Real-time molten metal chemistry monitoring
Autonomous online pot chemistry and pot level measurement for the galvanizing industry

The Galvalibs is an online sensor that provides multi-element chemistry monitoring for the galvanising industry. It provides, in real-time, a direct measurement of the soluble fraction of elements present in the pot, such as dissolved Al, Fe, Mg, Mn and Si. The Galvalibs also measures the pot level and the dross concentration. Case studies have shown that the pot level measurement is the most precise in the industry.

The **Galvalibs** is designed for ease of use and very low operating costs.

- Easy-to-remove lance for routine inspections
- User-friendly pot attachment for all needs
- Intelligent argon feeding system

Get the **Galvalibs** advantage:

**Technical specifications**

**Chemistry**

| Soluble aluminum | 0.005 wt.% to 10.0 wt.% |
| Soluble magnesium | 0.005 wt.% to 6.0 wt.% |
| Soluble iron | 0.008 wt.% to 2.0 wt.% |
| Soluble silicon | 0.002 wt.% to 12.0 wt.%* |
| Fe dross | 0.002 wt.% to 0.1 wt.%** |

**Chemistry precision**

- Relative standard deviation: 0.5%
- Relative 30-day drift: 1%

**Pot level measurement precision**

- Standard deviation: ±0.5 mm

**Consumables**

- Grade 4.8 argon or better (0.75 to 1.0 lpm)
- Industrial grade compressed air (10 cfm)

* Silicon above 3 wt.% applies to aluminizing only.
** Dross measurements are calibrated using excess Fe in manual sampling.
The Galvalibs double advantage

The Galvalibs helps operators to accurately decide which ingot to add to the pot next. It is built to be operation-friendly and very light on consumables. Using this technology, you can expect improved precision, better quality, lower operating costs and better dross control.

By design, the Galvalibs analyzes a microscopic volume of the pot content each time the laser is fired at the liquid metal through a partially submerged ceramic tube. Shots that hit solid elements (dross) produce signals easily differentiated from those hitting the liquid matrix, thus yielding temperature-independent dross and dissolved content measurements without any need for model-based calculations or external lab analysis.

The precise, mass-controlled flow of argon gas through the ceramic tube provides a very accurate pot level reading from simple pressure monitoring. Case studies have proven that the standard deviation of the Galvalibs pot level measurement is as low as 0.2 mm. What’s more, the reading is not affected by dross build-up at the surface or skimming activities.

Dimensions and weight

**Probe**
- 508 mm X 127 mm X 203 mm
- 20 in. X 5 in X 8 in.
- 18 kg /40 lb.

**Controller**
- 812 mm X 355 mm X 1143 mm
- 32 in. X 14 in. X 45 in.
- 113 kg /250 lb.

**Cable conduit**
- 13.5 m /45 ft. (length)
- 75 kg /165 lb.
We began a relationship with Tecnar during the early stages of the Galvalibs development to fill a need for real-time zinc pot chemistry feedback. Over the years, we have worked closely with Tecnar to upgrade to the latest version of the Galvalibs. Tecnar customer service has been a high priority throughout the entire process and they have made several site visits to ensure proper setup, operation and maintenance of the system. Since the initial commissioning was successful and the Galvalibs proved reliable, we purchased a second system. Tecnar continues to hold customer service as a high priority to ensure we have reliable systems.

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