Ethylene Glycol Methodology

23 November 2016

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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 ethylene glycol methodology

All ICIS-published spot assessments in the weekly ethylene glycol 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. 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.

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 ethylene glycol 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 ethylene glycol

Frequency: ICIS quotes ethylene glycol in Asia Pacific, China, Europe and the US Gulf on Fridays.

Ethylene Glycol Daily (Asia Pacific) – formerly under Fibre Intermediates Daily (Asia) – published on Mondays to Fridays.

Assessment window: Weekly price assessments are based on information supplied by market participants through the week up to close of business on Fridays at 1700 hours in London, Singapore, Shanghai and Houston.

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

Specification:

Europe and the US:

MEG	% max DEG content – 0.5% (technical), 0.05% (fibre)
	% max water content – 0.2% (technical), 0.05% (fibre)
	Acidity – 0.005% (technical), 0.002% (fibre)
DEG	minimum purity 99.5-99%
	% max water content – 0.1-0.2%

In Asia, ICIS pricing quotes fibre-grade MEG of 99.8% purity.

Timing: In Europe, cargoes delivered zero to six weeks forward from the date of publication. European FD and FCA assessments reflect business done for the current calendar month or prompt delivery. In Asia, the CFR China Main port assessment is for delivery within zero to eight weeks from the date of the publication. China domestic assessments for MEG are for delivery within three days. As for DEG, delivery is within one week.

Terms: In Europe and the US, standard terms are 30 days. In Asia, payment terms for spot cargoes in Asia are on a letter of credit (L/C) 90 days basis. Deals concluded on a L/C at sight or L/C 30-60 days basis will be converted to an L/C 90 days equivalent prices before factoring into the assessment. For Chinese domestic contract quotes in CNY, terms are at least 90 days credit; China domestic spot business is cash on delivery or cashier's order.

Standard cargo size: In Europe, the MEG CIF NWE T2 quote reflects bulk spot trade for a minimum of 1,000 tonnes to the fibre and coolant sectors. The CIF ARA T2 DEG quote reflects bulk spot trade for a minimum of 500 tonnes. MEG FCA NWE T2 and DEG FD NWE reflect spot trade on trucks or railcars in the distribution sector of typically 23-26 tonnes.

In Asia, the standard imported cargo size for MEG is 1,000 tonnes unless otherwise stated. For example, if there is a deal for a 3,000 tonne cargo, this will be considered as three transactions for price assessment. Cargo sizes above 3,000 tonnes will not be used for assessment purposes. For DEG, the standard cargo size is 300-2,000 tonnes.

In the Chinese domestic market, the MEG assessed cargo size for bulk lots is 500 tonnes and above. For DEG, the standard cargo size is 20-100 tonnes in east China.

In the US, standard cargo size for spot assessments is 5,000-10,000 tonnes. The standard cargo size for EGI, DEG and TEG contract assessments is truckload and railcar amounts, or about 2,000-3,000 tonnes.

Assessment basis: The European monthly MEG contract price reflects a settlement confirmed by at least two producers and two consumers agreed on an arm's length basis. This base price will usually be subject to discounts relating to volume, size and/or delivery terms, but these discounts are agreed on a private and confidential basis.

Factors affecting spot price movements, including supply and demand, plant operating rates, feedstock and derivative markets, cargo movements, and general sentiment, will be taken into account for the MEG and DEG spot ranges.

When applicable, TEG information is included in the text.

The Europe report includes a formal Russian rouble denominated spot price assessment. These figures are quoted on an ex-works/ex-warehouse (EXWH Moscow Region) basis. Prices include 18% VAT.

In Asia, ICIS pricing has since 1 January 2012 changed the methodology for the CFR China Main Port weekly assessment of MEG to the simple average of daily assessments for a full work week, instead of the previous weighted-to-Friday approach. Meanwhile, the MEG daily price assessment in the MEG Daily (Asia) report has been changed to the simple average of deals captured throughout the day, instead of the previous full-market approach.

MEG Daily (Asia) report

The CFR China main port price assessments in the MEG Daily (Asia) report are derived by the following method:

A simple average is derived from all the deals captured in the day up to close of business at 17:00 hours in Singapore. The differential between the simple average price and the lowest priced deal will be derived (Spread A). The differential between the simple average price and the highest priced deal will be derived (Spread B). Between Spread A and Spread B, the smaller value will be applied to the simple average price as both a premium and a discount to derive a range for the CFR China main port assessments. The derived prices in the range are rounded off to the nearest whole number.

In the absence of deals during an illiquid trading period, ICIS will use the highest bid and lowest offer as the basis for price assessment.

Prices for bonded warehouse cargoes are normalised, depending on market conditions, before being factored into the assessments. All deals are net prices excluding commission fees. ICIS will exclude "outlier" deals found to be non-repeatable or not representative of market fundamentals.

The EX-Tank China quote in the MEG Daily (Asia) report is assessed in line with the Ex-Tank East China daily assessments for bulk cargoes (500 tonnes and above) published in the ICIS MEG daily report (Chinese language).

The CFR China main port midpoint (Chinese Yuan denominated) quote in the Ethylene Glycol Daily (Asia) report is derived by converting the USD denominated midpoint price of the CFR China main port quote into Chinese Yuan by using the daily exchange rate provided by The People's Bank of China. The midpoint figure carries two decimal places and is rounded down. The daily exchange rate is published on the State Administration of Foreign Exchange (SAFE) website:
http://www.safe.gov.cn/wps/portal/sy/tjsj_hlzjj_inquire

The CFR China main port Monthly Settlement Price (MSP) quote is updated on the last working day of the month and is derived using the simple average of all the daily CFR China main port midpoint (Chinese Yuan denominated) prices for the entire month. The MSP carries two decimal places and is rounded down.

MEG Weekly (Asia) Report

For the MEG weekly (Asia) report, the CFR China main port assessment is derived from the simple average of the daily MEG assessments for the entire week. The prices derived are rounded off to the nearest whole number. A list of deals gathered the entire week and the daily CFR China main port prices will also be included in the report.

The EX-Tank China quote in the MEG Weekly (Asia) report is assessed in line with the Ex-Tank east China weekly assessments for bulk cargoes (500 tonnes and above) published in the ICIS MEG weekly report (Chinese language).

The CFR Asia quote is a monthly contract price based on the monthly nomination price published by three major MEG producers.

The DELIVERED CHINA quote is a monthly contract price based on the monthly settlement price of a major Chinese MEG producer.

DEG Weekly (Asia) report

The CFR China main port price is assessed based on deals for the full week. In the absence of deals during an illiquid trading period, ICIS will use bids and offers as the basis for price assessment.

Cargoes of Taiwan origin are exempted from import duties of 3% into China. As such, ICIS will normalise the prices of cargoes of Taiwan origin by deducting 3% from the prices of such cargoes, in order to compare it with cargoes of other origins that are subjected to the 3% import duty.

The US contract prices represent levels paid by distributors on an FOB plant basis prior to any discounts, incentives or terminal upcharges. The EGF Export contract price is derived from Asian contract prices and is based on an average of that month's nominated Asian contract prices, minus current estimated freight rates.

US spot prices represent barge amounts of EGAF on an FOB basis. The US report carries trade data from the Department of Commerce.

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.

Ethylene Glycol (EUROPE)

Weekly Price Assessments

Monoethylene Glycol (MEG) Contract Price

- FD NWE (EUR/MT & conversion to US CTS/LB)

MEG Spot Prices

- CIF NWE T2 (EUR/MT & conversion to US CTS/LB)
- FCA NWE T2 (EUR/MT & conversion to US CTS/LB)
- EX-WORKS Russia (Rb/MT)

Diethylene Glycol (DEG) Spot Prices

- CIF ARA T2 (EUR/MT & conversion to US CTS/LB)
- FD NWE (EUR/MT & conversion to US CTS/LB)

Feedstock Prices

- ETHYLENE OXIDE FD NWE monthly contract (EUR/MT & conversion to US CTS/LB)
- ETHYLENE FD NWE quarterly contract (EUR/MT & conversion to US CTS/LB)

Ethylene Glycol (ASIA-PACIFIC)

Daily Price Assessments

MEG Spot Prices

- CFR CHINA MAIN PORT (USD/MT & conversion to US CTS/LB)
- EX-TANK CHINA (CNY/MT & conversion to US CTS/LB)
- CFR CHINA MAIN PORT MIDPOINT (CNY/MT & conversion to US CTS/LB)

MEG Monthly Settlement Price

- CFR CHINA MAIN PORT (CNY/MT)

Weekly Price Assessments

MEG Fibre Grade Monthly Contract Prices

- CFR ASIA (USD/MT & conversion to US CTS/LB)
- DEL CHINA (CNY/MT & conversion to US CTS/LB)

MEG Spot Prices

- CFR CHINA MAIN PORT (USD/MT & conversion to US CTS/LB)
- EX-TANK CHINA (CNY/MT & conversion to US CTS/LB)

DEG Spot Price

- CFR CHINA MAIN PORT (USD/MT & conversion to US CTS/LB)

Ethylene Glycol (CHINA)

Weekly Price Assessments

MEG Spot Prices

- CFR CHINA MAIN PORT (USD/MT)
- EX-TANK CHINA (CNY/MT)

DEG Spot Prices

- CFR CHINA MAIN PORT (USD/MT)
- EX-TANK EAST CHINA (CNY/MT)
- EX-TANK SOUTH CHINA (CNY/MT)

Polyester Spot Prices

- SD CHIP EX-WORKS (CNY/MT)
- BOTTLE CHIP DEL (I.V. = 0.78-0.80) (CNY/MT)
- PFY EX-WORKS (POY 150D/48F) (CNY/MT)
- PSF DEL (1.4D*38mm) (CNY/MT)

Ethylene Glycol (US GULF)

Weekly Price Assessments

Ethylene Glycol Monthly Contract Prices (FOB)

- FOB EGI (US CTS/LB & conversion to USD/MT)
- FOB EGF EXPORT (US CTS/LB & conversion to USD/MT)
- FOB DEG (US CTS/LB & conversion to USD/MT)
- FOB TEG (US CTS/LB & conversion to USD/MT)

Ethylene Glycol Spot Price (FOB)

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

ICIS Mono Ethylene Glycol (MEG) Forward Curve Methodology

Assessment basis:

The ICIS MEG CFR China Forward Curve is a modelled curve based on two inputs:

- ICIS MEG CFR China daily spot assessments
- PTA futures closing prices for three key months on the Zhengzhou Commodity Exchange (ZCE) in China

Source Points:

ICIS MEG CFR China spot assessments represent transactions taking place 0-8 (zero to eight) weeks into the future. The curve therefore uses the midpoints of this period -- 4 (four) weeks from the date of assessment-- as the anchor point for the MEG curve.

ZCE:

Taking the three key months for ZCE trading, January, May and September, ICIS computes a theoretical value for ZCE PTA on the “anchor” day, 5 days in the future, using the two closest of the ZCE months to create a straight-line extrapolation.

The difference between the theoretical value of PTA futures and the ICIS MEG CFR China spot prices is then used as a “baseline spread” with which to normalize the forward values from the ZCE. This yields a four-point set of source points for a ZCE curve, consisting of the ICIS MEG spot price assessment and the three key forward months, normalised.

ICIS does not use months other than January, May and September from the ZCE because volume traded on the exchange for other months is typically very low or zero. ZCE settlement prices for inactive months are frequently not reflective of movements in the active months.

A source point for a MEG curve going out 12 months are then computed by multiplying ZCE PTA futures prices by the underlying MEG spot-PTA futures conversion factor.

Curve creation:

ICIS uses a cubic spline algorithm to generate a curve from the source point. A premium and discount of CNY30/tonne each are then applied to the final curve for the first 4 (four) contract months. A premium and discount of CNY40/tonne each are applied to the subsequent 4-month blocks, and a premium and discount of CNY50/tonne each are applied to the last 4-month blocks, to create a ‘bid’ curve and an ‘offer’ curve.

Daily Forward Prices:

Daily forward prices for each month are extracted from the resulting curve by taking the midpoint date for each month and applying the bid and offer discount and premium. Where a partial month is assessed, the mid-date use will be the mid-date between the assessment date and the end of the month. For example, on June 19th, the mid-date value used will be that for June 24th.

When MEG swaps bids, offers and/or deals can be obtained from the market, the following information will be considered, not in ranking order:

1) Over the Counter (OTC) swap deals confirmed by at least two counter parties, and firm bids and offers. A bid or an offer is considered to be firm when it is confirmed by at least two market stakeholders. In the absence of bids, offers and/or deals for OTC contracts, it will be stated as so.

Publishing schedule: The ICIS MEG CFR China forward curve assessment is published every working day in China/Singapore, except ICIS non-publishing dates and/or when China/Singapore is closed for public holidays.

Timing: 12 months forward.

Trading terms: CFR China (Chinese yuan/tonne)

Standard volume: 100 tonnes per contract

Instrument function: Provides a basis for determining bid and offer prices for forward month contracts. It can also provide marked-to-market assessments for clearing over-the-counter and futures contracts.

Non-assessment days: When there is a public holiday in China or Singapore.

Note: ICIS reserves the right to exercise editorial discretion in not including certain information in its assessment either for lack of clarity or lack of details required to confirm the information.

Other principles and guidelines

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 Ethylene glycol 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 ethylene glycol 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 ethylene glycol 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 ethylene glycol 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

Ethylene glycol 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 ethylene glycol 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 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 China reports use exchange rates from The People's Bank of China (www.pbc.gov.cn) on the day of the report.

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.