

CRU Prices

Lead and Zinc Concentrates

Methodology and Definitions Guide

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Methodology and Definitions Guide – Lead and Zinc

1 Scope

This guide covers lead and zinc concentrates 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

Lead and Zinc Concentrates

The CRU lead and zinc concentrate prices are a monthly assessment of prices representing physical spot transactions and/or prices widely quoted in the spot market.

Data are gathered from Data Providers by email (a submission template may be used), telephone, private one-to-one instant messenger services or other private means of communication.

Our methodology blends strict adherence to transaction data and other methodological rules with limited but necessary application of expert judgement, detailed below, in order to produce a price that benefits from rigour, and analyst expertise and discretion in equal measure.

Data providers

CRU lead and zinc concentrates assessments are based on regular contact with a wide network of market participants including producers, stockholders/traders and consumers. This network is frequently reviewed to ensure a balance of buyers and sellers. A Non-Disclosure Agreement may be supplied as required.

Above and beyond the criteria stipulated in Section 3.4 of the CRU Group Compliance Framework and Methodology Guide, each data provider must exist on a list of approved data providers before their data can be considered for admission into published prices.

Data submitted and submission process

Transaction data is prioritised as an input and to that extent the hierarchy of acceptable price types follows that described in Section 3.1 of the Group Compliance Framework and Methodology Guide.

In the absence of actual transaction data, the following types of price data may be submitted in the same period: a firm/indicative offer or bid; opinion of the prevailing market price.

Data Providers must supply spot price data relating to spot business in the prior month by 23:59 GMT on the Wednesday prior to the publication of the Zinc Monitor each month for their data to be considered.

Data Providers should provide accurate spot price data to CRU detailing date, type of price data and quantity, normalised for delivery basis, pricing period and payment terms to CRU's lead and zinc concentrates definitions below.

Final Price Assessment

Normalisation

The final price is assessed based on all data received by all permissible means. Data which meet the precise definitions below are eligible for admission without any transformation. Data which do not will be subject to a normalisation process in order to adjust for delivery basis etc.

Exclusion of outliers

An analyst may use expert judgement in the exclusion of a data point as an input to the calculation of the final price. In doing so they would consider: 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; market state and direction information from any other source. Inclusion or exclusion of input data in the final price is explicit and recorded.

Price data will be weighted as follows:

Transaction data (sales or purchase): the midpoint of the average of sales and the average of purchase data to be given a 50% weighting.

Firm and indicative bid/offer data: the midpoint of the average of bids and the average of offers to be given a 25% weighting. Opinion to be given a 25% weighting.

If CRU receives only one of the above price data types, that will be given a 100% weight.

If CRU receives two of the above price data types, a weighting of 75% will be given to transaction prices and 25% to the other; if no transaction prices are received, bid/offer prices will receive a 75% weighting and 25% to opinion.

If there are no qualifying data points, the prior published value will be rolled over to form the current period published value.

Expert judgement

Expert judgement may apply to decisions on whether price data submitted relate to actual deals concluded, if normalisation of price data submitted is required and the means of any normalisation, and the inclusion of a data point in calculation of the final price.

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.

Consistency in the application of expert judgement is achieved through a combination of selection, formal and informal training and review, supervision and control processes as detailed in section 2.5 of *the Group Compliance Framework and Methodology Guide*.

Verification

Input data points, calculations and the final price for publication are checked and verified by a second analyst at each critical stage (i.e. where there is scope for error) in the process from data collection to final publication, and this verification is documented including the identity of the verifier.

Final publication

CRU lead and zinc concentrates prices are published monthly in the *CRU Lead and Zinc Concentrates Monitor*, associated *Lead and Zinc Concentrates Prices Basket*, via FTP data feeds and available in DataLab.

Deactivated prices and changes

A price assessment will remain active as long as there are sufficient buyers, sellers and/or traders for the analyst to make an accurate assessment. If the quotation suffers from limited transparency or if business dynamics change, it may be deactivated following market consultation. Its history will still be available, but no further information will be collected for that assessment from the time it is deactivated.

If you have comments or questions about the methodology used by CRU to assess prices, or questions about particular prices, please email tom.rutland@crugroup.com or customer.services@crugroup.com.

To find out more about CRU's pricing products and services go to www.crugroup.com.

3 Definitions – Lead and Zinc Concentrates

Ex. China spot zinc

DataLab Name:

Material:	Zinc, Concentrates, TC, Spot price; China, CIF Zinc concentrates of ex-China origin grading 50-55% zinc with no payable by-products or penalty elements
Price basis:	CIF main Chinese port
Type:	Spot
Currency:	US dollar
Weight unit:	Dry metric tonne
Size:	Minimum 5,000 dmt
Delivery:	Prompt to 1 month
Pricing variable:	Treatment charge (TC) per dmt of concentrate (TC is net of price participation where appropriate)
Payment terms:	Buyer pays seller for a portion of the contained zinc less the TC; portion is full content less the greater of 15% of content or 8 percentage points from zinc assay; its value is based on the LME cash price; seller receives prompt payment
Frequency:	Monthly

Ex. China spot lead

DataLab Name:

Material:	Lead, Concentrates, TC, Spot price; China, CIF Lead concentrates of ex-China origin grading 55-65% lead and no more than 400 g/t silver with no other payable by-products or penalty elements
Price basis:	CIF main Chinese port
Type:	Spot
Currency:	US dollar
Weight unit:	Dry metric tonne
Size:	Minimum 5,000 dmt
Delivery:	Prompt to 1 month
Pricing variable:	Treatment charge (TC) per dmt of concentrate (TC is net of price participation where appropriate)
Payment terms:	Buyer pays seller for a portion of the contained lead less the TC; portion is full content less the greater of 5% of content or 3 percentage points from lead assay; its value is based on the average of LME cash and LME 3-month prices; seller receives prompt payment
Frequency:	Monthly

China spot zinc

DataLab Name:

Material:	Zinc, Concentrates, TC, Spot price; China, delivered Zinc concentrates of Chinese origin grading 50% zinc with no payable by-products or penalty elements
Price basis:	Delivered to smelter's gate
Type:	Spot
Currency:	Renminbi
Weight unit:	Metric tonne
Size:	Minimum 1,000 dmt
Delivery:	Prompt to 1 month
Pricing variable:	Treatment charge (TC) per tonne of zinc contained in concentrate
Payment terms:	Buyer pays seller for the total value of the contained zinc less the TC; value is based on prices published by Shanghai Metal Markets; seller receives prompt payment
Frequency:	Monthly

China spot lead

DataLab Name:

Material:	Lead, Concentrates, TC, Spot price; China, delivered Lead concentrates of Chinese origin grading 50-55% lead and no more than 400 g/t silver with no other payable by-products or penalty elements
Price basis:	Delivered to smelter's gate
Type:	Spot
Currency:	Renminbi

Weight unit:	Metric tonne
Size:	Minimum 1,000 dmt
Delivery:	Prompt to 1 month
Pricing variable:	Treatment charge (TC) per tonne of lead contained in concentrate
Payment terms:	Buyer pays seller for the total value of the contained lead less the TC; value is based on prices published by Shanghai Metal Markets; seller receives prompt payment
Frequency:	Monthly