Colorimetric test for Chloride determination in food products
5 x 80 mL R1 + 1 x 20 mL R2 + 1 x 5 mL R3
(200 assays for manual application, 2000 assays on biochemical analyzer)

For in vitro *use only*
Store between 15 and 25 °C

Principle

The ions Chloride in the sample react with ions mercury and release an equivalent quantity of ions thiocyanate that give with ions ferric a red complex. The intensity colour of complex is proportional at concentration of chloride in the sample.

Assay specifications

- Wavelength: 500 nm (470 - 520 nm)
- Pathlength:1 cm
- Reading: against blank reagent
- Temperature: 37 °C
- Method: end-point
- Reaction: 5 minutes
- Sample/reagent: 1/100

Reagents

1: Mercury thiocyanate 2.2 mmol/L, Ferric nitrate 20 mmol/L; 5 bottles of approx. 80 mL

2: Reagent Blank: approx. 20 mL

3: Standard Chloride, 4.0 g/L (113 mmol/L), NaN_3 < 0.1%, approx. 5 mL

Let reagents reach the working temperature before use.
This product has been formulated for in vitro diagnostic use. In addition to the possible risk indications, the reagent can contain preservatives (as sodium azide or others), which total concentration is lower than the limits mentioned in Dir. 67/548/CEE e 88/379/CEE and following modifications regarding classification, labelling and packaging of dangerous preparations (Reagents). However, it is recommended to handle the reagents carefully, avoiding ingestion and contact with eyes, mucous membranes and skin; to use reagents according to good laboratory practice. On the material safety data sheet are detailed the operating procedures for the manipulation of this product. Material safety data sheet can be supplied on request.

Stability

The reagents are stable up to the expiry date mentioned on the labels, stored at 15 - 25 °C, if closed and kept in their intact primary container, if not exposed to heat sources and/or pressure variations.

Stability after the first opening
The product is stable up to the expiry date mentioned on the labels after the first open if stored at 15 - 25 °C.

Sample preparation

- Wine can be used directly.
- Use colorless, clear and quite neutral liquid samples directly if Chlorides concentration is between 2.8 and 4.2 g/L (80 - 120 mmol/L); otherwise, dilute with water to reduce it in measuring range (see linearity).
- Filter or centrifuge turbid solutions.
- Degas samples containing carbon dioxide.
- Alkaline samples have to be adjusted until approx. pH 8 is reached.
- Strongly colored samples have to be treated with PVPP (polyvinylpolypyrrolidone e.g. 1 g/100 mL sample).
- Crush and homogenize solid samples, weigh out appropriate sample amount and extract with water.

Procedure

Pipette into cuvettes:	Reagent Blank	Standard	Sample
Reagent 1	2000 µL	2000 µL	2000 µL
Reagent 2 (blank)	20 µL	-	-
Reagent 3 (Standard)	-	20 µL	-
Sample	-	-	20 µL
Mix carefully. After 5 minutes read the absorbance of the standard and of the sample against the reagent blank.			

Calculation of results

$$\Delta A = A_{\text{sample or standard}} - A_{\text{reagent blank}}$$

Since the concentration of the standard is set at 4.0 g/L (113 mmol/L), the calculation is as following:

$$C_{\text{sample}}\,[g/L] = 4.0 \times (\Delta A_{\text{sample}} / \Delta A_{\text{standard}})$$

Performance data

1. Linearity: the test is linear between 2.8 and 4.2 g/L (80 - 120 mmol/L). Concentration of chloride lower than 2.8 g/L (80 mmol/L) are not reliable. For concentration of chloride out of this range, dilute the sample with distilled water in the mentioned ranges; repeat the determination and multiply the result by the dilution factor.
2. Applications on routine analyzers may be totally different from what developed as manual determination; in addition, the procedures are specific for each analyzer.
3. A lot of factors, as ambient temperature, the working reagent temperature, wash accuracy and the type of spectrophotometer, may affect the tests performances.
4. Do not mix reagents from different production lots.
5. A proportional variation of the reaction volumes does not change the result.
6. Waste disposal: Observe all federal, state and local environmental regulations for waste disposal.

Disclaimer

The data corresponds to our present state of technology and provides information on our products and their uses. R-Biopharm makes no warranty of any kind, either expressed or implied, except that the materials from which its products are made are of standard quality. Defective products will be replaced. There is no warranty of merchantability of this product, or of the fitness of the product for any purpose. R-Biopharm shall not be liable for any damages, including special or consequential damage, or expense arising directly or indirectly from the use of this product