

REF 918 32

en

Test 1-32

04.13

NANOCOLOR® Anionic Detergents

(anionic surfactants)

Extraction method

Method:

Photometric determination with methylene blue

Cuvette rectangular:	50 mm	20 mm	10 mm
Range (mg/L MBAS):	0.02–1.00	0.05–2.50	0.1–5.0
Factor:	00.58	01.45	002.9
Wavelength (HW = 5–12 nm):	620 nm		
Range (mg/L MBAS):	0.01–0.50	0.03–1.00	0.1–2.0
Factor:	00.35	00.85	001.7
Wavelength (HW = 5–12 nm):	650 nm		
Reaction time:	0		
Reaction temperature	20–25 °C		

Contents of reagent set:

160 mL Anionic Detergents R1	3 x 535 mL Anionic Detergents organic phase
80 mL Anionic Detergents R2	2 g wadding
80 mL Anionic Detergents R3	1 glass funnel 35 mm Ø

Hazard warning:

Organic phase contains chloroform 90–100%.

H302, H315, H319, H332, H336, H351, H361, H373 Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

P202, P261, P280, P301+312, P302+352, P304+340, P305+351+338, P308+313, P330, P332+313, P337+313, P405 Do not handle until all safety precautions have been read and understood. Avoid breathing dust/vapors. Wear protective gloves/eye protection. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Rinse mouth. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Store locked up. For further details ask for a safety data sheet.

Interferences:

If the water contains cationic detergents in addition to the anionic ones, equivalent quantities are combined which escape analysis. Sulfide ions must be removed by the addition of hydrogen peroxide. In order to achieve optimum test results, it is essential that all glassware be thoroughly cleaned before use. Washing with 10% alcoholic hydrochloric acid followed by chloroform is most suitable for this purpose.

The method can not be applied for the analysis of sea water.

Procedure (1st extraction):

Requisite accessories: 2 x 2 separations funnels 100 mL (REF 916 64), piston pipette with tips
Pour into two separate separation funnels:

Test sample	Blank value
50 mL test sample (the pH value of the sample must be between pH 4 and 13)	50 mL distilled water
2 mL R1, mix	2 mL R1, mix
1 mL R2, mix	1 mL R2, mix
20 mL organic phase shake for 1 min, allow to separate	20 mL organic phase shake for 1 min, allow to separate

Shake evenly. Vigorous shaking will cause an emulsion to be formed, consequently resulting in errors.

Procedure (2nd extraction):

Pour into two other separate separation funnels:

Test sample	Blank value
50 mL distilled water	50 mL distilled water
1 mL R3, mix	1 mL R3, mix
add lower organic phase from the 1st separation funnel shake for 1 min	add lower organic phase from the 1st separation funnel shake for 1 min

After phase separation filter each of the lower layers through funnels with wadding into cuvettes and measure. Too much wadding produces inaccurate test results.

Measurement:

For NANOCOLOR® photometers see manual, test 1-32.

Photometers of other manufacturers:

For other photometers verify factor for each type of instrument by measuring standard solutions.

Interpretation:

Anionic detergents refer to dodecylbenzenesulphonic acid methyl ester. To analyze anionic detergents of known composition, the following correction is necessary:

$$\text{Test result} = \text{Measured value} \times \text{EW/MBAS}$$

EW = equivalent weight of substance to be determined

MBAS = equivalent weight of MBAS (= 342)

Disposal:

Organic phase must be collect for waste disposal (chlorinated hydrocarbons). The contents of separation funnels can be washed into drain with plenty of water. Please observe local regulations concerning of waste.