LME Zinc first started trading on the London Metal Exchange (LME) in 1920, with the current specification introduced in 1986. It is one of the most liquid markets on the LME and many analysts refer to its direct relationship with global economy because of its role in galvanising steel to protect it from weather and corrosion, making it essential for the construction industry.

As a metal, zinc was first officially recognised by German chemist Andreas Sigismund Marggraf in 1746. Blueish-silver in its appearance, it is generally hard and brittle but becomes ductile between 100 and 150 °C (212-302 °F). At higher temperatures the metal reverts back to its brittle state and can then be crushed by beating. Whilst fragile in its pure state, alloyed zinc can have higher impact strength than other die casting alloys.

The zinc industry has two main types of end user: first users and end users. First users include galvanisers, die-casters, brass-makers and relatively smaller applications like chemicals manufacturing. Galvanising involves coating other metals such as steel or iron in molten zinc to form a protective layer to prevent corrosion. Zinc-coated steel can also tolerate higher loads and is fire resistant. Die-casters manufacture strong, complex and intricately shaped metal components such as key rings, screws, seatbelt buckles and so on. Combining copper and zinc creates brass, an alloy which is used for radiator tubes and tanks, musical instruments, clock mechanisms, pipe/water fittings and nuts and bolts. The proportions of zinc and copper can range from 65:35 to 50:50 (copper:zinc) to create different types of brass alloys with varying mechanical and electrical properties.

End users of zinc take the output of the first users as an input of their manufacturing processes for example in the construction, automotive, hardware/furniture, electronic, medical, toy and clothing industries.

Zinc can be repeatedly recycled without any detriment to its chemical and physical properties. According to the International Zinc Association, approximately 70% of the zinc produced worldwide originates from mined ores and the other 30% from recycled or secondary zinc.

### Zinc’s main end uses are:
- construction
- manufacturing
- fertilisation
- chemical
- supplements.

### Zinc mine production and usage by continent 2016

<table>
<thead>
<tr>
<th>Continent</th>
<th>Zinc metal production</th>
<th>Zinc metal usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>66%</td>
<td>17%</td>
</tr>
<tr>
<td>Africa</td>
<td>13%</td>
<td>17%</td>
</tr>
<tr>
<td>America</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Asia</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Oceania</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: International Lead and Zinc Study Group (ILZSG)

### Zinc production process

1. **Zinc mining**
   - Zinc needs to be concentrated as it only contains 5-15% zinc when first mined. This is done by crushing.

2. **Zinc concentrate**
   - Zinc concentrate contains roughly 55% zinc. About 25-30% is sulphur, which needs to be removed either by roasting or sintering. The concentrate is heated to 900°C and turns into zinc oxide when combined with oxygen.

3. **Zinc sulphate**
   - Zinc oxide is then dissolved in sulphuric acid to separate it from other minerals such as iron, lead and silver to produce impure zinc sulphate. The solution is then purified and zinc metal is extracted via electrolysis.

4. **High grade zinc**
   - The zinc metal is then removed from the aluminium cathodes (used in the electrolysis process), melted in a furnace and cast into zinc ingots.

5. **Recycling**
   - Secondary zinc is mostly recovered in the form of off-cuts from die-casting and dross from the hot baths used in galvanising. The amount of zinc on steel products is often too small to be recovered and recycled.
Trading zinc on the LME

All of our non-ferrous metals contracts have close ties with the physical market. The prices discovered on the LME are used the world over in physical contracts, and because they can be physically settled – using the LME warehouse network – LME prices are truly reflective of global supply and demand.

The interaction on the LME between the physical and financial communities provides highly liquid and deep order books with tight spreads.

The LME’s unique prompt date structure allows you to trade daily out to three months, weekly out to six months and monthly out to ten years.

LME Zinc facts

- Lot size: 25 metric tonnes
- Tick value: $12.50
- Cost-per-tick ratio: 0.216
- Contract types: futures, options, TAPOs, monthly average futures, LMEminis and HKEX London Minis traded on HKEX derivatives platform.

Useful reports

LME Zinc trading volumes, price and stocks data can be found on our website: lme.com/reports

Get real time and historical LME trading data from any of our licensed distributors by visiting: lme.com/licenseddistributor

Get zinc-specific data: lme.com/zinc

LME trading venues and prices

Telephone – The Exchange supports an inter-office market between LME members which operates 24 hours a day. All telephone trades are matched and cleared through our matching platform, LMEsmart, and clearing house, LME Clear.

Electronic – LMEselect is our electronic trading platform, which integrates with member trading platforms via a FIX API, either from member sites or via data centres to facilitate the lowest latency trading strategies. LMEselect is open for trading between 01:00 and 19:00 (London time). LMEselect is only available to LME members but clients of LME members can access it via member systems or member-sponsored Independent Software Vendor (ISV) platforms (see below for more details).

The Ring – The Ring, our open-outcry trading floor, is central to the process of price discovery. Each LME metal is traded in highly liquid five-minute Ring sessions, which are themselves representative of global supply and demand. Zinc is traded on the Ring at these times: 12:10-12:15, 12:50-12:55, 15:05-15:10, 15:45-15:50 and ceases trading at 16:25 (London time).

Prices – The LME Official Price for zinc, discovered on the Ring between 12:50-12:55, is used as the global reference. Contracts for material in a pre-fabricated state will be priced at a ‘discount’ to the LME price and material further along the value chain, like rolled zinc sheets, at a ‘premium’. The LME Zinc Closing Price, discovered at 16:25, is used for margining and valuation purposes.

ISVs

Members and their clients may choose to access LMEselect via member-sponsored ISV platforms. Client traffic passes through an ISV pre-trade risk engine endorsed and fully controlled by the sponsoring member’s compliance team. The following ISVs have passed LME conformance tests for order routing applications connecting via the LMEselect API for LME Zinc:
LME Zinc trading data

Average daily volume
Daily volume for LME Zinc averages over 100,000 lots per day. LMEselect accounts for about 40% of all market traded volume.

3 Month price and intraday volatility
The 3 Month (3M) price represents the price agreed to settle or deliver material three months from the time that the price is agreed and concentrates liquidity on one day.

Volatility is an important parameter for some participants as it can often determine the level of involvement in a financial instrument.

3rd Wednesday price
3rd Wednesday (3W) contracts are monthly futures that exist within the current prompt date structure for all major LME contracts expiring on the 3rd Wednesday of each month.
**3M to 3rd Wednesday spread**
This is the spread between the 3M rolling forward contract and a monthly futures contract or an adjustment of a position from the daily expiry (three months forward) into monthly expiry.

**Calendar spread**
3rd Wednesday to 3rd Wednesday spreads are calendar spreads used for rolling a position from one month to another.

**LME Zinc arbitrages**
Regional prices for zinc are impacted by different factors including economic, physical and logistical influences. Traders can arbitrage the differences in zinc price on the Shanghai Futures Exchange (SHFE) and the Multi Commodity Exchange of India (MCX).
<table>
<thead>
<tr>
<th>Contract specification</th>
<th>LME Zinc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract names and codes</td>
<td>LME Zinc (ZS)</td>
</tr>
<tr>
<td>Underlying material</td>
<td>Special high-grade zinc of 99.995% purity minimum</td>
</tr>
<tr>
<td>Contract type</td>
<td>Futures</td>
</tr>
<tr>
<td>Delivery type</td>
<td>Physically settled</td>
</tr>
<tr>
<td>Lot size</td>
<td>25 metric tonnes</td>
</tr>
</tbody>
</table>
| Contract period | Daily: out to 3 months  
Weekly: 3 out to 6 months  
Monthly: 7 out to 123 months |
| Price quotation | US dollars per metric tonne |
| Clearable currencies | US dollars, Japanese yen, sterling, euro |
| Minimum price fluctuation (tick size) per metric tonne | Venue  
Ring: $0.50  
LMEselect: $0.50  
Inter-office: $0.01 |
| Termination of trading | Up until the close of the first Ring the day before the prompt date |
| Trading venues | Ring, LMEselect and Inter-office telephone |
| Trading hours | Ring: 11:40 - 17:00 London time  
LMEselect: 01:00 - 19:00 London time  
Inter-office: 24 hours a day |
| Margining | Contingent variation margin applied |

For more information about LME Zinc please visit our website at lme.com/zinc or get in touch with the team: sales@lme.com