypt, Syria, Jordan, Lebanon
FSU	Former Soviet Union: Russia, Ukraine, Belarus, Uzbekistan, Kazakhstan
USG	US Gulf
CMP	China Main Port
Northern Africa	Morocco, Algeria, Tunisia, Libya, Egypt, Sudan
Eastern Africa	Eritrea, Djibouti, Somalia, Kenya, Tanzania
Southern Africa	Namibia, Mozambique, South Africa
Western Africa	Mauritania, Senegal, The Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria.

Quotation basis

Prices are quoted with reference to the terms and location of delivery. The period of delivery is also quoted for contract prices. Assessment windows vary from product to product for spot sales. See specific product entries in the Methodology for further details.



Incoterms devised by the International Chamber of Commerce are mainly used to indicate what costs are included in the price. Assessments do not include Value Added Tax (VAT). Terms regularly used in ICIS pricing reports can be found in the Glossary.

Units

Prices are quoted in the currency and unit measure relevant to the particular market. Most chemicals are quoted in US dollars per metric tonne (\$/MT), although euros per metric tonne (€/MT), US cents per pound (US CTS/LB) or US cents per gallon (US CTS/GAL) are frequently used. Historical data includes assessments previously measured in European currencies superseded by the euro.

Conversions (weights and measures)

Prices are converted to other currencies and unit measures for ease of reference. Conversions are derived from the quoted price assessments using standard rates of conversion and current exchange rates. Conversions involving weights and volumes are calculated within industry acceptable ranges, which vary from product to product according to specific gravity (e.g. USD/MT to CTS/GAL).

Foreign exchange rates

ICIS provides exchange rates for a variety of international currencies that are time aligned with publication of our pricing reports and consistent for analytical use when applied to historical pricing data. Because of our publishing schedule, certain rates used in some reports may be changed as data moves into a historical database. The ICIS methodology used is as follows:

Rates are not established by ICIS pricing but are published by arrangement with Xenon (www.xe.com). The exchange rates shown are those in effect at the time and date indicated, normally around 17:15 hours in London on the day of publication. They are not a mean or average of exchange rates in effect during the period since the report was last published, but reflect a mean of the bid/offer at the time taken for that particular day. Exchange rates published by ICIS pricing are intended only as a reference and rates offered by local banks or other financial institutions may vary.

- Exchange rates quoted at the foot of the text in ICIS pricing reports are mid-market rates, quoted to two decimal places, applicable on the date of publication. ICIS pricing also offers a real-time currency conversion tool via www.XE.com, with a click-through link from the pricing reports, to enable subscribers to make quick exchange calculations.



- Exchange rates used for the current day's price assessments in compiling the charts contained within ICIS pricing reports are mid-market rates issued at 01:00 UTC on the date of publication. This preliminary exchange rate is used to allow charts to be produced ahead of 16:00 UTC.
- Exchange rates applied to historical data are mid-market rates issued at 16:00 UTC on the date of publication.

ICIS pricing also offers a real-time currency conversion tool, with a click-through link from the pricing reports, to enable subscribers to make quick exchange calculations.

Non-market price adjustments

Non-market price adjustments are necessary on the rare occasions when after careful consideration it is determined that the level of a price assessment is deemed to have become unrealistic. Before any decision is taken to adjust a price level, a broad spectrum of market participants is polled for their views on both the necessity and potential impact of any planned change and its timing.

Once it is clear an adjustment is required, ICIS pricing posts a notice telling subscribers it intends to make the change, and asks for any feedback over a two week period. After two weeks, and if it is decided to proceed, a second notice is posted informing subscribers that the adjustment will be made two weeks later. All price adjustments take place with a minimum four weeks public notice to subscribers.

Once the adjustment has taken place it is prominently mentioned in the price report it applies to. ICIS also adds a note to the online Price History to explain the apparent step-change in prices. It is important to note that price change deltas remain unaffected by any adjustment and the price trend remains accurate.

Contract Price Change Deltas

In some markets, contract settlements – especially quarterly ones – can evolve further after the initial assessment. This may mean that the actual market movement to the next settlement may not be fully aligned with the mathematical difference between the reported prices in one period and the next. In such cases, ICIS may make an editorial decision to publish the new period's price range without including a delta value in the price table. The reasons for doing so and the indications of the actual market movement would be discussed in the text of the report. The delta box in these cases would show as “not assessed” (n/a).



Price history – key changes to methodology for contract prices

ICIS price history has been modified such that contract price assessments now relate to the period to which they apply irrespective of their settlement date. This change has been applied retrospectively to all quotes, including discontinued quotes.

As a result:

For a monthly contract (or quarterly) quote selected as frequency 'C' and downloaded as csv or displayed as a table in the original quoted currency the report date is given as the first of the month (or quarter). For a contract selected as frequency 'C' and displayed as a graph, a 'stepped' chart of the value (or average of the low and high where applicable) is displayed with the steps occurring on the first of the month (or quarter).

For a contract quote selected as frequency 'C' in any currency other than the original a single monthly (or quarterly) value (low, high and average) is displayed. This value is derived using an average of the foreign exchange rates taken at 16:00 UTC (GMT) on each of the publication dates within the month (or quarter). For the current period, the average foreign exchange rates for all the publication dates within the period to date are used.

For a contract quote selected as frequency 'W', the report date is given as the ICIS pricing weekly report publication date – the contract value (low, high and average) applicable to that month (or quarter) is displayed (which, depending on settlement date, may differ from the contract value reported at the time in that week's ICIS pricing report). For a contract quote selected as frequency 'W' and displayed as a graph, a 'stepped' chart is displayed with the steps occurring on the first publication date within the month (or quarter).

For a contract quote selected as frequency 'W' in any currency other than the original, the contract value is converted for each week using the foreign exchange rate taken at 16:00 UTC (GMT) on the publication date.

Where a contract for the current period has not yet settled, no contract value shows in a weekly price history series – price history terminates at the end of the period to which the last settled contract price applies.

Where a contract settles for a future period, it does not display in price history until publication of the first ICIS pricing report within that period.

Where an initial contract value is reported for a period, and subsequently revised, the latter (or latest) value is taken as the contract value for the whole period.