



PROGETTO AMBIENTE

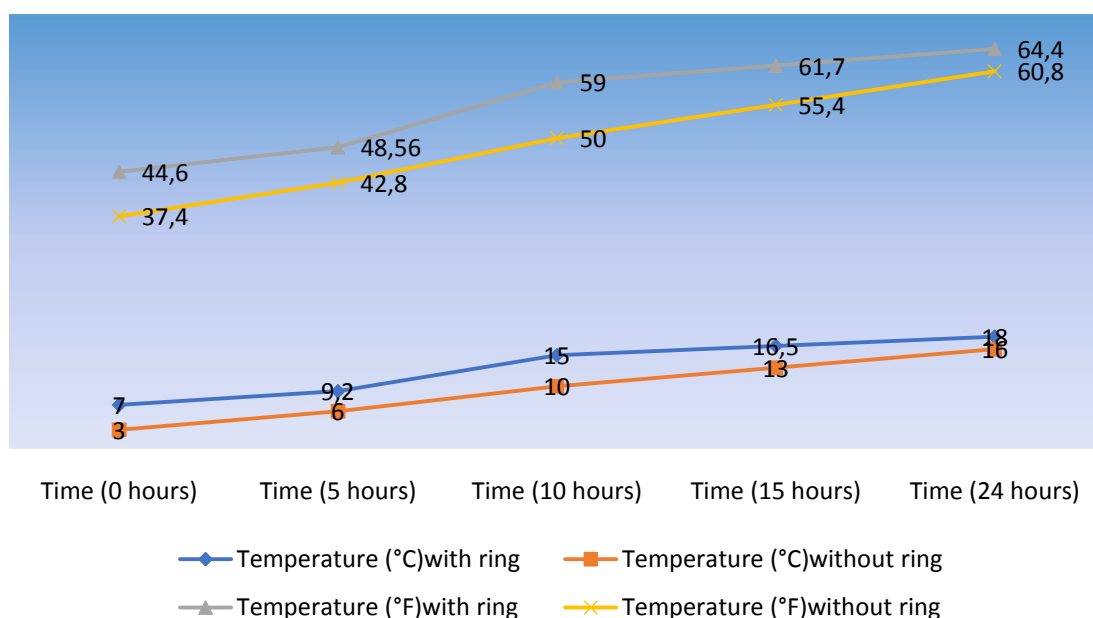
LABORATORIO DI ANALISI AMBIENTALI

*Analisi Acque potabili, reflue, superficiali e piscina - Analisi chimico-fisiche di Terreni
Analisi Igienico Ambientali - Analisi chimica su olio e vino - Etichettatura alimenti*

REPORT TEMPERATURE TEST ON THERMAL BOTTLE 24 OZ

Temperature test results carried out with cold liquid at controlled and constant external T of 25 ° C / 77° F
(comparison between results obtained using the thermal bottle with ring and the one without ring)

THERMAL 24 OZ BOTTLE TEST WITH COLD LIQUID





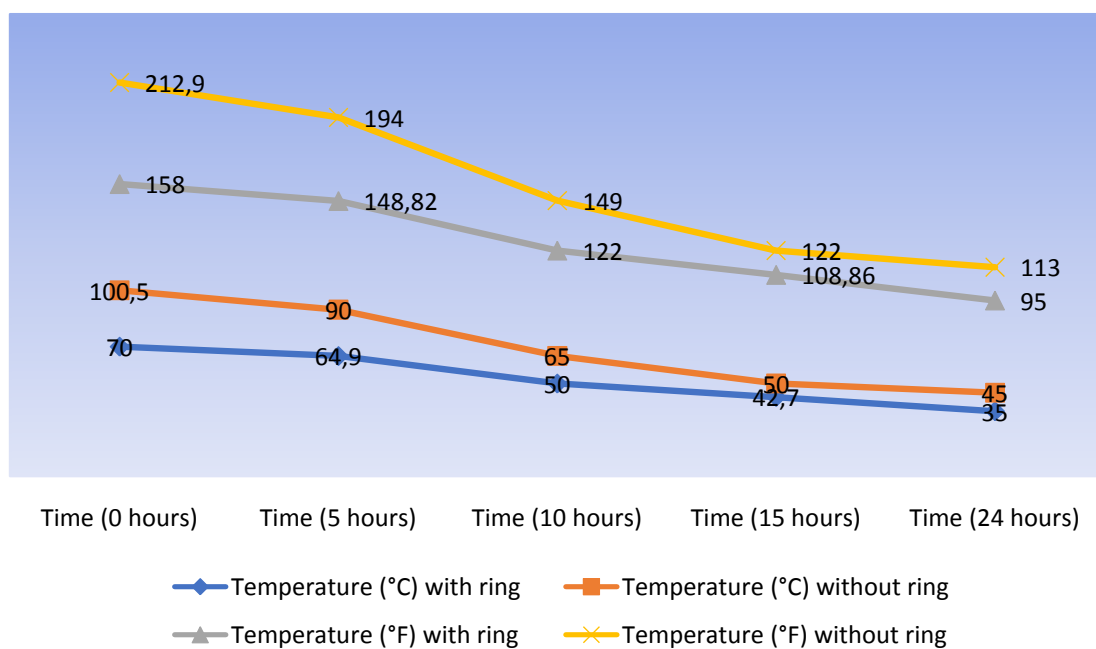
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Temperature test results carried out with hot liquid at controlled and constant external T of 25 ° C/ 77° F
(comparison between results obtained using the thermal bottle with ring and the one without ring)

THERMAL 24 OZ BOTTLE TEST WITH HOT LIQUID





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I have included some photos for illustrative purposes of the operating methods.



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From the results obtained it can be considered that the bottle is able to ensure the maintenance action of the T of the liquid placed inside it for a satisfactory period of time. The action of the ring produces a small effect of further thermal insulation, which could have been more appropriately appreciated by carrying out the test with and without a ring under the same experimental conditions, that is with the same initial temperatures of the liquid. It is noted, in the presence of the ring, that the dispersion of the heat and therefore the cooling (in the case of the hot liquid), as well as the heating (in the case of the cold liquid), take place more homogeneously than the tests without ring. However, this is also due to the different initial T of the liquid: the hotter the liquid, the more it comes into contact with the cold inside of the flask, the more sudden it is cooled than the less hot liquid: in fact, if the excursion of the liquid at 70 ° C / 158° F after 5 hours it was only about 5 ° C / 9° F, for the liquid at 100 ° C / 212° F it was 10° C / 17° F. However, considering the final Ts, obviously entering a warmer liquid it is normal that the final T is also higher and the liquid is still be warm even after 24 hours. The same applies to the cold liquid which obviously heats up more slowly if the initial T is lower. The results obtained allow us to state that even after 15 hours the liquids can still be defined as hot (for the hot liquid) and cold (for the cold liquid), in a more than satisfactory manner.

THE ANALYST

DOTT. CHIM. FRANCESCA MARCHIO

