



# TT Sensor Plus™ 2

Protecting premium wine with temperature tracking

# TT Sensor Plus™ 2

Case study



Product quality and supply chain integrity are essential requirements for premium wines. Many wines are exported, traveling large distances before reaching the consumer. Rapid changes in temperature can impact ageing characteristics and wine quality, and a study\* has revealed that most unacceptable daily temperature fluctuations in wine occur during transport. Another study\*\* has shown that transport during the summer has a particularly negative impact on physical, chemical and sensory wine properties. Temperature variations can cause many different problems that an educated consumer will notice, from a reduction in fruit through to oxidation - leading to a poor experience with an individual bottle and inaccurate perceptions of the true nature and quality of a wine.

A premium price range means that consumers demand and expect excellent organoleptic characteristics – including taste, sight, and smell. Label converter Notarianni Srl was asked for a reliable temperature tracking solution for wines produced by the Cantine Ascheri Giacomo winery, among which Barolo was the most significant (known as one of the best Italian red wines). The winery needed transparency on storage and transport conditions so that any issues could be resolved between shipments. That meant revealing temperature variations during shipment all the way from departure at the winery through to arrival at the local US or Canadian distributor.

Owner of the Cantine Ascheri Giacomo winery, Matteo Ascheri, said that wine quality is always paramount: “We are a family business that has built an excellent reputation over many years. Our customers expect the very best from our wines, and controlling shipping temperatures is an important part of what we do to ensure that wines arrive in the best possible condition. We wanted a solution that would be cost effective to implement and simple to use. TT Sensor Plus™ 2 has allowed us to differentiate our wines by ensuring detailed temperature information.”



\* ‘Cool or Hot’: a study of container temperatures in Australian wine shipments. Australasian Journal of Regional Studies, Vol. 18, No. 3, 2012

\*\* Potential wine ageing during transportation. BIO Web of Conferences 3, 02004 (2014)

## Creating the solution

Avery Dennison worked with Alfredo Pollici, owner of Notarianni Srl, to create the right solution for the winery’s needs. Benoit Jourde, business development manager, Intelligent Labelling & Healthcare for Avery Dennison, said that the technology used in TT Sensor Plus 2 is an excellent fit: “This device has typically been used in temperature-sensitive pharma applications, but it is extremely easy to implement and can be adopted across many different segments. In particular, the label or insert used is very small, so existing packaging can easily accommodate it. There is also no need to worry about buying expensive and bulky conventional data logging devices.”

TT Sensor Plus 2 logs time and temperature, and comes complete with important extras such as a cloud environment, an application programming interface and calibration capabilities for individual shipments. At around one-third the size of a credit card, it can be attached to or placed inside packaging. Users can program it to record temperature history at defined intervals during shipment, and all temperature data is uploaded on arrival easily via NFC to smartphone or computer. Powered by an internal battery, the device records up to 150,000 data points and has a temperature accuracy of +/- 0.3°C.

For the winery application, a non-self-adhesive version of TT Sensor Plus 2 was inserted into each wine case. Alfredo Pollici said that the size of the device was important: “There are already six bottles in the case, so we needed something small enough to fit quickly and easily inside. This has proved to be a very useful addition to our usual labelling business – we specialise in wine labelling so it was good to be able to solve an important customer’s challenge with such a simple solution. Temperature information is made available directly to the customer, uploaded to the cloud as soon as the distributor receives a shipment and taps the sensor, so there are no complications around providing reports.”



For more information on technical performance and printing recommendations, please refer to the respective datasheets. Please note that the Avery Dennison product range and service offering can be subject to changes. For an accurate overview, please check our website [label.averydennison.eu](http://label.averydennison.eu) or contact your local Avery Dennison sales representative.

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