

## Product Information

### 53659 FluoroSELECT™ Ammonia Kit

#### Product description

Ammonia ( $\text{NH}_3$ ) or its ion form ammonium ( $\text{NH}_4^+$ ) is an important source of nitrogen for living systems. Ammonia is found in the atmosphere, rainwater, soil, seawater, volcanic areas. It is widely used as fertilizer, cleaner, antimicrobial agents and in fermentation and chemical synthesis. Sigma-Aldrich's convenient assay uses o-phthalaldehyde reagent to directly measure  $\text{NH}_3/\text{NH}_4^+$ . The fluorescence intensity at  $\lambda_{\text{ex/em}} = 360/460$  nm is directly proportionate to the  $\text{NH}_3$  concentration in the sample.

#### Detection ranges and limits

Linear detection range: 0 to 1 mM (0–17 ppm)  
Detection limit: 30 mM (0.5 ppm)  
Typical precision (CV%): <2% at 1 mM, <4% at 0.25 mM

#### Equipment required but not included

[Z805726-1EA](#) FluoroSELECT™ Single channel fluorometer  $\lambda_{\text{ex}}$  360 nm;  $\lambda_{\text{em}}$  460 nm  
[Z805823-100EA](#) Glass vials for FluoroSELECT™ fluorometer

#### Components

1. 1 mL Reagent A (**43415**)
2. 1 mL Reagent B (**12284**)
3. 20 mL Assay Buffer (**93882**)
4. 400  $\mu\text{L}$  Standard (**04600**)

The kit is sufficient for approximately 200 assays.

#### Storage conditions

Store at -20°C

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Procedure

*Important: Prior to assay, bring the assay reagents to room temperature.*

1. Prepare 1 mM ammonia standard by mixing 5  $\mu\text{L}$  provided 20 mM  $\text{NH}_4\text{Cl}$  and 95  $\mu\text{L}$   $\text{H}_2\text{O}$  in an Eppendorf tube.
2. Prepare enough working reagent by combining the following per tube: 100  $\mu\text{L}$  assay buffer, 4  $\mu\text{L}$  Reagent A and 4  $\mu\text{L}$  Reagent B. In glass vials, add 10  $\mu\text{L}$   $\text{H}_2\text{O}$  ("Blank"), 10  $\mu\text{L}$  1 mM  $\text{NH}_4\text{Cl}$  ("Std"), and 10  $\mu\text{L}$  sample. Then add 100  $\mu\text{L}$  working reagent to each tube and mix. Incubate for 15 min at room temperature in the dark.
3. Switch on the reader. To calibrate the reader, place the "Blank" tube into the sample holder. Press "Calibrate", "Assay 1", then "Blank". Reader starts measuring. Press "<- Std ->", until the window shows "1.000". Place the 1 mM standard into the sample holder. Press "Measure". The reader shows "Calibrate Finished". The reader is now calibrated. Press "Return".
4. Measure. Place the sample tube into the sample holder. Press "Measure", "Assay 1", "Measure". The  $\text{NH}_3$  concentration (mM) will be displayed in the window. Note down the data and press "Return" to measure a next sample. Alternatively, press "Save" to save the data for later retrieval, press "Measure" for the next sample. *Note: if the measured concentration is >1 mM, dilute the sample in  $\text{H}_2\text{O}$  and repeat assay. Multiply the results by the dilution factor.*