# TNT 856 Nickel

DOC312.53.94150

**0.1–6.0 mg/L Ni** **TNTplus®—Method 10220**

**Scope and application:** For water and wastewater.

## Test preparation

### Reagent storage

Storage temperature: 15–25 °C (59–77 °F)

### pH/Temperature

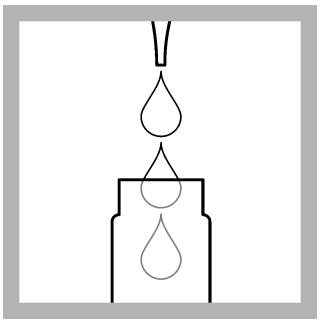
The pH of the water sample must be between pH 3–10.

The temperature of the water sample and reagents must be between 15–25 °C (59–77 °F).

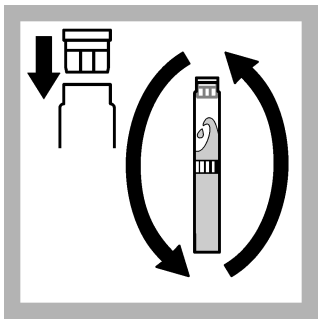
### Before starting

| |
|---|
| In case of not working at the correct recommended temperature an incorrect result may be obtained. |
| Nickel concentrations greater than the measuring range cause precipitation in the vial. In such cases the water sample must first be diluted with distilled water. |
| Undissolved nickel or nickel bound in complexes can only be determined after digestion with Metals Prep Set TNT 890. |
| Review safety information and expiration date on the package. |
| Review the Safety Data Sheets (MSDS/SDS) for the chemicals that are used. Use the recommended personal protective equipment. |
| Dispose of reacted solutions according to local, state and federal regulations. Refer to the Safety Data Sheets for disposal information for unused reagents. Refer to the environmental, health and safety staff for your facility and/or local regulatory agencies for further disposal information. |

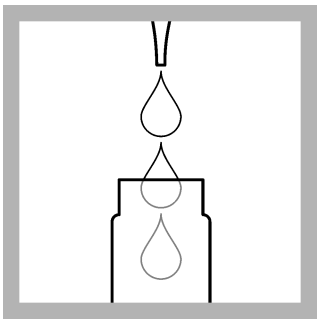
### Procedure



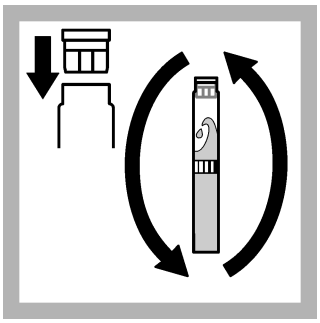
**1.** Carefully pipet **2.0 mL** of **sample**.



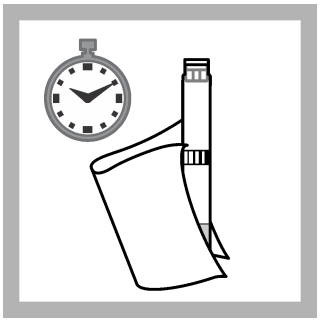
**2.** Close the vial and invert a few times until the freeze-dried contents are **completed dissolved**.



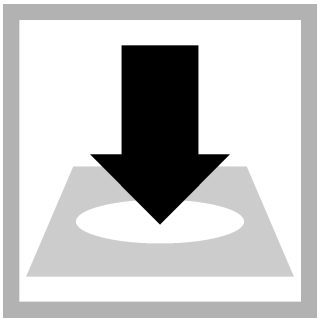
**3.** Carefully pipet **0.2 mL** of **solution A**.



**4.** Close the vial and invert a few times.



**5.** After **3 minutes**, thoroughly clean the outside of the vial and evaluate.



**6.** Insert the vial into the cell holder.
DR 1900: Go to LCK/TNTplus methods. Select the test, push **READ**.

## Interferences

The ions listed in the table have been individually checked against the given concentrations and do not cause interference. The cumulative effects and the influence of other ions have not been determined.

The measurement results must be subjected to plausibility checks (dilute and/or spike the sample).

| Interference level | Interfering substance |
|---|---|
| 1000 mg/L | $K^+$, $Na^+$, $Cl^-$, $SO_4^{2-}$ |
| 500 mg/L | $NH_4^+$, $NO_3^-$, $Ca^{2+}$, $PO_4^{3-}$, $CO_3^{2-}$ |
| 50 mg/L | $Cr^{6+}$, $Zn^{2+}$, $F^-$, $NO_2^-$ |
| 10 mg/L | $Al^{3+}$, $Cr^{3+}$, $Cd^{2+}$, $Co^{2+}$, $Sn^{2+}$, $Pb^{2+}$ |
| 5 mg/L | $Fe^{2+}$, $Fe^{3+}$, $Mn^{2+}$, $Cu^{2+}$, $Mg^{2+}$, $Hg^{2+}$ |
| 1 mg/L | $Ag^+$ |

## Summary of method

In the presence of an oxidizing agent, nickel ions react with dimethylglyoxime in an alkaline solution to form an orange-brown-colored complex.

TNTplus®

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