METHODOLOGY AND SPECIFICATIONS GUIDE

argusmedia.com

ARGUS PHOSPHATES

Contents:

LAST UPDATED: JULY 2026

The most up-to-date *Argus Phosphates* methodology is available on www.argusmedia.com

Methodology overview

Methodology rationale

Argus strives to construct methodologies that reflect the way the market trades. Argus aims to produce price assessments which are reliable indicators of commodity market values and are free from distortion. As a result, the specific currencies, volume units, locations and other particulars of an assessment are determined by industry conventions.

In the phosphates markets, Argus publishes prices as laid out in the specifications and methodology guide. Argus uses the trading period deemed by Argus to be most appropriate, in consultation with industry, to capture market liquidity.

In order to be included in the assessment process, deals must meet the minimum volume, delivery, timing and specification requirements in our methodology. In illiquid markets, Argus assesses the range within which product could have traded by applying a strict process outlined later in this methodology.

Survey process

Argus price assessments are informed by information received from a wide cross section of market participants, including producers, consumers and intermediaries. Argus reporters engage with the industry by proactively polling participants for market data. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers. Argus will also receive market data from electronic trading platforms and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email or other means.

Argus encourages all sources of market data to submit all market data to which they are a party that falls within the Argus stated methodological criteria for the relevant assessment. Argus encourages all sources of market data to submit transaction data from back office functions.

Throughout all markets, Argus is constantly seeking to increase the number of companies willing to provide market data. Reporters are mentored and held accountable for expanding their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions.

For certain price assessments identified by local management, if more than 50pc of the market data involved in arriving at a price assessment is sourced from a single party the supervising editor will engage in an analysis of the market data with the primary reporter to ensure that the quality and integrity of the assessment has not been affected.

Market data usage

In each market, Argus uses the methodological approach deemed to be the most reliable and representative for that market. Argus will utilise various types of market data in its methodologies, to include:

- Transactions
- Bids and offers
- Other market information, to include spread values between grades, locations, timings, and many other data.

In many markets, the relevant methodology will assign a relatively higher importance to transactions over bids and offers, and a relatively higher importance to bids and offers over other market information. Certain markets however will exist for which such a hierarchy would produce unreliable and non-representative price assessments, and so the methodology must assign a different relative importance in order to ensure the quality and integrity of the price assessment. And even in markets for which the hierarchy normally applies, certain market situations will at times emerge for which the strict hierarchy would produce non-representative prices, requiring Argus to adapt in order to publish representative prices.

Verification of transaction data

Reporters carefully analyse all data submitted to the price assessment process. These data include transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of price. This high level of care described applies regardless of the methodology employed. Specific to transactions, bids, and offers, reporters seek to verify the price, the volume, the specifications, location basis, and counterparty. In some transactional average methodologies, reporters also examine the full array of transactions to match counterparties and arrive at a list of unique transactions. In some transactional average methodologies, full details of the transactions verified are published electronically and are accessible to subscribers. The deals are also published in the daily report.

Several tests are applied by reporters in all markets to transactional data to determine if it should be subjected to further scrutiny. If a transaction has been identified as failing such a test, it will receive further scrutiny. For assessments used to settle derivatives and for many other assessments, Argus has established internal procedures that involve escalation of inquiry within the source's company and escalating review within Argus management. Should this process determine that a transaction should be excluded from the price assessment process, the supervising editor will initiate approval and, if necessary, documentation procedures.

Primary tests applied by reporters

- Transactions not transacted at arm's length, including deals between related parties or affiliates.
- Transaction prices that deviate significantly from the mean of all transactions submitted for that period.
- Transaction prices that fall outside of the generally observed lows and highs that operated throughout the trading period.
- Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown transaction.
- Single deal volumes that significantly exceed the typical transaction volume for that market.
- Transaction details that are identified by other market participants as being for any reason potentially anomalous and perceived by Argus to be as such.

- Transaction details that are reported by one counterparty differently than the other counterparty.
- Any transaction details that appear to the reporter to be illogical or to stray from the norms of trading behaviour. This could include but is not limited to divergent specifications, unusual delivery location and counterparties not typically seen.
- Transactions that involve the same counterparties, the same price and delivery dates are checked to see that they are separate deals and not one deal duplicated in Argus records.

Secondary tests applied by editors for transactions identified for further scrutiny

Transaction tests

- The impact of linkage of the deal to possible other transactions such as contingent legs, exchanges, options, swaps, or other derivative instruments. This will include a review of transactions in markets that the reporter may not be covering.
- The nature of disagreement between counterparties on transactional details.
- The possibility that a deal is directly linked to an offsetting transaction that is not publicly known, for example a "wash trade" which has the purpose of influencing the published price.
- The impact of non-market factors on price or volume, including distressed delivery, credit issues, scheduling issues, demurrage, or containment.

Source tests

- The credibility of the explanation provided for the outlying nature of the transaction.
- The track record of the source. Sources will be deemed more credible if they
  - Regularly provide transaction data with few errors.
  - Provide data by Argus' established deadline.
  - Quickly respond to queries from Argus reporters.
  - Have staff designated to respond to such queries.
- How close the information receipt is to the deadline for information, and the impact of that proximity on the validation process.

Assessment guidelines

When insufficient, inadequate, or no transaction information exists, or when Argus concludes that a transaction based methodology will not produce representative prices, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information. Reporters must use a high degree of care in gathering and validating all market data used in determining price assessments, a degree of care equal to that applying to gathering and validating transactions. The information used to form an assessment could include deals done, bids, offers, tenders, spread trades, exchange trades, fundamental supply and demand information and other inputs.

The assessment process employing judgment is rigorous, replicable, and uses widely accepted valuation metrics. These valuation metrics mirror the process used by physical commodity traders to internally assess value prior to entering the market with a bid or offer. Applying these valuation metrics along with sound judgment significantly narrows the band within which a commodity can be assessed, and greatly increases the accuracy and consistency of the price series. The application of judgment is conducted jointly with the supervising editor, in order to be sure that guidelines below are being followed. Valuation metrics include the following:

Relative value transactions

Frequently transactions occur which instead of being an outright purchase or sale of a single commodity, are instead exchanges of commodities. Such transactions allow reporters to value less liquid markets against more liquid ones and establish a strong basis for the exercise of judgment.

- Exchange one commodity for a different commodity in the same market at a negotiated value.
- Exchange delivery dates for the same commodity at a negotiated value.
- Exchange a commodity in one location for the same commodity at another location at a negotiated value.

Bids and offers

If a sufficient number of bids and offers populate the market, then the highest bid and the lowest offer can be assumed to define the boundaries between which a deal could be transacted.

Comparative metrics

The relative values between compared commodities are readily discussed in the market and can be discovered through dialogue with market participants. These discussions are the precursor to negotiation and conclusion of transactions.

- Comparison to the same commodity in another market centre.
- Comparison to a more actively traded but slightly different specification commodity in the same market centre.
- Analysis of prices in forward markets for physically deliverable commodity that allow extrapolation of value into the prompt timing for the commodity assessed.
- Comparison to the commodity's primary feedstock or primary derived product(s).
- Comparison to trade in the same commodity but in a different modality (as in barge versus oceangoing vessel) or in a different total volume (as in full cargo load versus partial cargo load).

Volume minimums and transaction data thresholds

Because of the varying transportation infrastructure found in all commodity markets, Argus typically does not establish thresholds strictly on the basis of a count of transactions, as this could lead to unreliable and non-representative assessments. Instead, minimum volumes are typically established which may apply to each transaction accepted, to the aggregate of transactions, to transactions which set a low or high assessment or to other volumetrically relevant parameters.

For price assessments used to settle derivatives, Argus will seek to establish minimum transaction data thresholds and when no such threshold can be established Argus will explain the reasons. These thresholds will often reflect the minimum volumes necessary to produce a transaction-based methodology, but may also establish minimum deal parameters for use by a methodology that is based primarily on judgment.

Should no transaction threshold exist, or should submitted data fall below this methodology's stated transaction data threshold for any reason, Argus will follow the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

Minimum transaction thresholds

Assessment	Minimum trade volume for inclusion in assessment
fob bulk DAP/MAP Tampa	5,000t

Transparency
Argus values transparency in markets. As a result, we publish lists of deals in our reports that include price, basis, counterparty and volume information. The deal tables allow subscribers to cross check and verify the deals against the prices. Argus feels transparency and openness is vital to developing confidence in the price assessment process.

Swaps and forwards markets
Argus publishes forward assessments for numerous markets. These include forward market contracts that can allow physical delivery and swaps contracts that swap a fixed price for the average of a floating published price. Argus looks at forward swaps to inform physical assessments but places primary emphasis on the physical markets.

Publications and price data
Argus Phosphates prices are published in the Argus Phosphates report. Subsets of these prices appear in other Argus market reports and newsletters in various forms. The price data are available independent of the text-based report in electronic files that can feed into various databases. These price data are also supplied through various third-party data integrators. The Argus website also provides access to prices, reports and news with various web-based tools. All Argus prices are kept in a historical database and available for purchase. Contact your local Argus office for information.

Corrections to assessments
Argus will on occasion publish corrections to price assessments after the publication date. We will correct errors that arise from clerical mistakes, calculation errors, or a misapplication of our stated methodology. Argus will also correct errors that arise from mistakes made by market participants in reporting transactions. Argus will not retroactively assess markets based on new information learned after the assessments are published.

Ethics and compliance
Argus operates according to the best practices in the publishing field, and maintains thorough compliance procedures throughout the firm. We want to be seen as a preferred provider by our subscribers, who are held to equally high standards, while at the same time maintaining our editorial integrity and independence. Argus has a strict ethics policy that applies to all staff. The policy can be found on our website at www.argusmedia.com. Included in this policy are restrictions against staff trading in commodities or related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving of spreadsheets and deal lists used in the price assessment process. Argus publishes prices that report and reflect prevailing levels for open-market arms length transactions (please see the Argus Global Compliance Policy for a detailed definition of arms length).

Consistency in the assessment process
Argus recognises the need to have judgment consistently applied by reporters covering separate markets, and by reporters replacing existing reporters in the assessment process. In order to ensure this consistency, Argus has developed a programme of training and oversight of reporters. This programme includes:

- A global price reporting manual describing among other things the guidelines for the exercise of judgment.
- Cross-training of staff between markets to ensure proper holiday and sick leave backup. Editors that float between markets to monitor staff application of best practices.
- Experienced editors overseeing reporting teams are involved in daily mentoring and assisting in the application of judgment for illiquid markets.
- Editors are required to sign-off on all price assessments each day, thus ensuring the consistent application of judgment.

Review of methodology
The overriding objective of any methodology is to produce price assessments which are reliable indicators of commodity market values and are free from distortion. As a result, Argus editors and reporters are regularly examining our methodologies and are in regular dialogue with the industry in order to ensure that the methodologies are representative of the physical market being assessed. This process is integral with reporting on a given market. In addition to this ongoing review of methodology, Argus conducts reviews of all of its methodologies and methodology documents on at least an annual basis.

Argus market report editors and management will periodically and as merited initiate reviews of market coverage based on a qualitative analysis that includes measurements of liquidity, visibility of market data, consistency of market data, quality of market data and industry usage of the assessments. Report editors will review:

- Appropriateness of the methodology of existing assessments
- Termination of existing assessments
- Initiation of new assessments

The report editor will initiate an informal process to examine viability. This process includes:

- Informal discussions with market participants
- Informal discussions with other stakeholders
- Internal review of market data

Should changes, terminations, or initiations be merited, the report editor will submit an internal proposal to management for review and approval. Should changes or terminations of existing assessments be approved, then formal procedures for external consultation are begun.

Changes to methodology

Formal proposals to change methodologies typically emerge out of the ongoing process of internal and external review of the methodologies. Formal procedures for external consultation regarding material changes to existing methodologies will be initiated with an announcement of the proposed change published in the relevant Argus report. This announcement will include:

- Details on the proposed change and the rationale
- Method for submitting comments with a deadline for submissions
- For prices used in derivatives, notice that all formal comments will be published after the given consultation period unless submitter requests confidentiality

Argus will provide sufficient opportunity for stakeholders to analyse and comment on changes, but will not allow the time needed to follow these procedures to create a situation wherein unrepresentative or false prices are published, markets are disrupted, or market participants are put at unnecessary risk. Argus will engage with industry throughout this process in order to gain acceptance of proposed changes to methodology. Argus cannot however guarantee universal acceptance and will act for the good order of the market and ensure the continued integrity of its price assessments as an overriding objective.

Following the consultation period, Argus management will commence an internal review and decide on the methodology change. This will be followed by an announcement of the decision, which will be published in the relevant Argus report and include a date for implementation. For prices used in derivatives, publication of stakeholders' formal comments that are not subject to confidentiality and Argus' response to those comments will also take place.

General methodology

Argus surveys a wide variety of market participants including producers, trader, buyers, sellers and other market analysts. This survey seeks to confirm what trade has been done, by whom, as well as firm bids and offers. The goal is to cross-check market transactions from all participants wherever possible. The survey also seeks to ascertain fundamentals data, tender news and supply and demand information. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers.

In assessing free on board (fob) prices, Argus speaks with key producers in the exporting regions, as well as trading firms. Awards under sales tenders can also define fob pricing. Argus also uses netbacks from cost and freight (cfr) levels in destination markets in order to gauge an appropriate fob price.

In assessing cfr prices, Argus speaks with relevant parties in destination markets, including buyers, producers and trading firms. Awards under buy tenders can also define cfr levels.

Argus attempts to speak to all parties involved in a transaction. Argus also consults with freight brokers to ensure accurate netback calculations.

Assessing price ranges

Phosphate prices are assessed in various regions, countries and within countries on a fob basis in the main export regions and on a cfr basis in the main destination markets. Deals, bids and offers must be considered repeatable to be reflected in the assessments.

The report seeks to determine price ranges in which transactions are taking place or in which transactions could have taken place between a willing buyer and seller.

When there is sufficient liquidity and deals data are deemed reliable and representative, the price range will be defined on the low and the high end of confirmed deals concluded throughout the trading day or week. These deals must meet the minimum volumes and strict delivery timing, as well as specifications as laid down in this methodology.

Information on transactions, bids and offers that lie outside the specifications of timing, size, location and quality may be used in assessing price ranges, but deals that lie within these specifications are given most weight. Offers and bids under tenders, even though unawarded, can also be used in assessing market prices.

In markets that periodically lack liquidity, Argus may assess price ranges based on a range of other market information including netbacks to more liquid markets and market fundamentals.

Assessment period

Unless specified, prices are for the week up to and including the day of publication. Market information received after 4.30pm London time on the day of publication may not be considered for inclusion in the assessment. During periods of high volatility, weekly assessments are weighted towards trading activity later in the week.

Spot, contract and formula pricing

Spot
Spot pricing refers to specific cargoes sold that are scheduled to load within 40 days of the sale being agreed. These prices are cash prices, i.e. net of any credit.

Contract
Contract pricing is split out from spot market assessments and refers to a significant sales volume spread over a minimum three-month shipping period.

Quarterly contract prices are updated when prices for the relevant quarter have been agreed, not necessarily or automatically at the beginning of that quarter.

Formula
Formula pricing is an arrangement where a buyer and seller agree in advance that the price to be paid for a product delivered in the future will be based on a pre-determined calculation, sometimes utilising published prices from Argus and/or other publications. Given that the exact nature of the calculation or the agreement between the parties is often private and confidential, and if the deal is considered a one-off (i.e not repeatable), then calculated netbacks are not used in formulation of a spot price range. However, if a buyer and seller use this method of pricing for multiple transactions on a specific trade route, then the editor may use the deal in formulating a spot price range using current known cfr levels, domestic prices in the destination country and indicative freight rates.

Terms

Some transactions are conducted on a sight/cash basis, but where credit terms apply, e.g. up to 180 days, these are taken into account and subtracted from the price so that the published price is net of credit or other terms.

The quarterly phosphoric acid price in India usually includes 30 days' credit and is assessed as such.

Units

Unless noted, all prices are assessed in US $/t, apart from US domestic assessments, which are priced in short tons (st). The report includes a price assessment for phosphoric acid that is expressed in $/t P2O5 (merchant grade phosphoric acid is shipped as a 52-54% P2O5 solution) and an assessment for US molten sulphur quarterly contracts cfr Tampa, which is expressed in US long tons.

Lot and cargo sizes

For international trade, the minimum lot size used for consideration and inclusion in the relevant price range is 5,000t of a particular product (this includes part cargoes on larger vessels including other fertilizers and for which the freight rate may be more favourable, although this will be explained in the text). In the US domestic market the price is indicative of one barge, assumed to be carrying a minimum of 1,500st, with no set maximum number of barges. There may be occasions when a barge is loaded with less quantity for reasons of low draught levels, but this will be explained fully in the text. The minimum lot size used for consideration and inclusion in the purified phosphoric acid fob China price ranges is 25t of solution.

Argus considers cargoes as follows — typically short sea routes in Europe (for example from north Africa) employ vessels of 5,000-6,000t. Deepsea voyages employ handysize vessels and above:

- Minimum 5,000t (for example Mediterranean vessels from north Africa)
- Handysize 10,000-35,000t (the majority of deepsea phosphate trade)
- Handymax (35,000-59,000t)
- Panamax (60,000-85,000t plus)
- Post-panamax 85,000t and above (OCP began loading such vessels in Jorf Lasfar, Morocco, in early 2015)

In the US domestic phosphates market:

- A typical barge on Nola is 1,500st
- A central Florida railcar is minimum 100st

Products and specifications

Diammonium phosphate (DAP) is a dry, bulk fertilizer containing 18pc nitrogen and 46pc phosphate by weight. It is produced by combining ammonia with phosphoric acid and is widely used in granular form for direct application to land or as a feedstock for bulk blending for NPK manufacture. Prices are only assessed based on deals concluded in the agricultural sector. Sales to the industrial sector may be discussed in the text, but will not form part of the assessment.

Monammonium phosphate (MAP) is a dry bulk fertilizer containing typically 11-12pc nitrogen and 52pc phosphate by weight. It is also formulated by adding phosphoric acid to ammonia solution and can be used for direct application or for use as a raw material in bulk blending. Argus assesses the MAP price for product with minimum 52pc phosphate by weight. Typical grade includes Moroccan 11-52 and Russian 12-52 MAP. Other types of product, particularly 11-44 and 10-50 MAP from China, are mentioned in the text and prices reported.

Triple superphosphate (TSP) 46pc P2O5 (straight fertilizer — i.e. no N or K).

Single superphosphate (SSP) — SSP does not contain N or K. Typical grades contain between 16-23pc P2O5. Much of the SSP produced globally is consumed locally, particularly in Brazil and India. Internationally traded SSP typically contains 19-21pc P2O5 in total and contains at least 16pc water-soluble P2O5. SSP with a lower water-soluble P2O5 content is often referred to as "mineral complex" and is not included in price assessments.

Phosphoric acid 100pc P2O5 (as merchant grade 54pc P2O5 solution) usually quoted in terms of tonne P2O5, i.e. 100pc P2O5 content, although it is actually shipped in a 52-54pc concentration, called merchant grade acid or phosphoric acid solution, for ease of handling and storage. Phosphoric acid is a liquid, is highly corrosive and dangerous and has to be shipped in stainless steel tankers.

Purified phosphoric acid (PPA) is a solution which typically contains 85pc H3PO4, equivalent to 61.5pc P2O5. It is usually quoted in $/t solution. Applications for industrial-grade PPA include the production of LFP batteries.

Feed-grade monocalcium phosphate (MCP) is a dry, bulk phosphate-based product for livestock nutrition, containing around 22-23pc phosphate by weight. It can be produced by combining purified phosphoric acid with a calcium source (typically limestone) or by combining dicalcium phosphate with phosphoric acid. Prices are assessed based on deals concluded in the farming sector.

Feed-grade dicalcium phosphate (DCP) is a dry, bulk phosphate-based product for livestock nutrition, containing around 16.5-18pc phosphate by weight. Internationally traded DCP typically contains around 18pc phosphate by weight. DCP used in the Chinese domestic market typically contains 16.5-17pc phosphate by weight. It can be produced by combining purified phosphoric acid with a calcium source (typically limestone) or by combining phosphate rock with hydrochloric acid. Prices are assessed based on deals concluded in the farming sector.

Phosphate rock — phosphate fertilizers are made from phosphate rock (calcium phosphate). This is mined as an ore either by opencast (strip) or underground mining. Phosphate rock is present in many countries, but is only present in commercially viable quantities in a few. The phosphate content or grade of phosphate rock is expressed as phosphorus pentoxide (P2O5). In the phosphate industry and consequently Argus reports, the phosphate content of the rock is usually expressed as tricalcium phosphate and traditionally referred to as bone phosphate of lime (BPL) (P2O5 × 2.1853 = BPL). Manufacturers of phosphoric acid and phosphate fertilizers normally stipulate a minimum content of 28pc P2O5, and most marketed grades of phosphate rock contain more than 30pc P2O5 (65pc BPL). The concentration of P2O5 in the rock determines its quality. The higher the P2O5 content, the higher the rock quality. The price of phosphate rock is also affected by qualities such as the concentration of heavy metals and silicon dioxide (a major component of sand), the dustiness (proportion as small particles), and the solubility in citric acid of the phosphate. Phosphate rock is washed and treated to remove impurities at the mine. It is then processed through reaction with sulphuric acid to make phosphoric acid. Phosphoric acid is the main intermediate product used to make DAP, MAP, TSP and some compound fertilizers. The production of 1t of phosphoric acid requires approximately 3.5t of phosphate rock.

Markets covered

DAP/MAP — fob bulk

DAP/MAP Australia

DAP China
Daily and weekly prices are published. Daily prices are assessed 9am-5pm Singapore time.

DAP China $/t P2O5, $/unit
The value of Chinese DAP fob in P2O5 terms per tonne and per unit, useful in comparing Chinese DAP export values to other phosphate exports and to netbacks from the domestic sector.

Calculated as:
$/t P2O5 = (DAP China fob – (18/46*China prilled urea fob))*100/46
A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

DAP China ex-works
This price is assessed using the yuan/$ exchange rate at the time of assessment, usually on Thursday afternoon.

MAP China 11-44
In the absence of liquidity, the price can be defined on the basis of prices in Brazil.

MAP China 10-50
In the absence of liquidity, the price can be defined on the basis of prices in Brazil.

MAP China 11-52
In the absence of liquidity, the price can be defined on the basis of prices in Brazil.

Technical MAP (tMAP) China 12-61
See the Argus Sustainable and Specialty Fertilizers methodology.

DAP Saudi Arabia (KSA)

MAP Saudi Arabia (KSA)
Much of the MAP sold is to Brazil and the US and is done so on a formula basis either directly or through traders. Where this trade is discovered, Argus will assess the price on the basis of cfr prices in Brazil or the US less freight rates to Ras Al Khair. Argus also includes spot business in Brazil and other markets both as direct sales from producers or where traders are involved.

DAP Jordan

DAP Russia Baltic/Black Sea

MAP Baltic

DAP Lithuania Baltic
DAP exported from the port of Klaipeda.

DAP Egypt
In times of illiquidity, the price can be assessed based on the latest sales from other north African origins.

DAP Tunisia
During periods of illiquidity, the range may be defined on the basis of Moroccan DAP pricing, as both serve similar markets. Allowance is made for freight differentials. Contract shipments to Bangladesh are not included.

DAP Morocco
This price range is defined by sales made by OCP.

DAP Morocco $/t P2O5, $/unit
The value of Moroccan DAP in P2O5 terms per tonne and per unit, useful in comparing Moroccan DAP prices and netbacks to the price of phosphoric acid contracts in India, a relationship that shapes quarterly phosphoric contract negotiations.

Calculated as: $/t P2O5 = (DAP Morocco – (18/46*North Africa Urea))*100/46. A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

Morocco DAP fob equivalent netback US terminals
The Argus DAP Twin Cities fot price assessment less the Argus Mississippi river-St Paul spot barge freight rate assessment, throughput costs regularly reviewed by Argus including loading and unloading from barges at New Orleans and at the terminal, and an estimated freight from Jorf Lasfar to New Orleans.

See the Argus North American Fertilizer methodology for more information on the DAP Twin Cities fot price and barge freight rate assessments. The price is a theoretical netback to OCP Morocco.

Note: US price and barge freight assessments are converted from short to metric tonnes as part of the netback calculation

MAP Morocco

DAP Benelux fot/fob duty paid/duty free
This is the price in the Benelux/Terneuzen region on an fot basis.

fot/fob DAP Benelux $/t P2O5
The value of Benelux DAP in P2O5 terms per tonne.

Calculated as: $/t P2O5 = (DAP bulk fot/fob Benelux duty paid/free – (18/46*French Atlantic urea))*100/46

DAP Mexico

DAP/MAP Tampa
During periods of illiquidity, Argus may calculate a netback fob price on the basis of achievable cfr prices in Latin America. Normally, the price is rolled over if no new business or offers are reported. Netbacks from shipments of US product to Mosaic's distributions systems offshore — particularly in Brazil and India — are not included in the range, nor are netbacks from contract DAP shipments to Japan, Australia and Canada.

DAP/MAP Tampa fob equivalent netback Brazil
The Argus MAP cfr Brazil price assessment less the Argus Tampa-Brazil (25,000-35,000t) freight rate assessment giving an equivalent netback for US product moving to Brazil under contract. See the Argus Brazil Grains and Fertilizer methodology for more information on the DAP cfr Brazil price assessment.

DAP fob Tampa equivalent netback India
The cfr DAP India price less the Argus Tampa-west coast India (55,000-60,000t) freight rate assessment. The result is a theoretical netback to Tampa from Mosaic's distribution business within India.

DAP US Gulf domestic barge
Daily and weekly prices are published. See DAP Nola barge fob in the Argus North American Fertilizer methodology.

MAP US Gulf domestic barge
See MAP Nola barge fob in the Argus North American Fertilizer methodology.

DAP Central Florida railcar
See DAP Central Florida rail in the Argus North American Fertilizer methodology.

DAP/MAP — cfr/fca/ex-warehouse (bulk unless specified)

DAP southeast Asia
Delivered to southeast Asia including but not limited to Thailand, Malaysia, Indonesia, Vietnam, and the Philippines.

DAP India
Daily and weekly prices are published.
Prices are duty unpaid. The daily price is assessed 9am-4.30pm London time.

DAP India $/t P2O5, $/unit
Calculated weekly as: $/t P2O5 = (India DAP – (18/46*cfr India prilled bulk urea))*100/46. A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

DAP Pakistan

DAP ex-warehouse Karachi
DAP in 50kg bags, ex-warehouse Karachi for transport by truck. Prices are assessed in rupees per bag and converted to $/t for publication and include both domestically produced and imported DAP. Minimum of one truck, about 45t.

DAP Turkey
The price paid by Turkish importers for DAP on a duty free/duty paid basis.

DAP Turkey (bagged fca)
DAP in 50kg bags, fca warehouse, delivered by truck. Prices are assessed in lira per tonne and converted to $/t for publication and include both domestically produced and imported DAP. Minimum of one truck, about 25t.

DAP bagged fca Romania
DAP offered on a bagged basis at a defined location in Romania from distributors, typically at a seller's warehouse or terminal.

DAP east coast Africa
Prices given in tenders, for example, are netted to a cfr value accounting for local port and any financing costs.

MAP fca Geelong, Australia 10-50
The price of at least 10t, bulk from warehouses in Geelong for shipment by truck. Assessed in Australian dollars/tonne and converted to US $/t for publication.

MAP South Africa

MAP Brazil 11-52
Daily and weekly prices are published.
The daily price is assessed 9am-4.30pm London time.

MAP Brazil 11-52 $/t P2O5, $/unit
The value of 11-52 MAP sourced from China for export to Brazil, useful in comparing the relative P2O5 values of 11-52, 10-52 and 11-44. Typically there is a discount in the price of 11-44 and 10-50 to 11-52 when relative nutrient values are taken into account.

Calculated weekly as: $/t P2O5 = (Brazilian MAP 11-52 cfr range – (11/46*Brazilian granular urea cfr))*100/52. A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

MAP (ex-China) Brazil 10-50
See the Argus Brazil Grains and Fertilizer methodology.

MAP Brazil 10-50 $/t P2O5 and $/unit
Calculated as: $/t P2O5 = (Brazilian MAP 10-50 cfr range – (10/46*Brazilian granular urea cfr))*100/50. A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

MAP (ex-China) Brazil 11-44
See the Argus Brazil Grains and Fertilizer methodology.

MAP Brazil 11-44 $/t P2O5, $/unit
Calculated as: $/t P2O5 = (Brazilian MAP 11-44 cfr range – (11/46*Brazilian granular urea cfr))*100/44. A $/unit value figure is also provided, calculated as the $/t P2O5 value divided by 100.

DAP/MAP cfr bulk Argentina/Uruguay

TSP/SSP

TSP fob China

TSP fob eastern Med (Lebanon/Israel)

TSP fob Tunisia
Sales under government-to-government contracts are not considered for inclusion in the assessment.

TSP fob Morocco

SSP 19pc P2O5 cfr Brazil
See the Argus Brazil Grains and Fertilizer methodology.

SSP 20pc P2O5 cfr Brazil
See the Argus Brazil Grains and Fertilizer methodology.

Feed phosphates

MCP bagged fob south China
MCP offered by suppliers on a bagged basis at a port in southern China for export. The minimum transaction volume to qualify for the assessment is 100t.

MCP bagged ex-works south China
MCP offered by distributors on a bagged basis at a defined location in southern China, typically at a seller's plant or warehouse. The minimum transaction volume to qualify for the assessment is 100t.

MCP bulk delivered east Europe
MCP delivered by truck to the end buyer. The minimum transaction volume is one truck of around 24t.

MCP bulk delivered west Europe
MCP delivered by truck to the end buyer. The minimum transaction volume is one truck of around 24t.

DCP bulk fob south China
DCP offered by suppliers on a bulk basis at a port in southern China for export. The minimum transaction volume to qualify for the assessment is 100t.

DCP bagged ex-works south China
DCP offered by distributors on a bagged basis at a defined location in southern China, typically at a seller's plant or warehouse. The minimum transaction volume to qualify for the assessment is 100t.

MDCP bagged fob south China
MDCP offered by suppliers on a bagged basis at a port in southern China for export. The minimum transaction volume to qualify for the assessment is 100t.

MDCP bagged ex-works south China
MDCP offered by distributors on a bagged basis at a defined location in southern China, typically at a seller's plant or warehouse. The minimum transaction volume to qualify for the assessment is 100t. The price is also published in RMB/t.

Raw materials

Phosphoric acid/t P2O5

cfr India
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly. The price is settled quarterly in $/t P2O5 cfr with 30 days credit. On occasion, the price is settled for six months.

cfr western Europe
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly. Prices are agreed on a quarterly basis. The price change from quarter to quarter usually tracks the Indian price.

fob China industrial grade PPA ($/t solution)
Spot prices are assessed and published weekly. The acid contains 85pc H3PO4 and prices are in $/t of solution. The product is typically packaged in 35kg barrels and shipped in containers.

fob China food grade PPA ($/t solution)
Spot prices are assessed and published weekly. The acid contains 85pc H3PO4 and prices are in $/t of solution. The product is typically packaged in 35kg barrels and shipped in containers.

Phosphate rock (BPL, or % P2O5 when stated)

fob Jordan (68-70)
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly.

cfr India (66-68), cfr India (68-70), cfr India (70-72)
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly.

fob Morocco (68-70), fob Morocco (70-72)
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly.

fob Algeria (65-68) contract
Assessed and published quarterly. Contract negotiations can be protracted and the price does not always settle promptly.

fob Egypt (57-61)
Fob Red Sea ports, assessed and published monthly, once a price has been established by the market.

fob Egypt (66)
Fob Red Sea ports, assessed and published monthly, once a price has been established by the market.

cfr China (26-27)
Assessed and published monthly. Prices are for trade of at least 5,000t shipped on bulk vessels. Prices are based on cfr trade and net forward prices.

delivered Hubei (28pc P2O5)
Assessed and published monthly in Yuan/t. Prices are for trade on a delivered-Hubei basis including truck costs from the seller's mine/warehouse to the buyer.

cfr southeast Asia (57-61)
Cfr Indonesia and Malaysia, assessed and published monthly, once a price has been established by the market.

Ammonia and sulphur import costs

A calculation of the variable import costs of ammonia and sulphur for DAP production in China, India, north Africa and the US.

Prices are published in $/t of DAP, assume 0.22t of ammonia and 0.4t of sulphur per tonne of DAP produced and are based on a rolling four-week average of ammonia and sulphur prices to approximate stock use by DAP producers.

Underlying price assessments

China
Ammonia cfr China spot
Sulphur granular cfr China spot

India
Ammonia cfr India spot
Sulphur dry bulk cfr India spot

North Africa
Ammonia cfr north Africa spot
Sulphur lump granular cfr north Africa spot

US
Ammonia cfr US Gulf spot
Sulphur molten cfr Tampa contract quarter

See the Argus Ammonia, Argus Sulphur and Argus North American Fertilizer methodologies.

Argus DAP index

A weekly global composite DAP index based on a basket of Argus price assessments weighted by annual export volumes.

Component assessments

The index is based on Argus price assessments:

- DAP bulk fob China
- DAP bulk fob Morocco
- DAP bulk fob Saudi Arabia
- DAP bulk fob Russia
- DAP/MAP bulk fob Tampa
- DAP fob Jordan

Weighting

Those prices are weighted in the index in proportion to the country of origin's exports, according to the latest available IFA data. The index is re-weighted in the first report following the publication of the latest IFA DAP data – historical re-weighting dates are shown in the table above. Since January 2023, the five component prices included in the index have also been reviewed annually and are the five largest exporters for which Argus publishes price assessments, based on IFA data.

Weighted prices are totalled and indexed such that 1 June 2017 = 100.

Weighting

Year	Effective date	China	Morocco	Saudi Arabia	Russia	Jordan	US
2015	13-Oct 2016	0.53787	0.08712	0.15643	0.079		0.13958
2016	12-Oct 2017	0.51144	0.12949	0.13953	0.09072		0.12882
2017	25-Oct 2018	0.45508	0.16473	0.18421	0.07807		0.11791
2018	28-Nov 2019	0.47998	0.19513	0.17721	0.08261		0.06507
2019	12-Nov 2020	0.42204	0.1839	0.20238	0.10224		0.089442
2020	11-Nov 2021	0.37496	0.24697	0.22033	0.09748		0.06027
2021	27-Oct 2022	0.43295	0.23521	0.2013	0.09297		0.03757
2021	5-Jan-2023	0.42746	0.23223	0.19875	0.09179	0.04978	
2022	18-Oct-2023	0.27550	0.30737	0.23840	0.12747		0.05127
2023	5-Dec-2024	0.34550	0.26666	0.23399	0.09868	0.05517	
2024	27-Nov-2025	0.30787	0.26186	0.25916	0.11099	0.06012	

Freight

Argus Phosphates includes several freight rate assessments. Prices are assessed as a range and include information collected over the course of the trading week.

Freight rate assessments are established by surveying freight providers and buyers of spot freight, maintaining a balance between both parties. The assessment is for cargoes that will load and move within the next 30-40 days.

Finished phosphates

- Tampa-west coast India (55,000-60,000t)
- Morocco-west coast India (50,000t)
- Morocco-Brazil (25,000-35,000t)
- Egypt-Brazil (30,000-35,000t)
- Tampa-Brazil (25,000-35,000t)
- Baltic-Brazil (25,000-35,000t)
- Baltic-India (25,000-35,000t)
- Kingdom of Saudi Arabia (KSA)-east coast India
- China-India, (45,000-55,000t)
- China-Pakistan, (40,000-45,000t)
- China-Brazil (45,000-55,000t)
- Southwest China-Thailand (6,000-8,000t)

Phosphate rock

- Morocco-South Brazil (30,000t)
- Red Sea-west coast/east coast India (25,000-35,000t)
- Red Sea-Indonesia (25,000-35,000t)
- Morocco-US (25,000-35,000t)