

Polyethylene Terephthalate (PET) Methodology

Polyethylene terephthalate (PET) exists both as an amorphous (transparent) and a semi-crystalline (opaque and white) thermoplastic, and can be made into either a resin or a film. The semi-crystalline PET has good strength, ductility, stiffness and hardness while the amorphous PET has better ductility. PET also has good processability and can be recycled for other applications such as polyester fibres.

PET first penetrated the carbonated soft drinks (CSD) market because of its lightweight and good barrier properties against oxygen and carbon dioxide. It is also strong and PET bottles are virtually unbreakable. More recently, it has been taking market share in the bottled water market due to its good clarity and not leaving any taste in the water. It has also found applications in more niche markets such as sports drinks and fruit juices. However, PET has yet to make any noticeable impact in the bottled beer market but a pre-coloured PET has been developed that meets the light barrier requirements for beer packaging.

Other applications for PET include thick-walled containers for cosmetic and personal care products as well as pharmaceuticals. PET film is utilised in electrical applications such as dielectric metal foil capacitors and for packaging.

In Asia, the market is 100% oversupplied and very fragmented, with several producers scattered in Taiwan, South Korea, China, India and southeast Asia.

Health and Safety

PET is not considered to be hazardous or flammable. In a spill situation, PET may be visually unpleasant but is not expected to cause any adverse environmental effects.

ICIS pricing quotes PET in **Europe, Asia-Pacific, the USA, Latin America, Middle East and CIS.**

Frequency:

PET (Latin America) published weekly on Tuesdays.

PET and Intermediates (USA) and PET (Middle East) published weekly on Thursdays.

PET (Europe), PET (CIS) and PET (Asia-Pacific) published weekly on Fridays.

Polyethylene Terephthalate (EUROPE)

Weekly Price Assessments:

**PET Bottle Grade Monthly Reference Contract Prices*

- FD W.Europe REF (EUR/MT & conversion to USD/MT)
- FD E.Europe REF (EUR/MT & conversion to USD/MT)

**PET Film Grade Monthly Reference Contract Prices*

- FD W.Europe (EUR/MT & conversion to USD/MT)

*This is a round-up of what has happened during the current month, up to and including the last Friday of the month.

PET Bottle Grade Domestic Prices

- *FD Europe (EUR/MT & conversion to USD/MT)

*Encompasses spot and domestic prices and can change weekly.

PET Bottle Grade Spot Prices

- EXW Russia Rb/MT (conversion to EUR/MT)

PET Feedstock Prices

- Terephthalic Acid FD NWE Monthly Contract (EUR/MT & conversion to USD/MT)
- Mono Ethylene Glycol FD NWE Monthly (EUR/MT)

Polyethylene Terephthalate (ASIA-PACIFIC)

Weekly Price Assessments:

PET Fibre Grade Spot Prices

- CFR N.E.ASIA (USD/MT & conversion to US CTS/LB)
- CFR INDIA (USD/MT & conversion to US CTS/LB)
- FOB N.E.ASIA (USD/MT & conversion to US CTS/LB)

PET Bottle Grade Spot Prices

- FOB KOREA (USD/MT & conversion to US CTS/LB)
- FOB TAIWAN (USD/MT & conversion to US CTS/LB)
- FOB CHINA (USD/MT & conversion to US CTS/LB)
- FOB S.E.ASIA (USD/MT & conversion to US CTS/LB)
- FOB INDIA (USD/MT & conversion to US CTS/LB)

PET Film Grade Spot Prices (with effect from February 2006)

- FOB EAST ASIA (USD/MT & conversion to US CTS/LB)

PET Feedstock Prices

- PTA CFR CHINA MAIN PORT SPOT (USD/MT)
- MEG LIST PRICE:CFR ASIA monthly (USD/MT)
- MEG FOB N.E.ASIA SPOT (USD/MT)

PET and Intermediates (USA)

Weekly Price Assessments:

Terephthalic Acid Contract Prices

- DEL monthly (US CTS/LB & conversion to USD/MT)

PET Bottle Grade Domestic Contract Prices

- SBM DEL (US CTS/LB & conversion to USD/MT)

Polyethylene Terephthalate (LATIN AMERICA)

Weekly Price Assessments:

PET Bottle Grade Domestic Spot Prices

- ARGENTINA (DEL) (US CTS/LB & conversion to USD/MT)
- BRAZIL (DEL) (US CTS/LB & conversion to USD/MT)
- COLOMBIA (DEL) (US CTS/LB & conversion to USD/MT)
- MEXICO (DEL) (US CTS/LB & conversion to USD/MT)

PET Bottle Grade International Spot Prices

- CHILE (CFR) (US CTS/LB & conversion to USD/MT)
- COLOMBIA (CFR) (US CTS/LB & conversion to USD/MT)
- MEXICO (FOB) (US CTS/LB & conversion to USD/MT)
- VENEZUELA (CFR) (US CTS/LB & conversion to USD/MT)

Polyethylene Terephthalate (MIDDLE EAST)

Weekly Price Assessments:

PET Bottle Grade Spot Prices

- CFR GCC (US CTS/LB & conversion to USD/MT)
- FOB GCC (US CTS/LB & conversion to USD/MT)

Polyethylene Terephthalate (CIS)

Weekly Price Assessments:

PET Bottle Grade, Domestic Prices:

- *Russia, CPT Moscow Spot Prices (USD/TONNE)*
- *Ukraine, CPT Kiev Spot Prices (USD/TONNE)*
- *Belarus, CPT Minsk, Spot Prices (USD/TONNE)*
- *Kazakhstan, CPT Alma-Aty, Spot Prices (USD/TONNE)*
- *Uzbekistan, CPT Tashkent, Spot Prices (USD/TONNE)*

Russia, PET Bottle Grade, Domestic Market, by producers:

- *Sibur-PET, CPT Moscow Spot Prices (Rb/TONNE)*
- *Seneg, CPT Moscow Spot Prices (Rb/TONNE)*
- *Polief, CPT Moscow Spot Prices (Rb/TONNE)*
- *Alco-Naphta, CPT Moscow Spot Prices (Rb/TONNE)*
- *Ex Belarusian, CPT Moscow Spot Prices (Rb/TONNE)*
- *Ex Asian, CPT Moscow Spot Prices (Rb/TONNE)*
- *Ex European, CPT Moscow Spot Prices (Rb/TONNE)*

Ukraine, PET Bottle Grade, Domestic Market, by origin:

- *Ex Asian, CPT Kiev Spot Prices (UAH/TONNE)*
- *Ex Middle Eastern, CPT Kiev (UAH/TONNE)*
- *Ex Belarusian, CPT Kiev Spot Prices (UAH/TONNE)*

Belarus, PET Bottle Grade, Domestic Market, by producers:

- *Mogilevkhimvolokno, CPT Minsk Spot Prices (000 BRb/TONNE)*

Kazakhstan, PET Bottle Grade, Domestic Market, by producers:

- *Ex Asian, CPT Alma-Aty, Spot Prices (Tenge/TONNE)*

Uzbekistan, PET Bottle Grade, Domestic Market, by producers:

- *Ex Asian, CPT Alma-Aty, Spot Prices (000 Som/TONNE)*

Import offers

Russia:

- *Ex Belarusian (USD/TONNE)*
- *Ex Asian (USD/TONNE)*
- *Ex European (EUR/TONNE)*

Ukraine:

- *Ex Belarusian (USD/TONNE)*
- *Ex Asian (USD/TONNE)*
- *Ex European (EUR/TONNE)*
- *Ex Middle Eastern (USD/TONNE)*

Kazakhstan:

- *Ex Asian (USD/TONNE)*

Uzbekistan:

- *Ex Asian (USD/TONNE)*

General Information:

Assessment window: Price assessments are based on information supplied by market participants through the week up to close of business on Tuesdays at 1800 hours in Houston for the Latin America report; on Thursdays at 1400 hours in Dubai, or 1800 hours in Singapore for the Middle East report; on Thursdays at 1800 hours in Houston for the PET and Intermediates (USA) report; on Fridays at 1800 hours in Singapore for the Asia-Pacific report; and on Fridays at 1700 hours in London for the Europe report.

Specification: Unless otherwise stated, ICIS pricing quotes prices for PET fibre-grade chips at 0.62-0.65 IV in the Asia-Pacific report; PET film granules at 0.78-0.84 IV in the Europe report and 0.62-0.65 IV in the Asia-Pacific report; and bottle-grade PET chips at 0.78-0.84 IV in the Europe and Latin America reports and 0.76-0.84 IV in the Asia-Pacific report, for single- and multi-layer barriers in carbonated soft drink (CSD), water and general bottle applications.

Timing: Cargoes loading or delivered four-six weeks forward from the date of publication.

Terms: 30-60 days after bill of lading date.

Standard cargo size: Small-sized parcels of 500-1,000 tonnes and medium-to-large-sized parcels of 1,000-2,000 tonnes. Published contract prices in the US reflect the rates paid by small-to-medium sized buyers requiring 1,000-3,000 tonnes/month (approx. 26m-79m lbs/yr).

Assessment basis: The published ranges represent a combination of the following price indications: the deals concluded, bids and offers, buy and sell indications and notional discussions heard by the close of business on Friday, or Tuesdays for the Latin America report, or Thursdays for Middle East and US reports.

Factors affecting price movements, including the supply and demand situation, plant operating rates, feedstock and derivative markets, cargo movements, and general sentiment, etc will also be taken into account. Where applicable there is product information, comments on up and downstream market developments and general market intelligence.

The US report includes prices of purified terephthalic acid (PTA). ICIS uses a mathematically derived indicator representing 0.67 of the movement in the upstream monthly DEL USG paraxylene (PX) contract to calculate the monthly PTA price movement. At the end of the commentary, the latest feedstock prices are also listed.

The Latin American report has commentary on bottle-grade PET only and may discuss the latest prices of feedstocks in North America. Taxes are not included in Latin American PET price assessments.

The Asian report is divided into three parts: on fibre-grade PET chips, bottle-grade PET chips and film-grade PET chips.

In Europe, the ICIS FD W Europe REF (reference) and FD E Europe REF (reference) price assessments are moved monthly based on confirmed market information. This is a round-up of what has happened with domestic prices during the current month, up to and including the last Friday of the month. The domestic FD Europe prices encompass spot business and regular business settled on an individual basis between European suppliers and their customers. The European report includes a formal Russian rouble denominated spot price assessment. These figures are quoted on an ex-works basis and include 18% VAT.



The Middle East report includes pricing information in the GCC. The GCC region includes Kuwait, Bahrain, Oman, Qatar, Saudi Arabia and the U.A.E. Pricing information focuses primarily on exports out of these regions as well as imported material into each of these regions. Details of domestic trading activity and prices are also included in the report's market commentary.

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