

Microbiological tests

BioFix®
Nitrification inhibition tests 118
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Nitrification inhibition tests

Easy control of nitrification

The nitrification inhibition tests BioFix® *A-Tox* / *N-Tox* provide an easy method to control the biology on sewage plants. These BioFix® nitrification inhibition tests can be used to measure the inhibition of the nitrification in all types of water. Interferences by single substances as well as substance mixtures are detected.

Nitrification is an important step during waste water purification in order to keep the concentration of ammonium ions in the effluents of the sewage plant as low as possible. Additionally, nitrification is the prerequisite for denitrification for complete nitrogen elimination. This process is required for waste water treatment in many countries.

BioFix® nitrification inhibition tests allow the investigation of the first and second step of nitrification separately as well as undifferentiated. With BioFix® *A-Tox* one tests, whether the first step of the nitrification, the oxidation of ammonium, is inhibited by sample components. BioFix® *N-Tox* is used to analyze the second step of the nitrification, the oxidation of nitrite.

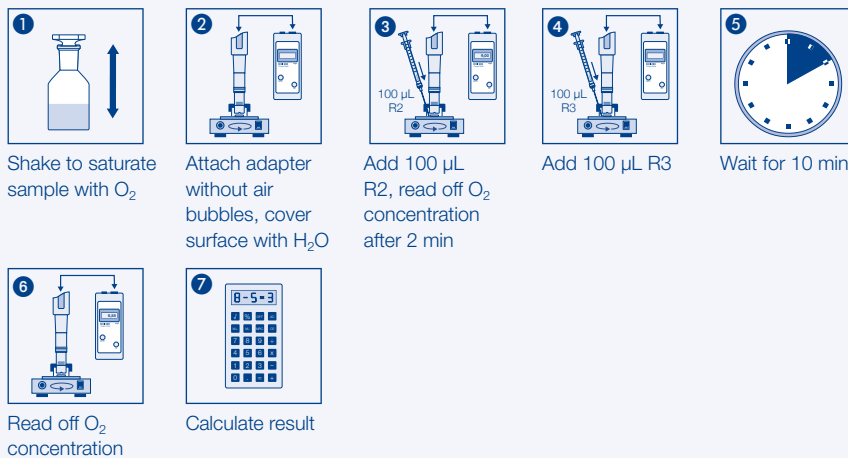
Whether the nitrification is inhibited by sample components in general can be determined with the undifferentiated screening test BioFix® *A/N-Tox*.



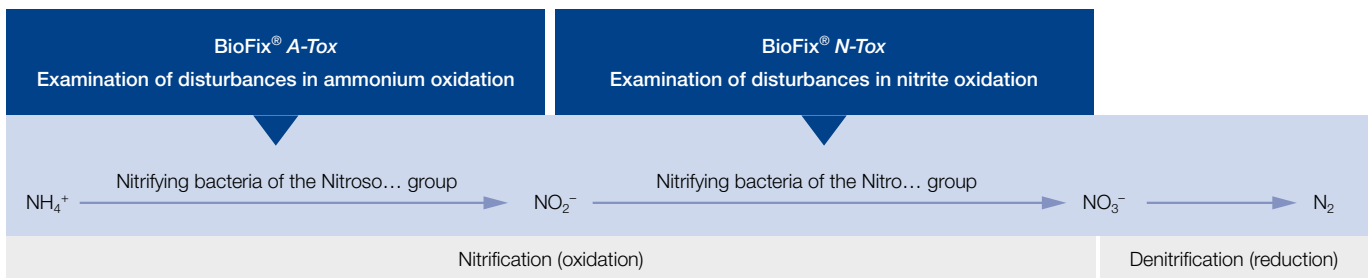
How it's done



Procedure of nitrification inhibition tests



Microbiological tests



Rapid

- Test only takes 10 min
- Pre-dosed nitrificants
- Ready-to-use reagents

Easy

- Considerably less effort necessary compared to DIN-procedure
- Evaluation without inconvenient equipment
- Dispose of used reagents without constraints

Safe

- High sensitivity
- Very good reproducibility due to defined bacteria strains
- Differentiated analysis of both nitrification steps possible

Ordering information

Test	REF	Number of tests	Shelf life
■ BioFix® A-Tox for evaluation of the biological conversion of ammonium to nitrite (1 st step of nitrification)	970001	10–19	1 year (2–8 °C)
■ BioFix® N-Tox for evaluation of the biological conversion of nitrite to nitrate (2 nd step of nitrification)	970002	10–19	1 year (2–8 °C)
■ BioFix® nitrification inhibition test, reagent A-Tox R2, enriched nitrificants for oxidation of ammonia	970903	10 x 2 mL	1 year (2–8 °C)
■ BioFix® nitrification inhibition test, reagent N-Tox R2, enriched nitrificants for oxidation of nitrite	970902	10 x 2 mL	1 year (2–8 °C)

Accessories

Description	REF	Content
■ Starter kit for BioFix® nitrification inhibition tests: 1 electrode adaptor which holds the oxygen electrode, 3 x 2 seals for the electrode adaptor, 2 mini-magnets, 1 micro syringe 100 µL, 1 filtration syringe 20 mL	970101	1 set
■ CHROMAFIL® membrane filters, 0.45 µm	91652	50 pieces
■ Electrode adaptor	970111	1 piece
■ Special adaptor 12 mm for oxygen electrodes with membrane heads type WP3-ST	970116	1 piece
■ Seals for electrode adaptor	970112	5 x 2 pieces
■ Reaction vessels	970113	50 pieces
■ Magnetic stirring unit without heater	970115	1 piece
■ Mini-magnets	970114	5 pieces
■ Stand, complete with 4 clamps and bosses	91695	1 piece

Luminous bacteria toxicity tests

Tests for bio toxicity in accordance to ISO 11348

BioFix® luminous bacteria tests use bio luminescence to determine bio toxicity. In contrast to chemical single parameter analysis, luminous bacteria tests allow an evaluation of the over-all-toxicity of a sample. The test principle is based on the static measurement of the bio luminescence of luminous bacteria (strain *Vibrio fischeri* NRRL B-11177), where a defined sample volume is mixed with a suspension of bacteria. Subsequently, the inhibition of the luminescence in the sample is determined in comparison to an uninhibited control solution.

The tests are easy to use and the procedure is normed (ISO 11348). This guarantees safe and reliable results with low effort. BioFix® luminous bacteria tests are available in various, application specific packing sizes. The applications for these tests reach from the analysis of ground, surface, seepage and all types of waste water to the analysis at waste disposal sites. Furthermore they allow the determination of the bio toxicity of solid material e.g. soil samples, sediments and solid waste.

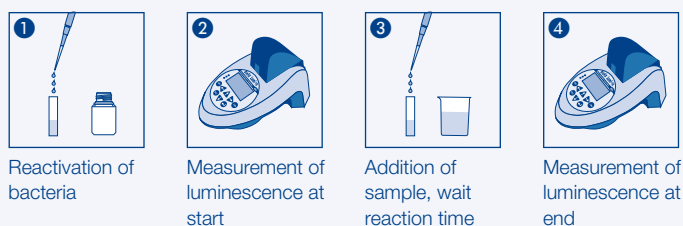
BioFix® luminous bacteria tests are available with liquid-dried (according to ISO 11348-2) and freeze-dried bacteria (according to ISO 11348-3). Used reagents and bacteria can be disposed of easily by washing them down the drain.

The evaluation of the toxicity analysis is performed with the BioFix® Lumi-10 (see page 156), a universal luminometer, which is suitable for portable use.

How it's done



Performance of luminous bacteria toxicity tests



Ordering information

Test	REF	Number of tubes	Number of tests	Shelf life	Liquid-dried	Freeze-dried
■ Lumi luminous bacteria, with reconstitution solution	945002	20	up to 2000	2 years		■
■ Lumi luminous bacteria, with reconstitution solution	945003	10	up to 1000	2 years		■
■ Lumi luminous bacteria, with medium	945006	20	up to 400	2 years		■
■ Lumi luminous bacteria, with medium	945007	10	up to 200	2 years		■
■ Lumi multi-shot, with reactivation and control solution	945022	10	up to 100	2 years		■
■ Lumi single-shot, with reactivation and control solution	945021	20	up to 40	2 years		■
■ Lumi luminous bacteria, with reactivation and NaCl solution	945023	10	up to 200	2 years	■	
■ Lumi luminous bacteria, with reactivation and NaCl solution	945024	20	up to 400	2 years	■	
■ Lumi luminous bacteria, with reactivation and NaCl solution	945025	10	up to 100	2 years	■	

All freeze/liquid-dried BioFix® luminous bacteria are also suited for luminometers of other manufacturers (e.g. LUMISTox, LUMISmini of HACH).
All luminous bacteria tests by MACHEREY-NAGEL need to be stored at -20 ± 2 °C.

Luminous bacteria toxicity tests

Accessories

Description	REF	Content
■ BioFix® Lumi diluent	945601	1 L
■ BioFix® Lumi osmotic adjusting solution	945602	50 mL
■ BioFix® Lumi reconstitution solution for freeze-dried luminous bacteria	945603	1 L
■ BioFix® Lumi diluent for solid phase test	945604	1 L
■ BioFix® Lumi medium for freeze-dried luminous bacteria in accordance with DIN EN ISO 11348-3	945608	1 L
■ Absorbance color correction cuvettes with 100 aspirators	940006	4 pieces
■ Glass cuvettes, 50 x 12 mm, plain bottom, 12 mm Ø	916912	690 pieces
■ Rack for glass cuvettes 12 mm Ø, 5 x 10 positions	945013	1 piece

