

Case Study



Automatic CO₂ measurement finds its spot in the wine industry Distell standardizes on ICC!

Introduction

Distell Group Limited, established in 2000, is South Africa's leading producer and marketer of fine wines, spirits, ciders and ready-to-drinks (RTDs). The group is listed on JSE Limited. Distell employs more than 4,200 people and has an annual turnover in excess of R7.9 billion.



There key strengths are local market leadership, high brand awareness levels, an extensive distribution network, local market knowledge, strong trade relationships and the structural capacity to rapidly introduce new products across categories and channels. They are creating an international footprint in key markets in North and Latin America, Europe, Asia Pacific and Africa.



Distell strives towards the highest standards of environmental responsibility, seeking to promote environmentally sustainable production in all areas of its activities. The company strives to comply with all relevant legislation, reduce the impact of the production processes on the environment, and prevent pollution by using best practices and technologies.

The environmental priorities under the microscope by Distell are:

- Water
- Effluent
- Energy
- Air emissions
- Solid waste

Carbon Dioxide Measurement

In the wine industry, the content of dissolved carbon dioxide (CO₂) is a determining factor for the quality and taste of wine. Because of this, wineries continuously control and measure the CO₂ quantity in the finished product.

Dr. Pierre van Rensburg, Head of Oenology Research, was tasked with finding an alternative method to measuring CO₂ in the Stellenbosch plant. Traditionally CO₂ was calculated by measuring the pressure and temperature at-line and then using these values to read the CO₂ value from a table. They struggled to convert the readings into a grams per liter value. In addition that, doing it manually always leaves room for human error. Since Distell is focused on lowering its carbon footprint, they needed to ensure that its CO₂ production and usage was controlled and monitored in the most efficient and reliable manner.



CO₂ in Wine

Case Study



ICC-04 - principal of operation

The user-friendly and battery powered Inpack 2000 CO₂ Calculator, type ICC-04, allows for a fast and reproducible determination of the CO₂ content based on Henry's Law. Shaking the container manually before or after the sample is pierced, followed by pressure and temperature measurement, creates the equilibrium. Subsequently, the dissolved CO₂ content is electronically calculated and displayed.

Trial

With the instrument installed and commissioned, Dr. van Rensburg was able to start the trial. Using bottled samples straight from the line he ran comparison checks with the old method versus the ICC. The trial ran for approximately one month. With all the results consolidated, he was able to see the improvement and the reproducibility obtained when utilizing the ICC. The results were so significant that he was able to make adjustments to the carbonator, which has always been an area of Distell's concern.

Conclusion

With great support and clear dedication of our business partner in the South Africa, Dr. Pierre van Rensburg, decided to validate the ICC at Distell.

Due to the automatic calculation of CO₂ with the ICC-04, Dr. Pierre van Rensburg found the solution to lower the carbon footprint. The benefits of the ICC are:

- Low maintenance cost
- High reliability
- Robust design
- Efficiency



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CO₂ in Wine