

CRU Prices

Carbon Products
Methodology and
Definitions Guide

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CRU Prices	1
<i>Methodology and Definitions Guide – Carbon Products</i>	<i>3</i>
1 Scope	3
2 Methodology	3
3 Definitions	5
Green Petroleum Coke: Monthly	5
No.1 China (\$/t Ex-works)	5
2A 2B China (\$/t Ex-works)	5
3A 3B China (\$/t Ex-works)	5
Calcined Petroleum Coke: Monthly	6
No.1 China (\$/t Ex-works)	6
2A 2B China (\$/t Ex-works)	6
3A 3B China (\$/t Ex-works)	6
China Export (\$/t FOB)	7
Coal Tar: Monthly	7
China (\$/t Ex-works)	7
Coal Tar Pitch: Monthly	7
China (\$/t Ex-works)	7
Anodes: Monthly	7
China (\$/t Ex-works)	7
China Export (\$/t FOB)	8
Calcined Petroleum Coke: Quarterly	8
US Gulf Coast (\$/t FOB)	8
Europe (\$/t CIF)	8
Middle East (\$/t CIF)	8
Coal Tar Pitch: Quarterly	8
China Export (\$/t FOB)	8
North America (\$/t FOB)	9
Europe (\$/t FOB)	9
Europe (€/t FOB)	9
Anodes: Quarterly	9
China Export (\$/t FOB)	9

Methodology and Definitions Guide – Carbon Products

1 Scope

This guide covers carbon product prices in all geographical markets and should be read in conjunction with the *CRU Group Compliance Framework and Methodology Guide*. It details commodity-specific methodology which have precedence, with all other aspects covered by the Group methodology guide.

2 Methodology

Frequency

The final price assessment inclusion date is the fourth Wednesday of each month, at which point all prices are updated in CRU's Carbon Products Monitor. Published price assessments represent all gathered prices pertaining to each current or upcoming pricing window, ensuring contracts fixed at the start of the pricing period are recorded alongside those fixed at the end of this period - price ranges are then established.

For settlement windows containing a mix of quarterly and semester pricing (6-month settlement period), CRU analysts will use discretion when including mixed tenor prices, to better reflect the true market conditions at the time of publication.

Assessment Method

Analysts use telephone and email to collect market intelligence as well as to verify the information received. Price assessments are meant to reflect actual deals concluded, and information is gathered through consultations with producers, buyers, traders and shipping companies. FOB prices are derived either from direct sales from producers to traders/buyers or from netbacks on CIF sales based on estimated or actual freight rates.

Price determination in an illiquid market

In the case that there are no submissions that meet, or after normalisation can meet, the definition below in any monthly or quarterly time period, the prior period's published price range will be rolled over and used as the value for the current period. In the case of low market liquidity but where a single admissible data point has been received, this single data point would be the sole determinant of the value of the price range in the relevant period.

Exclusion of outliers

Expert judgement may be used in the exclusion of a data point as an input to the calculation of a final price. In doing so consideration may be given to the range and distribution of data collected in the same timeframe from other data providers; previous data received from the same data provider; non-price information received from the data provider and the current market state from any other source. Inclusion or exclusion of input data in the final price is recorded.

Any price data that deviates from the previous assessed price range or the collected price data for the trading period will receive extra scrutiny. For example, if a transaction is considered to be a potential outlier, supporting documentation as a means of further authentication may be asked for. Supporting documentation is typically a contract or purchase/sales order, but other documentation may be accepted. Supporting documentation may not be asked for when, in CRU's judgement, the data is otherwise corroborated or deemed valid.

Expert Judgment

Expert judgement may apply to decisions on what type of price data is submitted; if the deal is executed at arms-length; if normalisation of price data submitted is required; the means of any normalisation, and the inclusion of a data point in the calculation of the final price (exclusion of outliers).

An analyst will consult with one or more colleagues before any application of expert judgement if in any doubt, or where collective input would improve the quality of a judgement.

Deactivated assessments

If the quotation suffers from limited transparency or if business dynamics change, it will be deactivated. CRU will provide 3 months' notice before the deactivation date. Its history will still be available to clients, should they require it, but no further information will be collected for that product from the time it is deactivated.

Sizes and Specifications

Transaction sizes may vary by shipment. Timing of spot assessments typically reflect transactions for a product to be supplied within 30 days although this may vary. CRU reserves the right to adjust its historical pricing assessments if compelling new evidence emerges.

3 Definitions

Green Petroleum Coke: Monthly

No.1 China (\$/t Ex-works)

Material:	1A / 1B GPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical 1A/1B grade green petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 0.50
Volatile, %:	≤ 12
Ash, %:	≤ 0.30
Moisture, %:	Actual measured
Real Density, %:	≤ 2.04
Coke powder, %:	35
Silicon, µg/g:	300
Vanadium, µg/g:	150
Iron, µg/g:	250
Calcium, µg/g:	200
Nickel, µg/g:	150
Sodium, µg/g:	100
Nitrogen, %:	Actual measured
Frequency:	Monthly

2A 2B China (\$/t Ex-works)

Material:	2A / 2B GPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical 2A/2B grade green petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 1.00 (A)
Sulphur, %:	≤ 1.50 (B)
Volatile, %:	≤ 12
Ash, %:	≤ 0.40 (A)
Ash, %:	≤ 0.50 (B)
Moisture, %:	Actual measured
Coke powder, %:	Actual measured
Silicon, µg/g:	Actual measured
Vanadium, µg/g:	Actual measured
Iron, µg/g:	Actual measured
Calcium, µg/g:	Actual measured
Sodium, µg/g:	Actual measured
Nitrogen, µg/g:	Actual measured
Frequency:	Monthly

3A 3B China (\$/t Ex-works)

Material:	3A / 3B GPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$

Weight unit:	Metric tonne
Pricing:	Reflects typical 3A/3B grade green petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 2.00 (A)
Sulphur, %:	≤ 3.00 (B)
Volatile, %:	≤ 14
Ash, %:	≤ 0.60
Moisture, %:	Actual measured
Frequency:	Monthly

Calcined Petroleum Coke: Monthly

No.1 China (\$/t Ex-works)

Material:	1A / 1B CPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical 1A/1B grade calcined petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 0.50 (A)
Sulphur, %:	≤ 0.70 (B)
Volatile, %:	≤ 0.50
Ash, %:	≤ 0.50
Real Density, %:	≤ 2.04 (A)
Real Density, %:	≤ 2.05 (B)
Frequency:	Monthly

2A 2B China (\$/t Ex-works)

Material:	2A / 2B CPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical 2A/2B grade calcined petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 1.50 (A)
Sulphur, %:	≤ 3.50 (B)
Volatile, %:	≤ 0.50
Ash, %:	≤ 0.50
Real Density, %:	≤ 2.05
Frequency:	Monthly

3A 3B China (\$/t Ex-works)

Material:	3A / 3B CPC
Price basis:	Ex-works
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical 3A/3B grade calcined petroleum coke
Duties/tariffs:	Where applicable
Sulphur, %:	≤ 3.00 (A)
Sulphur, %:	≤ 4.00 (B)
Volatile, %:	≤ 0.50
Ash, %:	≤ 0.50
Real Density, %:	≤ 2.05

Frequency: Monthly

China Export (\$/t FOB)

Material: CPC
 Price basis: China Export FOB
 Location: China
 Type: Contract & Spot
 Currency: US\$
 Weight unit: Metric tonne
 Pricing: Reflects typical export grade calcined petroleum coke
 Duties/tariffs: Where applicable
 Sulphur, %: ≤ 1.50 (A)
 Sulphur, %: ≤ 3.00 (B)
 Volatile, %: ≤ 0.50
 Ash, %: ≤ 0.50
 Real Density, %: ≤ 2.05
 Frequency: Monthly

Coal Tar: Monthly

China (\$/t Ex-works)

Material: CT
 Price basis: Ex-works
 Location: China
 Type: Spot
 Currency: US\$
 Weight unit: Metric tonne
 Pricing: Reflects typical coal tar
 Duties/tariffs: Where applicable
 Frequency: Monthly

Coal Tar Pitch: Monthly

China (\$/t Ex-works)

Material: CTP
 Price basis: Ex-works
 Location: China
 Type: Spot
 Currency: US\$
 Weight unit: Metric tonne
 Pricing: Reflects typical coal tar pitch
 Duties/tariffs: Where applicable
 Frequency: Monthly

Anodes: Monthly

China (\$/t Ex-works)

Material: Anode
 Price basis: Ex-works
 Location: China
 Type: Spot
 Currency: US\$
 Weight unit: Metric tonne
 Pricing: Reflects typical anode
 Duties/tariffs: Where applicable
 Frequency: Monthly

China Export (\$/t FOB)

Material:	Anode
Price basis:	China Export FOB
Location:	China
Type:	Spot
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical anode
Duties/tariffs:	Where applicable
Frequency:	Monthly

Calcined Petroleum Coke: Quarterly

US Gulf Coast (\$/t FOB)

Material:	CPC
Price basis:	USGC FOB
Location:	US Gulf Coast
Type:	Contract
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical calcined petroleum coke
Duties/tariffs:	Where applicable
Typical Sulphur, %:	2.5 – 3.5
Typical Vanadium, ppm:	300-400

Europe (\$/t CIF)

Material:	CPC
Price basis:	EU CIF
Location:	Rotterdam
Type:	Contract
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical calcined petroleum coke
Duties/tariffs:	Where applicable
Typical Sulphur, %:	1.0-2.0
Typical Vanadium, ppm:	150-300

Middle East (\$/t CIF)

Material:	CPC
Price basis:	M.E. CIF
Location:	Delivered M.E. Smelter
Type:	Contract
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical calcined petroleum coke
Duties/tariffs:	Where applicable

Coal Tar Pitch: Quarterly

China Export (\$/t FOB)

Material:	CTP
Price basis:	Export FOB
Location:	China
Type:	Contract
Currency:	US\$

Weight unit:	Metric tonne
Pricing:	Reflects typical coal tar pitch
Duties/tariffs:	Where applicable
Typical Softening point, °C:	103-120
Typical Insoluble in Quinoline, %:	7-12
Typical Ash, %:	≤0.5
Frequency:	Quarterly

North America (\$/t FOB)

Material:	CTP
Price basis:	Ex-works
Location:	Supplier Facility
Type:	Semester
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical coal tar pitch
Duties/tariffs:	Where applicable
Typical Softening point, °C:	108-113
Typical Insoluble in Quinoline, %:	8-16
Typical Ash, %:	≤0.5

Europe (\$/t FOB)

Material:	CTP
Price basis:	EU FOB
Location:	Europe
Type:	Semester
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical coal tar pitch
Duties/tariffs:	Where applicable
Typical Softening point, °C:	103-120
Typical Insoluble in Quinoline, %:	4-7
Typical Ash, %:	≤0.5

Europe (€/t FOB)

Material:	CTP
Price basis:	EU FOB
Location:	Europe
Type:	Semester
Currency:	Euro conversion from US\$

Anodes: Quarterly

China Export (\$/t FOB)

Material:	Anode
Price basis:	Export FOB
Location:	China
Type:	Contract
Currency:	US\$
Weight unit:	Metric tonne
Pricing:	Reflects typical anode
Duties/tariffs:	Where applicable
Frequency:	Quarterly

Glossary of abbreviations

INCO TERM RULES FOR ANY MODE OR MODES OF TRANSPORT:

- EXW – Ex-Works
- FCA – Free Carrier
- CPT – Carriage Paid To
- CIP – Carriage and Insurance Paid To
- DAT – Delivered at Terminal
- DAP – Delivered at Place
- DDP – Delivered Duty Paid

INCO TERM RULES FOR SEA AND INLAND WATERWAY TRANSPORT:

- FAS – Free Alongside Ship
- FOB – Free on Board
- CFR – Cost and Freight
- CIF – Cost Insurance and Freight

COUNTRY ABBREVIATIONS USED:

We use ISO 3166 alpha-2 standard country codes