

321 NO₃ (N) NITRATE (L)

1 - 20 ppm \ 120 Tests

Reduction and Formation of a Magenta-red Azo Dye

- Fill 16mmØ tube with a fully extended syringe (3.2m^l) of sample
- Add 3 drops of **NO₃-1** and mix
- Add 3 drops of **NO₃-2N** and mix
- Shake **NO₃-3** bottle vigorously for 1'
- Immediately add 3 drops and mix well
- Set aside for 15' - mixing several times during this period
- Switch on the Photometer 660
- Enter and press for 321 NO₃ (N)
- Set filter as indicated to 546nm and press
- Insert tube with plain water and press
- Insert tube with prepared sample and press
- Record Nitrate as ppm (mg/l). 1 ppm NO₃ ≡ 0.44 ppm NO₃-N

Right until the time of the 1970s public water supplies in populated inland areas with nitrate values in the range of 50 to 100ppm were nothing exceptional. Even with careful processing there was little one could do against an inherent nitrate load of the available water source. The consumer appeared unaffected, as nitrate failed to influence the properties of tap water in any physically conceivable way. In the years that followed, one began to combat this problem in many parts of Europe with increased investments towards the canalization and treatment of domestic sewage. Contrary to this, farmyard effluents, the other major source of nitrate, remained essentially untouched. The desire to secure an existence for small-holdings meant subsidizing increased animal husbandry in limited quarters. The increased faecal load had to be disposed of on the remaining land, sometimes close to built-up areas, for the lack of an alternative. Elaborately reduced nitrogen freight of human origin in ground- and surface waters was therefore nullified by uncontrolled additions from agriculture. For home market price maintenance, Brussels subsidized the appalling transports of live EU beef cattle reared in close quarters to the Near East. In this way, the EU consumer paid for the reduction of nitrate in water several times over, a high price for experiencing values under 20ppm more often today than before. Reagent NO₃-3 reduces a constant portion of the nitrate (~10%) to nitrite. This reacts with Sulfanilamide (NO₃-1) to a diazotate which couples with NNEDDC (NO₃-2) to a magenta-red dye.

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