



# North America Aromatics Daily: Pricing and Methodology

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Market data is collected by editors via telephone calls, e-mails, instant messaging and electronic transfer of back office deal sheets. Market data must be provided to OPIS Editors on the day the market is assessed, or it will not be considered in the daily assessment. OPIS Aromatics spot market coverage adheres closely to the IOSCO Principles for Oil Price Reporting Agencies. For details on OPIS' Global Compliance Strategy visit <http://www.opisnet.com/about/benchmark.aspx#compliance>. To view OPIS' Spot Customer Bill of Rights or to send us a comment or complaint visit <http://www.opisnet.com/about/methodology.aspx#rights>. OPIS conducts quarterly spot methodology reviews during which our market editors consult with stakeholders to ensure our methodologies reflect current market realities and are as useful and relevant as they can be. It is OPIS's firm policy that all submitters of spot market data or intelligence must act in good faith with OPIS and its subscribers by disclosing only truthful and complete data relevant and pertaining to our spot market coverage. OPIS will not accept any data submissions resulting from inter-affiliate transactions. Any submitter found to be willfully submitting incomplete or untruthful data will be excluded from submitting data to OPIS spot market assessments. In addition, OPIS may at its discretion report the suspected attempt at contributing knowingly false data to the submitter's company and/or immediate supervisor. For questions and/or feedback please contact [kevin.wallman@ihsmarkit.com](mailto:kevin.wallman@ihsmarkit.com).

## Overview

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OPIS has been a news and price reporting leader in the downstream refined products marketplace since 1977. We have served customers throughout the many industry segments – traders, suppliers, commercial end-users, wholesalers and retailers – with up-to-the minute, news, analysis and pricing that appears in our many published reports and on-line services.

OPIS benchmarks are underpinned by robust methodologies developed in consultation with market stakeholders and are in-line with market realities. Regular reviews by customers and editors ensure the benchmarks are fit for purpose and that there is an open communication channel with stakeholders. This enables the benchmarks to evolve with changing needs and market landscape.

Market data, including trade data, is collected by editors through various channels including telephone calls, e-mails, instant messaging, electronic platforms and electronic transfer of back office deal sheets.

Editors undergo rigorous internal market training and supervision before assessing markets as do “backup” editors who may be called on to fill in for a particular market’s primary editor. Editors’ market calls are internally reviewed daily prior to publication by a supervisory editor who checks their accuracy and adherence to OPIS methodology.

OPIS editors always search for the most complete picture of market activity in their assessments. We believe transaction data should form the bedrock of any price assessment. However, with some products and in some markets the amount of transactional data is much less comprehensive. In such case, OPIS price reporters use bid/ask ranges to set highs and lows in accordance with established methodologies. Highest bid and lowest offer may set the parameters of these ranges. In some cases, historically demonstrated mathematical formulae may be applied to calculate the differential value of an illiquid product relative to a more liquid product.

### OPIS Methodology Consultation

OPIS conducts quarterly spot methodology “open seasons” during which our market editors consult with stakeholders to ensure our methodologies reflect current market realities and are as useful and relevant as they can be. In addition, price reporters and their supervisors also run an internal annual review to ensure the methodologies are fit for purpose and in line with market requirements.

Ad-hoc requests from stakeholders and shifts in market trends necessitating a review could also trigger changes to the methodology. These spot methodology reviews are in addition to our ongoing and constant examination of our methodologies that may result in improvements in our processes and practices.

During quarterly spot methodology reviews, stakeholders are invited to provide feedback on all current methodology language to ascertain if any improvements or revisions need to be made.

Based on the input received, editorial leads will decide whether to accept or reject suggestions made by stakeholders for methodology changes. Changes go through a process of discussion and internal authorization at the senior level.

### Data Submissions

In each of OPIS’ spot methodologies, the timeframe for accepting data submissions for inclusion into our spot market assessments is set to be as accurate and reflective of market behavior as is possible given our publication deadlines.

In some markets, the timeframe available for data submissions may be longer or shorter than in other markets in order to reflect the unique nature of the spot markets being assessed. OPIS requires all submitters of spot market data or intelligence to act in good faith by disclosing only truthful and complete data relevant and pertaining to our spot market coverage. OPIS will not accept any data submissions resulting from inter-affiliate transactions. Any submitter found to be willfully submitting incomplete or untruthful data will be excluded from submitting data to OPIS spot market assessments. In addition, OPIS may at its discretion report the suspected attempt at contributing knowingly false data to the submitter’s company and/or immediate supervisor. For questions and/or feedback please contact VP – Strategic Content, Steve Tan, by email or call +65 6439.6271.

This document explains our methodology for price collection at all levels and the steps we take to ensure data integrity and accuracy.

## Complaints Policy

OPIS adopts the IHS Markit Benchmark Administration Complaints Handling Policy. IHS Markit Benchmark Administration Limited (the Administrator) has designed and published this policy, as required under Regulation (EU) 2016/1011 on indices used as benchmarks (the BMR). This policy describes the procedures and mechanisms for receiving, investigating and retaining records concerning complaints about the Administrator and its financial and commodity benchmarks.

### Background

Benchmark stakeholders may from time to time contact the Administrator or its personnel to seek clarification about a benchmark determination; obtain a better understanding of a particular benchmark methodology; or question a particular benchmark determination. This interaction between the Administrator and stakeholders is invaluable. The Administrator maintains separate policies and processes for pricing challenges, restatements and corrections.

If a stakeholder is not satisfied with the provision of, or the failure to provide a Benchmark by the Administrator, it can submit a complaint. Stakeholders who wish to make a complaint shall do so in accordance with this Complaints Handling Policy. Complaints will be resolved by the Administrator in accordance with those policies.

### Submission of a complaint

In order for a complaint to enter the formal complaints handling process, the complainant must record the complaint in writing, explaining as fully as possible the background to the complaint, and attaching all relevant materials or evidence where appropriate.

#### The complaint should be sent to:

IHS Markit Benchmark Administration Ltd.  
Ropemaker Place, 25 Ropemaker Street  
London EC2Y 9LY

Email: [complaints\\_indices@markit.com](mailto:complaints_indices@markit.com)

Complaints may be submitted in relation to any aspect of benchmark administration by the Administrator, including:

- Whether a specific benchmark determination is representative of market value;
- On a proposed change to a benchmark determination process;
- On an application of the methodology in relation to a specific benchmark determination; and
- On other decisions in relation to the benchmark determination process.
- If an employee of the Administrator (or an affiliate of the Administrator) receives an enquiry from a stakeholder which is not formally stated to be a complaint but could be regarded as such, the employee should make the stakeholder aware of this Complaints Policy.

### Complaint Handling Procedures

- Upon receipt of a complaint, the Regulatory Compliance Officer will undertake the following steps:
- Acknowledge receipt of the complaint in writing in 2 business days;
- Document the receipt of the complaint in the Administrator's Complaint Register;
- Investigate the complaint in a timely and fair manner. The investigation will be conducted independently of any personnel who may be or may have been involved in the subject matter of the investigation;
- Determine whether further escalation to the Board of the Administrator or the Benchmark Oversight Committee is required; and
- If the Regulatory Compliance Officer determines that escalation is required, the complaint will be referred to and discussed with the Board of the Administrator or, if a Board member is the subject of the complaint, the Benchmark Oversight Committee. The complainant will be advised of this escalation.

The complainant will be advised of the final outcome of the investigation within 60 calendar days, unless such communication would be contrary to the objectives of public policy. If circumstances warrant a longer time period, the complainant will be informed.

If a complainant is dissatisfied with the way a complaint has been handled or the decision in the situation, the complainant may, within six months, request that the complaint is referred to an independent third party appointed by the Administrator.

### **Record Keeping**

All documents relating to a complaint, including those submitted by the complainant, will be retained for at least five years.

### **Review**

On an at least annual basis, the Regulatory Compliance Officer will review all complaints submitted under this policy to determine the existence of any trends.

This Complaints Handling Policy shall be reviewed by the Administrator's Board at least annually. The Regulatory Compliance Officer's review of trends and the reviewed policy shall be approved by the BOC.

## **OPIS Methodology Changes and Cessations Policy**

Once OPIS has been made aware of a potential need for a review of the benchmark methodology, it will perform analysis to determine whether such methodology change would be beneficial for the quality and representativeness of the benchmark, and whether it would constitute a material change.

A methodology change is likely to be material if it impacts the index calculation process or formula, the quality of the input data, the index selection rules, the underlying market or reality measured, the panel of Contributors to the benchmark, or the benchmark level. Where a methodology change is beneficial and material, and where it is judged to be appropriate and proportionate, the Administrator will start a wider consultation which is addressed to all relevant stakeholders.

As part of a wider consultation on a methodology change to a benchmark, the Administrator will:

- Take reasonable steps to make registered users and other stakeholders aware of the proposed changes, the rationale for the methodology change, and proposed timing;
- Provide a clear timeframe during which stakeholders may provide feedback to the suggested methodology change. Consultations about methodology changes will generally be open for 4 weeks, except in exceptional circumstances where the Administrator decides that a shorter or longer consultation period is warranted;
- Within a reasonable time period after the consultation period has closed, the benchmark administrator may choose to make available a summary of the comments received along with the Administrator's responses, except where a commenter has requested confidentiality;
- Following the conclusion of the consultation process, make a decision on the methodology change and report it to the appropriate editorial senior management, IHS Markit Benchmark Administration Board members (for exchange-listed benchmarks) and compliance teams; and
- Publish a notification of the upcoming methodology change in the relevant report and registered users/customers will be notified via email, along with adequate notice of the date on which the methodology change will take place. When setting such date the Administrator will consider the type of benchmark and the extent of its use.

Once a spot methodology change or addition is contemplated, OPIS reaches out to customers in the form of a subscriber notice delivered via email soliciting feedback on the change. Feedback will be given via email or telephone and the opportunity to comment on any contemplated spot methodology change is open for up to four weeks from the notice period.

### **Cessations of a benchmark**

Situations might arise where the Administrator might consider discontinuing the provision of a Benchmark, for example given a lack of demand for the benchmark, a deterioration in data sufficiency, or changes in market structure. The Administrator will undertake any benchmark cessation in an orderly manner, taking into consideration the potential impact

to users of the benchmark and market integrity. When considering whether to discontinue or terminate a benchmark the Administrator will follow the following procedure:

- Confirm whether there are any financial instruments which reference the relevant benchmark. Other than where there are no outstanding products linked to a benchmark, the cessation of a benchmark will require escalation to and approval by the relevant editorial and product management teams, and the appropriate notification Compliance and IHS Markit Benchmark Administration Board/Benchmark Oversight Committee (BOC) should the benchmark be used for clearing of financial instruments.
- Conduct a stakeholder consultation process on the proposed cessation similar to the process used for methodology changes.
- As part of any consultation process, take reasonable steps to make registered users/customers and other relevant stakeholders aware of the rationale for the termination, the content and proposed timing of the termination.
- Provide a clear timeframe during which stakeholders may provide feedback to the cessation proposal. Consultations about cessations will generally be open for up to 4 weeks, except in exceptional circumstances where the Administrator decides that a shorter or longer consultation period might be warranted.
- Within a reasonable period of time after the consultation period has closed, the Administrator will make available a summary of the comments received during any consultation process along with the Administrator's responses, except where a commenter has requested confidentiality.

If the termination of a benchmark or family of benchmarks has been approved, a notification of the decision will be published on the relevant webpages and registered users/customers are notified, along with adequate notice of the date on which termination will take place. When deciding on the length of such period the Administrator will take into account the type of benchmark and the extent of its use.

### Quality and Integrity of Spot Price Methodology

OPIS publishes its market assessment methodology in full on this website and in abbreviated form in its nightly reports. The methodology is written in clear, easy-to-understand language and is fully available to the public and does not require a user name or password for access. Details of each product assessment's methodology are below.



## Reliable, Indicative and Distortion-free

OPIS' overarching strategic goal continues to be that it is recognized as a widely accepted fuel price benchmark for supply contracts and competitive positioning. OPIS is relied on as a trusted benchmark because, based on its published methodology and internal policies and practices, OPIS can provide assurance it remains completely unbiased and independent. OPIS has no stake in fuel transactions, is not funded by oil industry initiatives, and strictly adheres to antitrust guidelines determined by independent legal counsel.

OPIS does not discriminate between reporting parties that are in good standing and have demonstrated a commitment and reputation for truthful and accurate price discovery when calculating its market assessments.

## Criteria and Procedures

OPIS market assessors follow the marketplace throughout a full day of trading by constant communication with designated and approved traders and brokers to discover done deals, bids and offers. This full day methodology requires OPIS market assessors to be in contact with active marketplace participants during every trading day.

The OPIS full day methodology is applied to all of its market assessments with the exception of Europe LPG which utilizes a "market window" to capture deal activity. This window is described fully in the Europe LPG methodology. This "market window" approach to assessing the Europe LPG is a reflection of the preference of the market participants as documented in OPIS' electronic log of customer feedback and input and reflects the unique nature of the market's behavior.

OPIS market assessors communicate with market participants via electronic instant messaging (e.g., ICE IM, CME Pivot, AIM), email and telephone communication.

Additionally, OPIS market assessors receive deal sheets from active market participants detailing their market activity for the day.

Only market data that fits OPIS methodology is used in assessing ranges for OPIS spot products. This includes restrictions on the timing of the market activity reports and the volume of product being traded as well as other factors as enumerated extensively by individual commodity, and made publicly available.

Preference for OPIS market assessments is done deals. However, in the absence of done deals, OPIS market assessors use confirmed bids and offers to set ranges for market assessments. Highest bid and lowest offer are used by OPIS market assessors to set ranges in the absence of done deals.

In very illiquid markets, formulations are used to calculate values of derivatives of more liquid products based on historic market behavior. These formulations are set based on market participant feedback and approval.

OPIS supervisors routinely review market assessors' judgments throughout the trading day and prior to publication of the assessment. Additionally, OPIS supervisors review any market data not used in the assessment and the reasons they were not used.

Units of measure referenced in OPIS market assessments vary depending on the standard measurements used by the commodity marketplace being followed (e.g., refined products are assessed in US dollars per barrel while renewable biofuels such as ethanol are assessed in US dollars per gallon).

## Consistency Between Assessors

Each market OPIS assesses has three fully trained market editors assigned to it. Each of these market editors is fully versed in the latest methodology, market participants and market intelligence available for that market. In the event the primary market editor is not available to assess his or her market, the secondary editor is fully capable of stepping in to assess the market. Additionally, a third level of redundancy in editorial continuity is built in. All OPIS data is thoroughly archived and backed up by information technology systems and hardware on- and off-site.

New OPIS market assessors undergo apprenticeship training in OPIS methodology and are required to observe closely as veteran market assessors assess markets for a period of no less than four (4) weeks prior to assessing those markets themselves.

Additionally, OPIS market assessors report to and are supervised by a core group of veteran OPIS senior editors who ensure OPIS methodology and defined practices and procedures for assessing markets are consistently followed.

### Relative Importance of Types of Data

OPIS market editors give all due priority to concluded transactions when making market assessments with the exception of market trading days in which an exceptional event or anomaly occurs just prior to OPIS' deadline for publishing market assessments. However, all price assessments that deviate from OPIS' prioritization policy for transactional data require the consultation and prior approval of a supervisory editor.

In the case of illiquid markets where transaction volume is light or non-existent, editors draw upon bids and offers and other market intelligence to set ranges. In some cases, assessments are made based on historically demonstrable formulaic relationships to more liquid products that are reviewed regularly with the marketplace to maintain their relevance.

### Notional or Illiquid Markets

In the absence of done deals, OPIS market assessors can set ranges for products in somewhat illiquid markets based on bids and offers heard in the marketplace. In such cases, OPIS market assessors use a highest bid/lowest offer methodology.

Some OPIS market assessments are "notional values" meaning the product markets being assessed do not typically feature daily activity such as done deals, bids or offers. Instead, these markets are understood by the marketplace, OPIS customers and OPIS market assessors as formulations referring back to a "parent", more liquid product based on historical and logical pricing relationships affected by known transportation, storage or handling costs.

### Chemical Markets Overview

This statement of methodology reflects the fundamental principles that form the foundation of the IHS Markit **Daily North America Aromatics Report**. It includes detailed information on process, data collection, and the terms and conditions of price acceptance and product specifications.

The overarching goal of the IHS Markit daily price assessment is to provide market participants with a trusted and independent benchmark. IHS Markit has no stake in any commodity transactions, is not funded by oil and chemical industry initiatives, and strictly adheres to antitrust guidelines determined by independent legal counsel.

The methodology is continually evolving to reflect changing market realities and IHS Markit takes full responsibility for keeping this statement current.

The IHS Markit North America Aromatics Daily service lists North American daily spot market prices for the following aromatics markets:

- **Benzene FOB/DDP Houston (ASTM D-2359)**
- **Mixed Xylenes FOB/DDP Texas Gulf Coast**
- **Toluene FOB/DDP Houston (Nitration Grade ASTM D-841)**
- **Toluene FOB/DDP Houston Commercial Grade (Does not meet ASTM D-841, but is suitable for gasoline blending)**

All price assessments are subject to compliance with standard trading conditions with regard to **quality, parcel size, loading/delivery ports, laycans, and credit terms** as determined by standard market conventions. For IHS Markit standard trading conditions and criteria please refer to the *Methodology Product table*.

## Product Methodology Table

Product	Daily	Weekly	Monthly	Currency	Type Contract/Spot	Basis	Location	Delivery Period	Standard Load Size	Unit	Quality	Calculation / Assessment
Benzene M1/Current	x	x	x	USD	Spot	FOB/DDP	Houston	Current month	10,000	BBL	ASTM D-2359/90	Daily methodology doc
Benzene M2/Next	x	x		USD	Spot	FOB/DDP	Houston	Next month	10,000	BBL	ASTM D-2359/90	Daily methodology doc



Product	Daily	Weekly	Monthly	Currency	Type Contract/Spot	Basis	Location	Delivery Period	Standard Load Size	Unit	Quality	Calculation / Assessment
Benzene M3/Third	x			USD	Spot	FOB/DDP	Houston	Third month	10,000	BBL	ASTM D-2359/90	Daily methodology doc
Benzene Daily rolling Spot Avg	x		x	USD	Spot	FOB/DDP	Houston		10,000	BBL	ASTM D-2359/90	Daily methodology doc (25th previous month to 24th current month)
Nitration-Grade Toluene M1/Current	x	x	x	USD	Spot	FOB/DDP	Houston	Current month	10,000	BBL	ASTM D-841	Daily methodology doc
Nitration-Grade Toluene M2/Next	x			USD	Spot	FOB/DDP	Houston	Next month	10,000	BBL	ASTM D-841	Daily methodology doc
Nitration-Grade Toluene M3/Third	x			USD	Spot	FOB/DDP	Houston	Third month	10,000	BBL	ASTM D-841	Daily methodology doc
Nitration-Grade Daily rolling Spot Avg	x			USD	Spot	FOB/DDP	Houston				ASTM D-841	Daily methodology doc (25th previous month to 24th current month)
Nitration-Grade weighted Spot Avg	x			USD	Spot	FOB/DDP	Houston				ASTM D-842	
Commercial-Grade Toluene M1/Current	x	x	x	USD	Spot	FOB/DDP	Houston	Current month	10,000	BBL	Does not meet ASTM D-841 but suitable for gasoline blending	Daily methodology doc
Commercial-Grade Daily rolling Spot Avg	x			USD	Spot	FOB/DDP	Houston				Does not meet ASTM D-841 but suitable for gasoline blending	Daily methodology doc (25th previous month to 24th current month)
Mixed Xylene M1/Current	x	x	x	USD	Spot	FOB/DDP	TXGC	Current month	10,000	BBL	ASTM D-5211	Daily methodology doc
Mixed Xylene M2/Next	x			USD	Spot	FOB/DDP	TXGC	Next month	10,000	BBL	ASTM D-5211	Daily methodology doc
Mixed Xylene M3/Third	x			USD	Spot	FOB/DDP	TXGC	Third month	10,000	BBL	ASTM D-5211	Daily methodology doc
Mixed Xylene Daily rolling Spot Average	x		x	USD	Spot	FOB/DDP	TXGC				ASTM D-5211	Daily methodology doc (25th previous month to 24th current month)
Mixed Xylene weighted Spot Avg	x			USD	Spot	FOB/DDP	TXGC				ASTM D-5211	

## Daily Price Discovery Process

The North American price assessment methodology seeks to capture full-day transactions, bids, and offers for spot market **benzene, toluene, and mixed xylenes**. IHS Markit chemical market analysts will proactively poll market participants via electronic instant messaging (such as ICE Chat, Eikon, Yahoo), email, telephone, or face-to-face conversation for price data throughout the standard trading day.

Analysts will always attempt to collect data from a broad cross section of the North American aromatics sector, including producers, consumers, traders, and brokers, so that IHS Markit is not reliant on one source for data.

In order to meet publication deadline, IHS Markit reserves the right not to include transactions received **after 4 pm** Central Standard Time for consideration in the day's final price assessment process or the revision process. Information received beyond this time will be used at the analyst's discretion only.

Market participants are encouraged to report transactions, **real-time** bids and offers, and live market bid/offer ranges directly to IHS Markit. The expressions of bids and offers are regarded as open and executable to the **market at large**. IHS Markit will attempt to gather as much price information from the marketplace as possible and from as many sources as it can, so that data is not being provided from any one source. IHS Markit reserves the right to **republish** via instant messaging platforms the market information collected, and closely track the evolution of indicative values throughout the business day. All data collected is **time-stamped** and **archived** for review.

### Daily Price Assessment Laycans

IHS Markit tracks market activity throughout the North American business day to derive an assessment of spot market price levels for specified delivery/loading laycans. Based on 'normal' regional market activity, the following laycans will be assessed:

- Benzene: Month 1 (M1), Month 2 (M2), and Month 3 (M3).
- Mixed Xylenes: Month 1 (M1), Month 2 (M2), and Month 3 (M3).
- Toluene: Month 1 (M1), Month 2 (M2), and Month 3 (M3).
- On any given day Month 1 refers to the current month, Month 2 to the current month +1, and Month 3 to the current month +2.

## Price Assessment Criteria

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IHS Markit prices are assessed based on the range of confirmed physical deals transacted and reported during the North American working day for the relevant month of assessment. Where only one deal has been confirmed, then that will form the price assessment for the day. Where there is a range of deals for the same month, the lowest and highest traded values will form the range. *On occasions where there is extreme price volatility or severe illiquidity in petrochemical markets, IHS Markit will assess prices at the analyst's discretion as opposed to traded value or last heard notional ranges.*

Highest priority will be given to transactions that are **transparent** and open to any **reputable counterparty** with proper financial and logistical resources. For a deal to be used in the price assessment, it must be confirmed by a source that has been vetted and deemed an approved market source for the product in question by IHS Markit. A good faith attempt will always be made to "confirm" both sides of any transaction (meaning that the buyer and seller in the transaction have been identified and corroborate the price and terms of the sale). Deals of all types that are confirmed to IHS Markit with the stipulation that they are not for wider publication will not be used within the price assessment.

All transactions are to be "physical" product; the sale of "paper" product (meaning a financial arrangement where no physical volume is expected or required to be exchanged) will not be included in the price range.

Any transaction that has logistic restrictions, quality or specification issues, different currency, load size, or shipping terms to those specified in the *methodology product table* or any other special considerations will not be used to determine the posted range.

All buy/sell transactions, time or location swaps, or any transactions having options that could meaningfully impact the commercial value will be ignored if discovered, regardless of the price assigned.

If a transaction appears to be "out of market" (meaning significantly different in price than would be expected based on other recently confirmed price points), IHS Markit may elect to ignore the transaction. IHS Markit will also review prior expressions of buying and selling interests to examine the circumstances leading to the trade in order to determine the **integrity** of the transaction.

Transactions must be conducted **at arm's length** whereby the buyer and seller are not related in any way by means of share ownership or affiliation in each other's company.

All **bona fide** transactions can be considered for index compilation, regardless of whether it is concluded by a natural buyer (end user), seller (producer), or trader. If a transaction is identified by IHS Markit or market participants as **anomalous or suspicious**, it will be excluded from the assessment process until the situation can be clarified. This can include **repetitive transactions** between two parties within a single trading session, whereby the parties alternately buy and sell from each other. If it is verified that the transaction is above board by the **next business day**, IHS Markit will retroactively revise its market assessment to include the deal.

On days when there have been no confirmed transactions a "notional" price will be posted. A notional price reflects the consultant's best estimate of price or price range where a transaction could have occurred between an interested buyer and an interested seller. The consultant will take into account market direction, momentum, demand, and supply, as well as the

most recent transaction price information and the prevailing range of bids and offers, if any. Highest priority will be given to bids and offers that are **transparent** and open to any **reputable counterparty** with proper financial and logistical resources.

Both **repetitive and incremental** bids and offers that conform to standard market conventions, as well as **retracted** bids and offers, are included for consideration in the IHS Markit price assessment process.

M3 prices will be posted on the basis of confirmed deals for the month in question as per the assessment criteria of M1 and M2. When there are no confirmed deals or notional bid/offer range for M3, then no assessment will be made. However, if a range was posted the previous day then a range must continue to be posted based on editorial judgement.

Notional postings are indicated by the letter "n" located in the right hand column of the price range in question.

## Illiquid Markets

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IHS Markit recognizes that petrochemical markets can suffer from periods of illiquidity. In the absence of firm bids, offers, and transactions, IHS Markit will still poll market participants for expressions of interest to trade. Due to **tight correlation** between certain markets, IHS Markit also tracks **spread values** in upstream feedstock, downstream products, coproducts, and alternative products. Other factors that can influence prices, such as supply/demand data, macroeconomic issues, and geopolitics, will also be filtered for market clarity. Accordingly, in certain assessments where **insufficient market data** exists, IHS Markit analysts will exercise best judgment to **quantify** these **relative values** in the process of compiling the price index.

In the event that certain markets are shut because of public holidays, IHS Markit analysts may elect to **retain** the marker values published on the previous trading day.

## Price Assessment Revisions

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Daily price postings are open to revision if additional information becomes available after the close of the business day or outside standard working hours, provided the new information meets the deal assessment/confirmation criteria.

For a revision to be made based on new information being provided after initial assessment, a deal must be confirmed by the buyer or seller involved and must be reported no later than the close of business the next business day.

IHS Markit must be satisfied that the deal was fully representative of market conditions at the time of transaction. Changes or corrections will not be made if a transaction was made under conditions of being Private & Confidential (P&C)—and initially reported as such—but the sale was later disclosed following the publication date of the report. IHS Markit always attempts to be fully diligent in its price discovery and confirmation process and will make every reasonable effort to survey the market. However, prices that cannot be confirmed per the above standards before publication will not necessitate a correction.

Information provided by third parties, including brokers, will not be taken into account for the end-of-day assessment without further confirmation from counterparties.

All postings during the current week are “locked down” at the close of business each Thursday to align with the IHS Markit Global Aromatics Weekly report. The weekly aromatics report captures the trading week from Friday to Thursday and uses daily postings to calculate weekly averages. As a result, all daily price postings are locked down on Thursday and no further revisions can be made for the relevant reporting week.

Corrections or changes to prices may also be initiated if the price range was reported incorrectly because of clerical error, or if the price or terms were misrepresented or misunderstood. In some circumstances, the daily report will be reissued.

Revised postings are indicated by a red letter "r" located in the right hand column of the price range in question.

## Price Assessment Disputes

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Every spot price editor at IHS Markit understands that his or her top priority is calling market assessments fairly. Our methodologies are crafted after careful consultation with our customers and applied by our editors to ensure maximum transparency and accuracy.

Still, we understand there may be times when spot price customers wish to question, dispute, or comment on a price assessment or our methodologies. As a valued IHS Markit spot price customer, you have the right to:

- A prompt reply to any inquiry regarding price assessments or methodology within two trading days
- A full consideration by senior IHS Markit spot market personnel of any request for a correction or adjustment of a price assessment, as well as any suggested changes to spot price methodology, and
- Complete confidentiality.

In the event of an **assessment dispute**, the disputing party should inform IHS Markit of their complaint by the following business day via telephone call, email, or instant messaging platforms; all complaints will be acknowledged in writing within one business day. The party should, within one business day, supply IHS Markit with **evidence** of mishandling or misinformation of material data that had directly resulted in the distortion of the market assessment.

The appropriate IHS Markit personnel will reply to complaints with two (2) spot trading days via email. This reply may or may not be a resolution of the complaint, but it will acknowledge receipt of the complaint and assure the complainant that he or she can expect an answer in a timely manner.

Upon review and verification of the data, IHS Markit may then publish a price revision. IHS Markit guarantees complete **confidentiality** of the data provider in the price dispute.

## Daily Rolling Monthly Spot Average

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The daily rolling monthly spot price average indexes are only listed in the European market daily service aromatics report. These are shown for current-month benzene, toluene, and styrene and are calculated as straight arithmetical averages of both the daily high and low postings during the period between the 25th of the prior month (or the next trading day after if the 25th is not a trading day) and the 24th of the current month (or the prior trading day if the 24th is not a trading day). The current month indexes are recalculated each day during the posting period and then locked down as the current month rolls after the close of business on the 24th. The cycle then continues for the new current month. An 11-month history is also shown.

Daily spot price assessments also form the basis for prices reported in the IHS Markit Weekly Global Aromatics report. Due to the nature of the Weekly report, current month spot prices will continue to be posted in the Daily report up until the last Thursday of any given month, even if the daily spot average for the current month has ceased calculating, therefore any current month prices posted after the 24th will only contribute towards the weekly average calculation and not the daily rolling monthly spot price average calculation.

## Methodology Review

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The IHS Markit price assessment methodology is constantly scrutinized internally for clarity, relevance, and comprehensiveness by market analysts and senior analysts across the IHS Markit chemical group. Methodology changes involve a robust polling of the marketplace to ensure all points of view are considered prior to any changes being considered or made.

Internally, all methodologies are reviewed on a quarterly basis within the Market Daily Service group, and any proposed methodology changes are recorded in a central electronic file.

IHS Markit also encourages industry participants to propose improvements or revisions to daily price assessment methodology via email, telephone, and instant messaging. Based on the input received, IHS Markit senior leadership within the chemical group will decide whether to accept or reject suggestions made by stakeholders for methodology changes.

Once a spot methodology change is contemplated, IHS Markit will reach out to stakeholders in the form of a formal note delivered via email soliciting feedback on the change.

Feedback may be given via post, email, or telephone, and the opportunity to comment on any contemplated spot methodology change is open for no less than four (4) weeks and generally not more than six (6) weeks.

In the case of methodology additions, a draft notice is sent out to customers with a deadline for comments set at a maximum of two (2) weeks.

IHS Markit will publish stakeholder comments received with our responses regarding proposed methodology changes on our website and will respect commenter confidentiality when requested.



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## About IHS Markit

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and expertise to forge solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

