Check Stab Instruments

Specialists in Tartaric Stability Control

Offices and Laboratory:
Via della Treccia N°37 – 50145 Firenze (IT) Tel.+39 055 319555 Fax.+39 055 316441

DOC 116 – INTERPRETING GRAPHICS

SUMMARY

Introduction

After completing the analysis, it is very important to interpret well the resulting graphic tables. It is not enough to observe the precipitation measured in Micro Siemens. It is essential to evaluate the progress of the Mini Contact curve (or Saturation Temperature curve) of the graph. The graph can be visualized in the Normal Mode or Relative Mode in the Mini Contact analysis. The graph can be visualized in the Differential Mode or Normal Mode in the Saturation Temperature analysis.

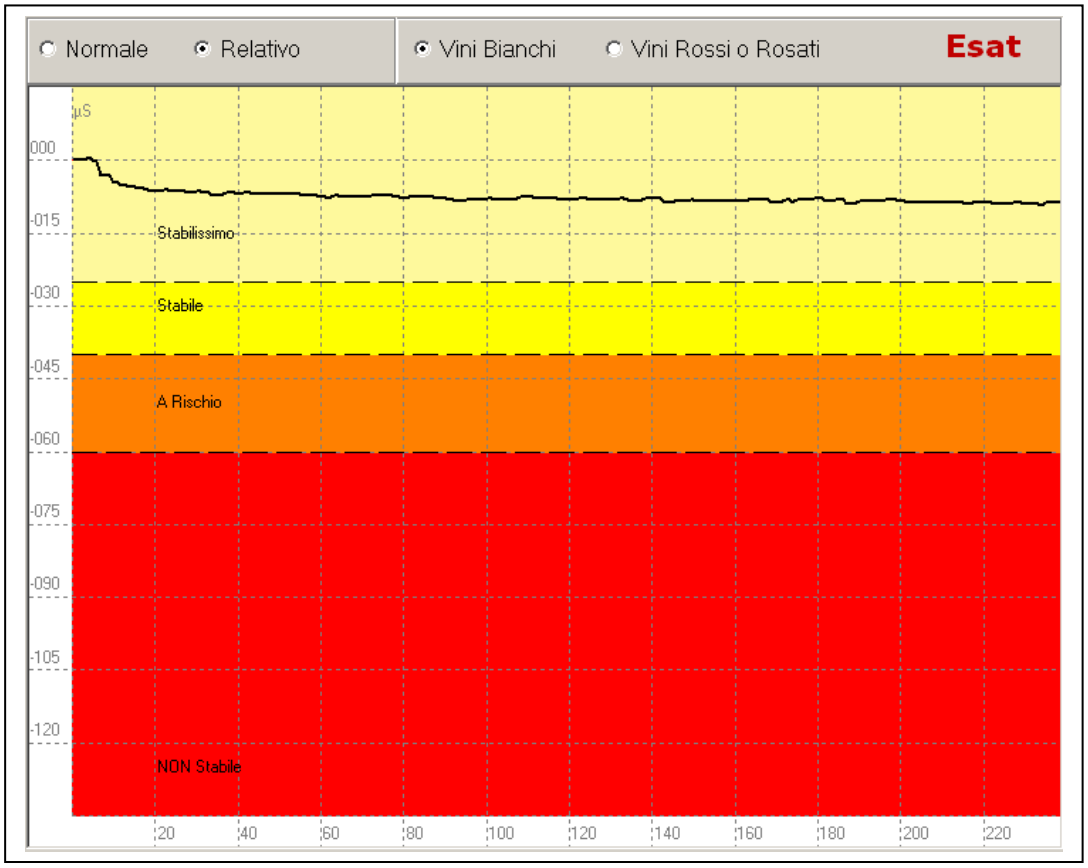
Mini Contact:

In the Normal Mode the absolute conductivity is visualized. In the Relative Mode the precipitation values during the analysis are visualized. For an easier interpretation of the chart, we advise using the Relative Mode.

Saturation Point:

The Normal Mode graph has three curves (descending curve without KHT, Mini Contact curve, and rising curve with KHT). In the Differential Mode, the curve is visualized by passing through the Solution Zone to Precipitation Zone. Below are a few examples of analysis made with Red and White wine samples.

1. Mini Contact – White Wine (very stable)

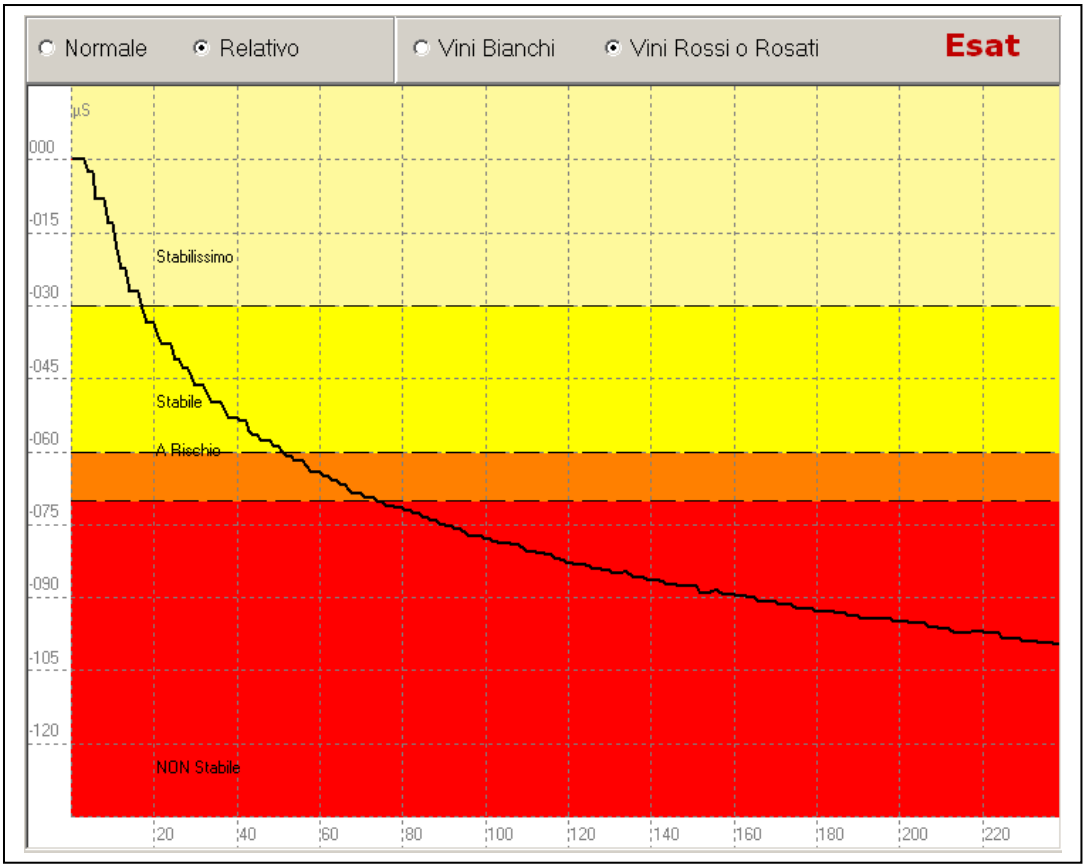


Mini Contact Analysis of a sample of white wine:

Beginning Conductivity:	1214,2 µS
End Conductivity:	1205,2 µS
Knock Down Conductivity:	9,0 µS

In this case the wine is **very stable.** The knock down value is only **9 µS** and the curve, after a slight beginning drop, continues in a very linear manner.

2. Mini Contact – Red Wine (instable)

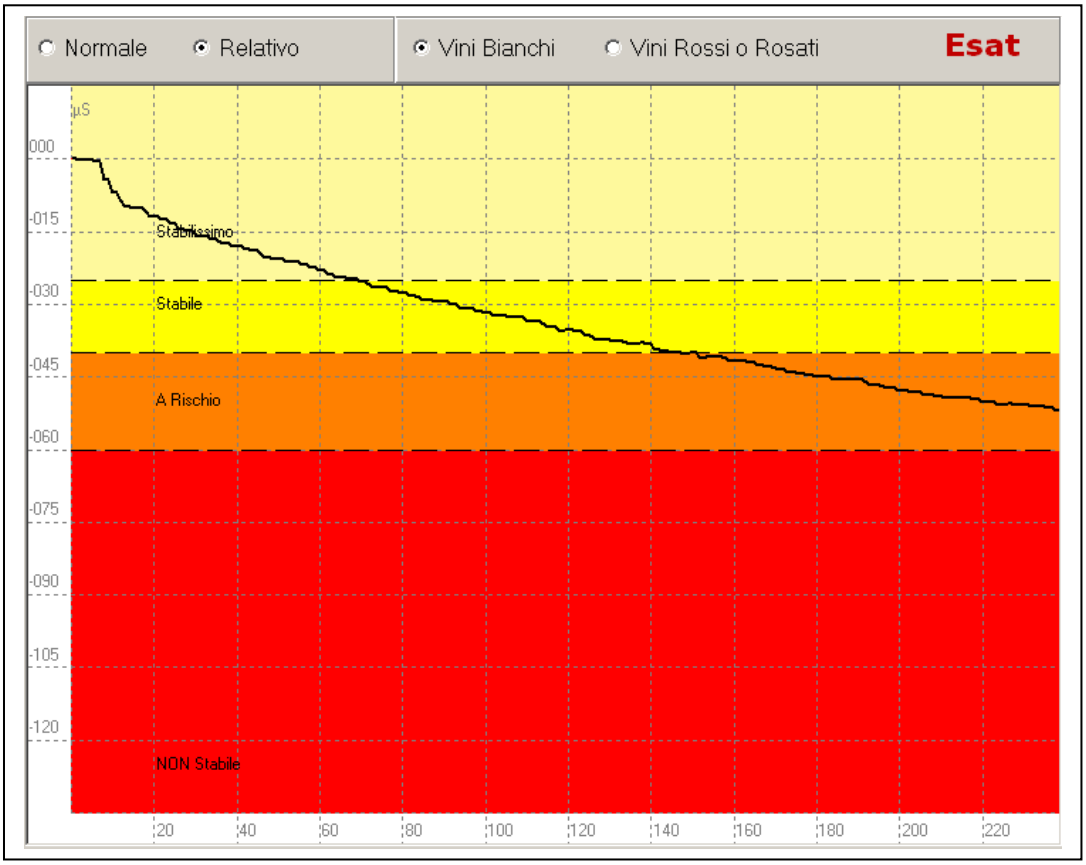


Mini Contact Analysis of a sample of red wine:

Beginning Conductivity:	1118,4 µS
End Conductivity:	1019,4 µS
Knock Down Conductivity:	99,0 µS

In this case the wine is **completely instable.** The knock down value is **99,0 µS** and the curve has a steep inclination with the tendency to continue to lose more in terms of microsiemens.

3. Mini Contact – White Wine (at risk)

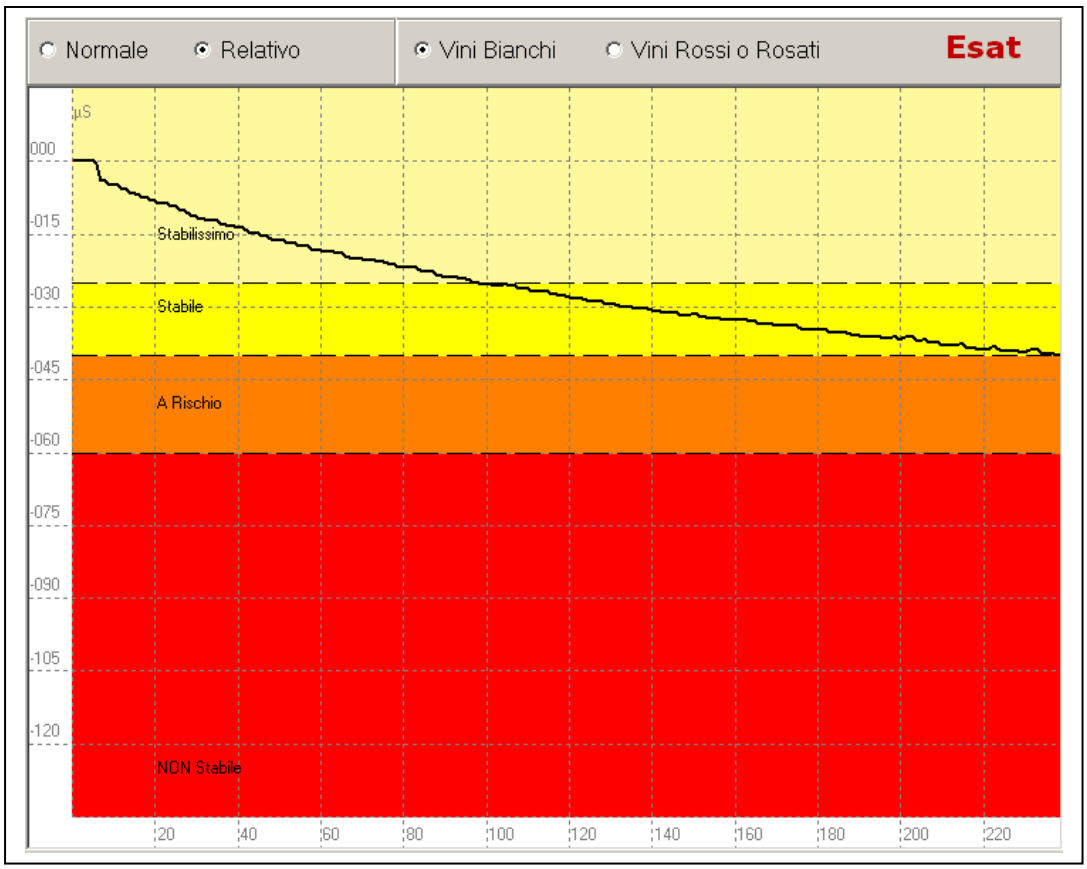


Mini Contact Analysis of a sample of white wine:

Beginning Conductivity:	1191,5 µS
End Conductivity:	1140,2 µS
Knock Down Conductivity:	51,3 µS

This is a common graph of wine that is **at risk.** The knock down value is **51,3 µS.** In this case the curve, as we see in the graph, terminates in the risk zone. Having a very evident inclination towards the "Not Stable" Zone, we can interpret that by following the direction of the curve, it is rapidly moving towards the Instable Zone. In this case, we can consider this wine **Not Stable**.

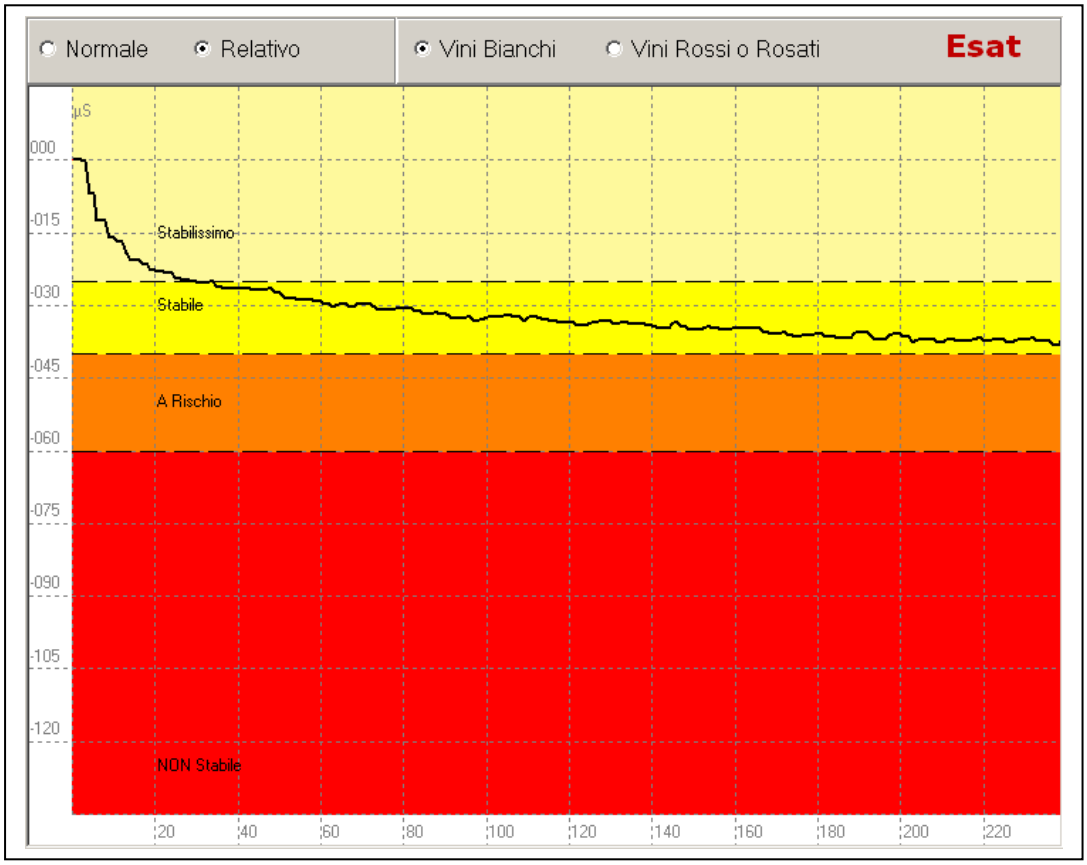
4. Mini Contact – White Wine (at risk)



Mini Contact Analysis of a sample of white wine:
Beginning Conductivity: 757,3 µS
End Conductivity: 717,5 µS
Knock Down Conductivity: 39,8 µS

This case is similar to the preceding case. The knock down value is **39,8 µS** and the curve terminates in the Stable Zone. Observing this curve, we can see, that the inclination is pretty steep and is tending to move to the Risk Zone. We can conclude that this wine is to be considered not completely stable. Quite probably, this wine will **not** precipitate crystals at **first contact** with a cold environment. **However**, if this wine is kept in a cold temperature for a longer period of time it **will have the tendency to precipitate crystals**. It would be wise, in this case, to consider a stabilization treatment of this wine before bottling.

5. Mini Contact – White Wine (Stable)



Mini Contact Analysis of a sample of white wine:

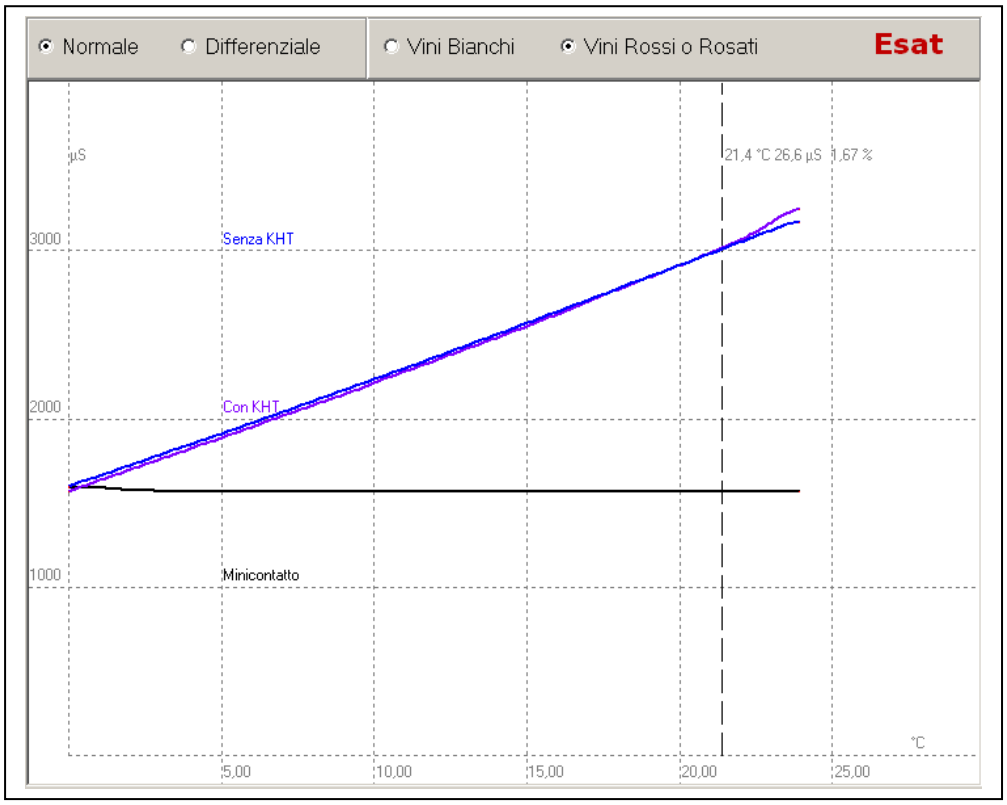
Beginning Conductivity:	765,5 µS
End Conductivity:	729,0 µS
Knock Down Conductivity:	36,5 µS

This case is similar to the preceding case. The knock down value is **36,5 µS** and the curve terminates in the Stable Zone. Observing this curve, we can easily see that the inclination is moving in a much more linear manner with respect the preceding example graph. We can say in conclusion that in this situation the wine is considered **Stable**.

Examining this analysis and the one before it, we can see that even though the knock down values are similar (39,8 µS and 36,5 µS) the wines are in different states of stabilization. It is therefore, very important to evaluate the movement (and shape) of the precipitation curve over time and not to base the interpretation only on the knock down values of conductivity.

Offices and Laboratory:
Via della Treccia N°37 – 50145 Firenze (IT) Tel.+39 055 319555 Fax.+39 055 316441

6. Saturation Temperature – Red Wine (Stable)



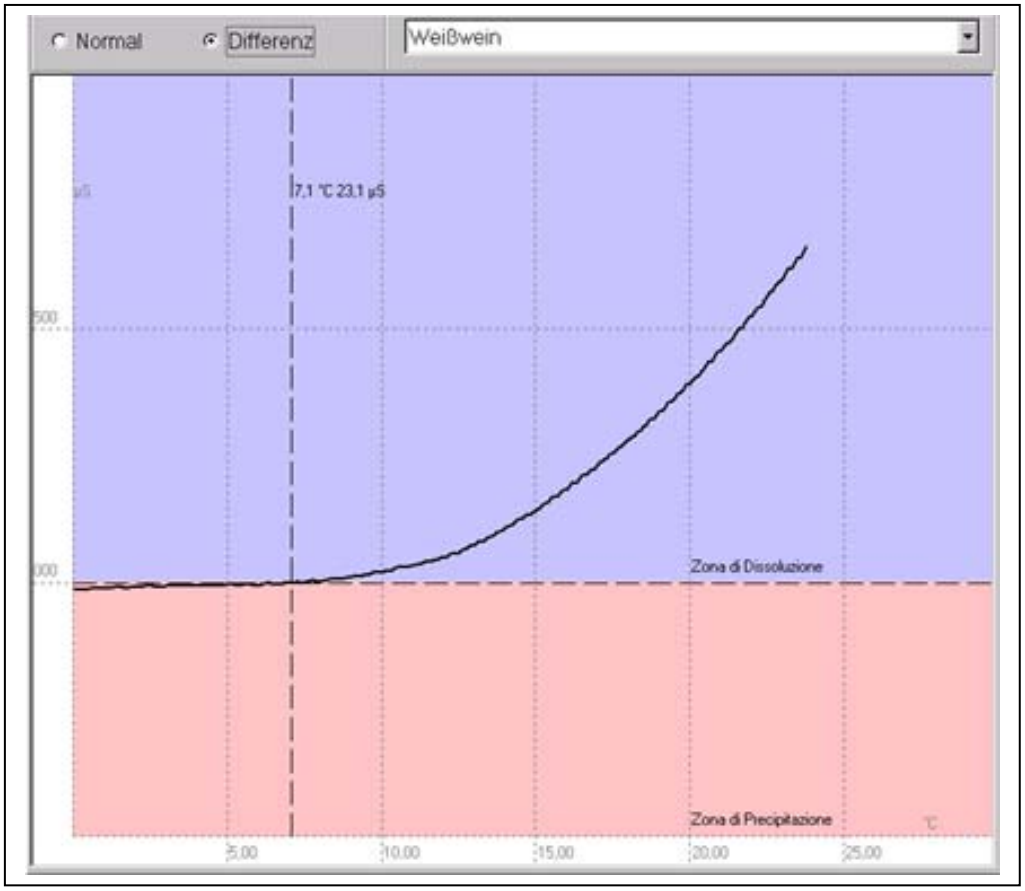
Saturation Temp Analysis of a sample of red wine:

Beginning Conductivity:	1591,8 µS
End Conductivity:	1565,2 µS
Knock Down Conductivity:	26,6 µS
Saturation Temperature	21,40 °C

The saturation point analysis indicates results both in knock down conductivity in micro siemens and the temperature at which there will be the beginning formation of crystals in the crystalization process.
In the example above we have a Saturation temperature of **21,40°C.** This case indicates that at **21,40°C** the wine will begin to form the first crystal formations. To visualize crystals with the naked eye, one must subtract **10°C** from the saturation temperature obtained by the instrument. In the example analysis above, one will see precipitated crystals in the bottle at around **11°C.** But, in this case, having a relatively low knock down value in micro siemens **26,6 µS,** there will be very few precipitated crystals in the wine (not visible). We can therefore say this wine is **Stable**.

In conclusion, generally speaking, we can interpret saturation temperature results by saying that the temperature of saturation will tell us the temperature at which crystals will begin to form, while the knock down value in micro siemens will indicate the quantity of precipitate we will have in the bottle.

7. Saturation Temperature – White Wine (Stable)

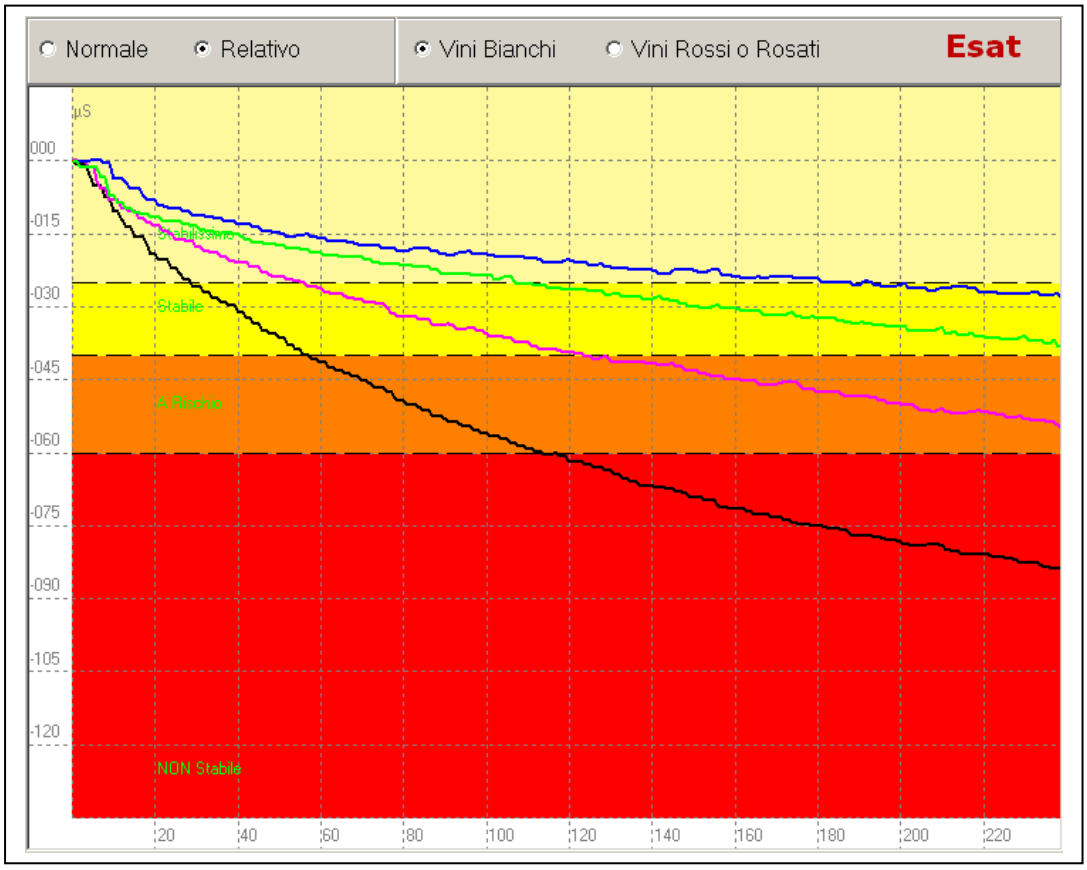


Saturation Temperature analysis of a white wine sample:

Beginning Conductivity:	1683,9 µS
End Conductivity:	1660,8 µS
Knock Down Conductivity:	23,1 µS
Saturation Temperature:	7,1°C

This is a saturation temperature analysis that is visualized in a differential mode. In this case, we have obtained a saturation temperature of **7,10°C** and a precipitation value of **23,1 µS.** We can say that this wine is stable. In the differential mode, the graph is divided in two areas: the zone in solution and the zone of precipitation. The point where the line crosses the dividing line is the saturation temperature.

8. Comparing Minicontact results During stabilisation



Stabilization Process of a white wine:

• Original wine sample	Knock Down Conductivity:	82,5 µS	Black curve
• After 1 day of stabilization	Knock Down Conductivity:	53,4 µS	Violet curve
• After 2 days of stabilization	Knock Down Conductivity:	36,5 µS	Green Curve
• After 3 days of stabilization	Knock Down Conductivity:	27,5 µS	Blue Curve

This is an example of the use of a Check Stab instrument during the process of stabilization of a wine. We have taking a test white wine that must be bottled.
At the first mini contact analysis we found a knock down value of **82,5 µS** (see the black curve above). It is very obvious that the wine is completely **Instable**.
It has been decided to begin a stabilization treatment.
After a day of stabilization a second mini contact analysis was made. The results show a knock down value of **53,4 µS** but the curve is still dropping very fast and has reached the Risk Zone. It will be necessary to continue the stabilization process.

Offices and Laboratory:
Via della Treccia N°37 – 50145 Firenze (IT) Tel.+39 055 319555 Fax.+39 055 316441

The third analysis was done at the end of the second day of stabilization and as we can observe, we have a knock down value of **36,5 µS** and the curve is moving in the **Stable Zone**. Having a curve that continues to drop, it was decided to continue another 24 hours of stabilization to be sure the wine is stable.
On the third day of stabilization we obtain a good result, the wine had a knock down value of **27,5 µS** and the curve has little inclination. In this condition, the wine is ready for bottling.
This procedure, if used during stabilization, (especially using the cold refrigeration-type stabilization) will allow the winery to optimize the timing of the bottling process and thereby save energy used in the stabilization process.