

What happens to your wine en route

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See also [JancisRobinson on wine.com](#) for an importer's view.

Last summer a thousand cases of very fine wine indeed had to be poured straight down San Francisco's drains. They had been shipped from Arizona for an auction and because the owner knew that they could encounter temperatures of over 100 degrees Fahrenheit en route, he paid the extra to have the wine shipped in a cooler, a temperature-controlled container. The only trouble was that someone turned the temperature so low over the weekend that the wine froze and started to push out the corks, heavily leaking oxygen in. The result was a \$100,000 insurance claim.

In 2003 a Hong Kong wine importer also had to claim for an entire container-load of wine, this time from Australia. When it arrived at the warehouse it was, worryingly, warm to the touch. Even an hour later, when a surveyor had arrived, the temperature inside was 52 deg F (14 deg C and nearly all the bottles had their corks either popped out or bulging out from the capsule. The wine had this time expanded due to extreme heat.

James Hocking of Dr Peter Michael's Vineyard Cultiva, a specialist importer of the California wine into the UK, admits, "I'm obsessed about temperature control and always ship in coolers. I had a bad experience once. Twelve hours at too high a temperature is all I can. Frightening is the word."

Boston entrepreneur and the wine lover Eric Vogt has been testing a new system for combating wine fraud around Bordeaux over the last year or so. One of the three pieces of hardware that comprises his ePhorceance system is a credit-card-size bit of plastic which, using radio frequency identification (RFID), can be read without opening the case. It is designed to complement a tamper-proof neck seal and a fully traceable tag that goes into the base of every bottle. The card goes into each case of a dozen bottles and is able to log the temperature every eight hours so that ePhorceance.com can supply a complete record of the temperatures at which that case of wine has been kept - to those who sign up.

When, over dinner with Jean-Luc Thureau of St-Etienne's Château Valentin, he explained about his special temperature-measuring device, Thureau laughed loudly. "So you want to get assassinated?" he asked Vogt.

It is true that the results of measuring the most used wine in the world over the last six months are explosive. The temperature graphs suggest that even wines supposedly shipped from Bordeaux's vitiguard (independent producers) in coolers can experience extremes of heat and cold at some point on their journey, typically at the beginning or end. "I had sending wine to London late summer, for instance," he told me earlier this year. "You could track the day/night variation of a truck lumbering towards the UK. Because of these concerns we're giving data on temperature profiles back to the château only if the independent wholesaler signs an agreement with a mutual consent to hold everyone blameless."

Quite. It would seem that, as useful as the data would be, it will be some time before it finds its way into the consumer domain - although it could prove a useful spur to improving shipping standards, just as it was only when technology was introduced in 2000 which proved just how high a proportion of wine corks were tainted that the cork industry started to mend its ways (see [Quality of the cork industry](#)).

Vogt's is by no means the only authentication system that has been developed for the wine row that the potential for fakes has increased along with the wine prices and the globalisation of the market. But the likes of Prostag and Applied DNA Sciences do not incorporate this temperature tracking. In general, producers of the wines most commonly targeted by fraudsters are understandably reliant about the methods they use to fight them, which can include barcodes, quality printing of labels, invisible markings and DNA profiling of both packaging materials and the wine itself. It seems that for the Bordeaux château currently testing ePhorceance, it is the temperature monitoring part of the system that is of most interest. Vogt reports four times more interest in his 'Intelligent Case' - equipped with temperature-sensitive cards than in his tagged and neck-sealed 'Intelligent Bottle'.

But if wine producers are interested in shipping temperatures and conditions, it would seem that some of their customers are, worryingly, less so. I asked Chris Porter of the wine forwarder Porter & Laker, a subsidiary of the wine shipping specialist Hillbrand, how common it was for British wine importers to use coolers or any other form of temperature control such as their special thermo-trains, insulated units or even a brick blanket which can be quite effective and much less expensive than a cooler, which costs around £2,000 for a shipment of around 1,000 cases. He told me it was "surprisingly uncommon" even for the wines and that his company had only a handful of requests a year for such careful treatment of even the most expensive wines. (A subsequent conversation with the Corning & Barrow team revealed that they do use coolers and, if necessary and a difficult time of year, air transport.)

"Most of them tend just to take the risk. The ambient temperature during most shipments varies enormously, so anyone who has taken the trouble to monitor it knows. But it's only those logistics controllers who really want to get to grips with it that take the trouble to install any temperature monitoring device in a container. And that's usually driven by a bad experience. They do tend to wait until something goes wrong."

He singled out for praise New Zealand wine producers who tend to insist on temperature-controlled shipments. Many American wine importers insist on coolers, and the Ontario liquor monopoly, LCBO, which has to contend with some extreme temperatures, has long insisted on temperature control for shipments of its more expensive wines throughout both the long Canadian winter and in the height of summer. But most British wine importers seem to hope that by avoiding shipping during height of summer they will be sheltered from the worst. Perhaps climate change will affect wine shipping along with wine growing?

That said, although there is no shortage of anecdotal evidence of the harm that extreme temperatures can inflict on wine, there is very little hard scientific data. Dr Christian E. Ballew and others at the University of California at Davis published a [study in 2005](#)

after having monitored wine shipment temperatures. Their observations suggested that coolers really do work, provided the temperature controls are properly set of course, and confirmed that high temperatures accelerates the ageing process and can make a wine seem to go brown and lose its fruit prematurely. But it is difficult to be definitive about precisely which temperatures really damage wine, however valuable this information would be to anyone with a wine collection.

Generally 55 deg F/13 deg C is suggested as the ideal cellar temperature, with an entirely uncoditional maximum of 72 deg F/24 deg C, and 22 deg F/-6 deg C a dangerous minimum at which lighter wines start to freeze. Different sorts of wine demonstrably react differently. Most connoisseurs find that red burgundy is one of the most sensitive types of wine, just the least. On the other hand, now that I have learnt that so much Chilean wine is shipped to the UK via trans-shipment in the Bahamas, I have resolutely hoped for its robustness. British freight forwarders are yet to receive a complaint about heat

damage to Chilean wine in transit, while the same can not be said about all the Australian wine that has sat in Singapore awaiting a northbound vessel.

More research, and more action, please.

Christine Buckle will be presenting the results of his recent laboratory work cooling different varietal wines at different temperatures at a morning colloquium entitled 'The impact of temperature on the wine' in Bordeaux on Monday, 7 Apr. As far as I can tell, it is the first scientifically designed experiment on the topic.