



Istituto Istruzione Superiore "S. Pertini" Alatri

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WATER ANALYSIS

Farmers for future

School year 2021 / 2022



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WATER ANALYSIS

- Hardness: permanent, temporary, total
- Ammonia
- Nitrites
- Nitrates
- Chlorides
- Phosphates
- pH

Farmers for future



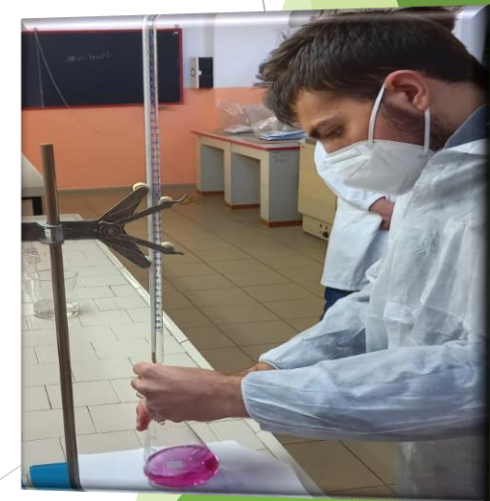
WATER ANALYSIS

- **HARDNESS**

PERMANENT HARDNESS, due to the chlorides and sulphates of calcium and magnesium, and in general to all the salts of the alkaline earth metals that remain in solution after boiling.

Method:

In a 400 mL beaker, bring 250 mL of sample water to a boil for 30 minutes. Allow to cool and filter through a blue band filter, take 100 mL of filtered water into a flask and place it in a 250 mL beaker or flask. Add 5 mL of pH 10 ammonia buffer and a spatula tip of NET. The solution will turn a wine red color. Titrate with 0.01 M EDTA until the solution takes on a pale blue color.





WATER ANALYSIS

- ### HARDNESS

TOTAL HARDNESS, consisting of the sum of the temporary and permanent "hardness".

Permanent hardness is due to chlorides and sulphates of calcium and magnesium, and in general to all salts of alkaline earth metals that remain in solution after boiling and permanent hardness

Method:

Total hardness: Take 100 ml of sample water with a flask and transfer them quantitatively to a 250 ml beaker or flask. Add 5 mL of pH 10 ammonia buffer and a spatula tip of NET. The solution will turn a wine red color. Titrate with 0.01 M EDTA until the solution takes on a pale blue color.



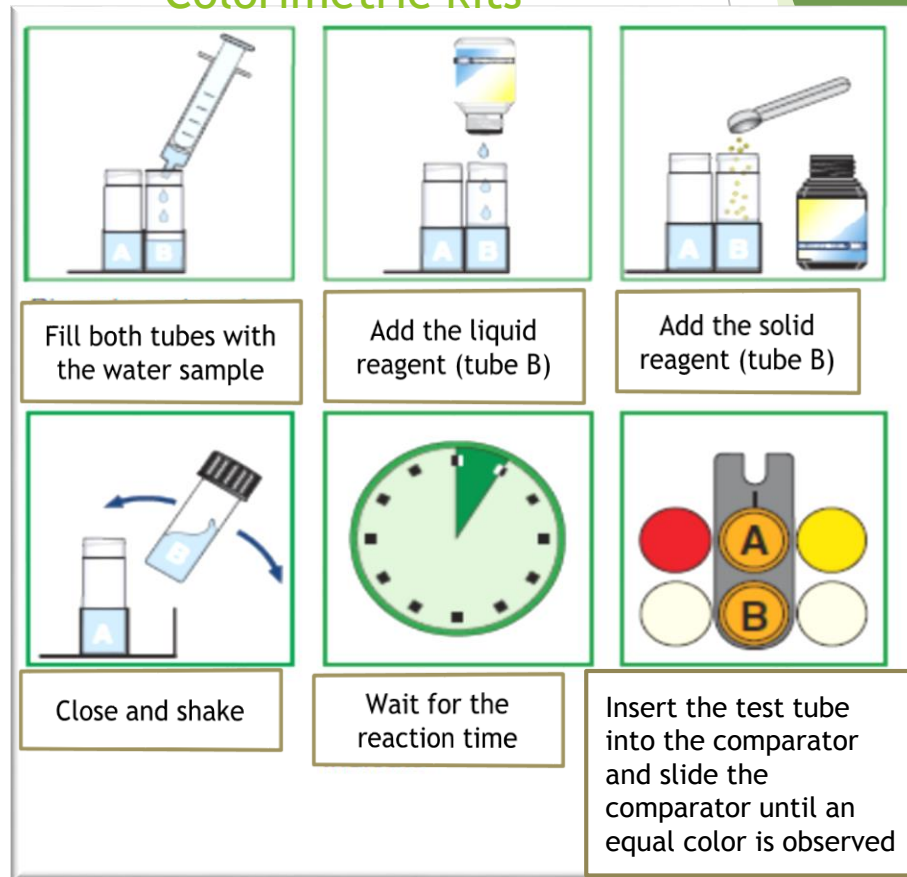


WATER ANALYSIS

AMMONIA
NITRITES
NITRATES
CHLORIDES
PHOSPHATES



Colorimetric kits





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WATER ANALYSIS

pH =7





WATER ANALYSIS

pH	7
permanent hardness	4,9
temporary hardness	12,3
total hardness	17,2
Ammonia	< 0,25 p.p.m.
Nitrites	< 0,05 p.p.m.
Nitrates	< 5 p.p.m.
Chlorides	> 40 p.p.m.
Phosphates	< 1 p.p.m

CONCLUSIONS

The analyzes show that we have fresh water, with a nutrient content, as regards ammonia and nitric nitrogen, present in optimal conditions and an neutral pH