HZL - Product Factsheet

Special High Grade (SHG) Zinc – 99.995%

Chemical Composition

<table>
<thead>
<tr>
<th>Component</th>
<th>Guaranteed Content</th>
<th>HZL Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc (Zn)</td>
<td>99.9950% Min</td>
<td>99.9960% Min</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>0.0030% Max</td>
<td>0.0020% Max</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>0.0010% Max</td>
<td>0.0003% Max</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>0.0030% Max</td>
<td>0.0002% Max</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>0.0020% Max</td>
<td>0.0010% Max</td>
</tr>
<tr>
<td>Aluminium (Al)</td>
<td>0.0010% Max</td>
<td>0.0001% Max</td>
</tr>
<tr>
<td>Tin (Sn)</td>
<td>0.0010% Max</td>
<td>0.0001% Max</td>
</tr>
</tbody>
</table>

Hindustan Zinc Special High Grade Zinc 99.995% conforms the following standards:

ASTM B6-SHG Z13001 Grade
BS EN 1179:2003 – ZI Grade
ISO 752:2004 – ZN – Grade

Hindustan Zinc's – LME Registered Brands:

“HZL SHG 99.995%”
“HZL Zn SHG 99.995%”
“VEDANTA SHG 99.995%”
“VEDANTA Zn SHG 99.995%”

SHG Slab Dimensions and View

Physical Specifications: All Dimensions in mm
Special High Grade (SHG) Zinc – 99.995%

Bundle Dimensions & View

Physical Specifications: All Dimensions in mm

Special high grade Zinc 99.995% (Bundle Specification)

- **Ingot Weight**: 25 Kg each (+/- 2Kg)
- **Bundle Weight**: 1000 kg each (+/-50Kg)
- **Bundle Configuration**: 4 ingots/layer x 10 layers
- **Bundle Dimensions**: 960 (+/- 10) mm Length, 470 (+/- 10) mm Width, 475 (+/- 10) mm Height
Special High Grade (SHG) Zinc – 99.995%

SHG Jumbo - Weight (1000 Kg +/-50)

Physical Specifications: All Dimensions in mm

HINDUSTAN ZINC

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Ph: +91 22 66434500 | E-mail: customerservicehzl@vedanta.co.in
Website: www.hzlindia.com
Advantage of Jumbo over Slab

The use of zinc jumbo (supplied as 1.0 metric tonne) instead of conventional 25kg small ingots provides galvanizers with a number of benefits. These are:

1. **Convenience**
   Use of zinc jumbos simplifies storage, handling and loading of the zinc into the galvanizing bath. As shown in Figure 1, jumbos are lowered easily and conventionally into the zinc bath using a chain sling attached to the crane hoist. By comparison, using small ingots can have the following disadvantages.
   - Time and labour is required for removal of steel strapping.
   - If unstrapped bundles are to be loaded into the bath, care needs to be taken to ensure bundle stability.
   - If small ingots are to be added piece by piece, the process is very consuming and labour intensive.

2. **Security**
   Zinc is valuable commodity. Ensuring secure storage at the galvanizing plant is therefore very important. Due to their large scale, zinc jumbos are much less vulnerable to theft compared to small ingots. In fact, there has never been any reports of the theft of zinc jumbos.

3. **Safety**
   There is much less risk of operator injury using zinc jumbos, since loading into the bath primarily utilizes only the crane and operators can therefore remain at a safe distance. Also, meeting of zinc jumbos generally involves less ‘turbulence’ and therefore there is less risk of molten zinc splashing.

4. **Better bath management**
   During the time the jumbo is submerged in the bath, it remains fully supported by the crane. The situation with adding complete bundles of small ingots is different in that some ingots will separate during melting and fall to the bottom of the zinc bath. This is generally undesirable since it can result in some disturbance of the dross layer, causing dross to mix into the zinc bath and subsequently contaminate the galvanizing coating. This is a concern also when adding small ingot piece since these immediately sink to the bottom of the bath.

5. **Cost Savings**
   Zinc melting loss is lower if jumbos are used in preference to small ingots. This is due to lesser ash being generated on the galvanizing bath surface during melting of jumbos as a result of less ‘turbulence’ caused by splashing/bubbling. Turbulence created in the galvanizing bath when adding zinc is caused by its surface condition (such as the presence of minor oxidation, white rust, moisture condensation). This turbulence causes ash to form on the bath surface. The similar surface area to weight ratio of zinc jumbos compared to small ingot means less turbulence and therefore less ash is produced. Tests have shown that the use of jumbos instead of 25 kg ingots results in 15 kgs less ash per ton of zinc added to bath. Even after allowing for the subsequent sale of zinc ash, the cost savings are estimated to be approximately $20/ton of zinc added.