

# Nitrite Assay Kit (Water And Soil)

**Operation Equipment:** Spectrophotometer/microplate reader

**Note:** Take two or three different samples for prediction before test.

**Catalog Number:** NA0509

**Size:** 100T/96S

## Components:

Extract solution: Liquid 100 mL×1 bottle, storage at RT.

Reagent 1: Liquid 10 mL×1 bottle, storage at 4°C in shadow.

Reagent 2: Liquid 10 mL×1 bottle, storage at 4°C in shadow.

Standard: Liquid 500 µL×1 bottle, 1 µmol/mL sodium nitrite standard solution, storage at 4°C.

## Product Description:

Nitrite exists widely in water and soil, which is an important intermediate of organic nitrogen decomposition. It may cause cancer of digestive system if intake too much.

In acidic condition, nitrite is reacted with aminobenzene sulfonic acid to form diazo-compound, then the compound is reacted with N-1-naphthylethylenediamine dihydrochloride to form purple-red azo compound, which can be detected by colorimetric assay at 540 nm.

## Reagents and Equipments Required but Not Provided:

Spectrophotometer/microplate reader, micro glass cuvette/96 well flat-bottom plate, centrifuge, balance, distilled water.

## Procedure:

### I. Sample preparation:

1. Soil: add 1 mL extract solution to 0.5 g sifted soil, shake for 1 hour at RT, centrifuge at 8000 rpm 25°C for 15 min, stand still, after layering take supernatant on the ice for test.
2. Water: detect directly, centrifuge if the sample is not clear.

### II. Procedure:

1. Preheat Spectrophotometer/ microplate reader for 30 min, adjust the wavelength to 540 nm, set the counter to zero with distilled water.
2. Dissolve standard with distilled water to 0.04  $\mu\text{mol/mL}$ .
3. Operational table:

Reagent name	Blank tube ( $A_B$ )	Test tube ( $A_T$ )	Standard tube ( $A_S$ )
Sample( $\mu\text{L}$ )		200	
Standard solution (ul)			200
Distilled water ( $\mu\text{L}$ )	200		
Reagent 1 ( $\mu\text{L}$ )	100	100	100
Reagent 2 ( $\mu\text{L}$ )	100	100	100
Mix thoroughly and stand for 15 min at RT, take 200 $\mu\text{L}$ to micro glass cuvette/96 well flat-bottom plate, detect absorbance at 540 nm.			
Note: Detect once or twice for blank tube			

### III. Calculation:

#### 1. Soil sample:

$$\text{NO}_2^- (\mu\text{mol/g}) = (A_T - A_B) \div [(A_S - A_B) \div C] \times V_S \div (W \times V_S \div V_e) = 0.04 \times (A_T - A_B) \div (A_S - A_B) \div W$$

#### 2. Water sample:

$$\text{NO}_2^- (\mu\text{mol/mL}) = (A_T - A_B) \div [(A_S - A_B) \div C]$$

C: standard solution concentration, 0.04  $\mu\text{mol/mL}$ ;

$V_e$ : extraction volume, 1 mL;

W: sample weight, g;

#### Note:

1. Storage at 2-8°C
2. There is no special requirement for temperature in this measurement.
3. Reagents have certain harm to the human body. Please wear lab coat and gloves.
4. Concentrate ( $A_{540} < 0.03$ ) or dilute ( $A_{540} > 1.5$ ) sample if the OD value beyond standard curve.

### Technical Specifications:

Minimum Detection Limit: 0.0005387 mg/mL

Linear Range: 0.000625-0.15 mg/mL

**Related products:**

NA0865/NA0622 Nitrate Reductase(NR) Activity Assay Kit

NA0754/NA0512 Glutaminase (GLS) Assay Kit

NA0753/NA0511 Glutamate dehydrogenase (GDH) Activity Assay Kit