



KYORITSU

PACKTEST
ION SELECTIVE

INSTRUCTIONS

Formaldehyde

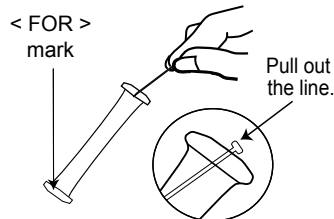
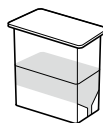
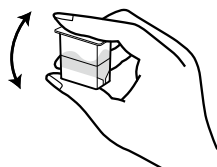
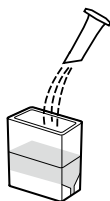
Model WAK- FOR

By MBTH Color Comparison Method

Reagent: 3-Methyl-2-benzothiazolinone-hydrazone Hydrochloride

Range: 0 - 2 mg HCHO/L (ppm)

How to use



(1) Fill the Cell (PACKTEST Square Cup) up to the first line (1.5 ml) with sample. Add the content of 1 small pack.

(2) Put on the cap and shake the Cell 5~6 times, until the content dissolves.

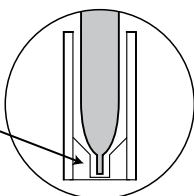
(3) Wait for 3 minutes.

(4) Remove the line to clear the aperture from the top of the tube.

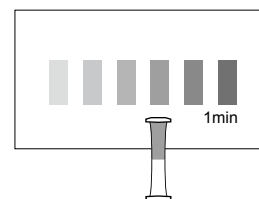
(5) Press the sides of the tube to expel approximately half of volume. Maintain pressed.

(6) Immerse the tube in the sample. Release the sides to fill the tube up to the half. Shake the tube lightly a few times.

insert the PACKTEST in the groove, as shown.



(7) After 1 minutes, put the tube on the color chart as shown and compare with the standard colors.



How to read the test

After the reaction time, compare the color of the tube with the standard colors. The nearest color indicates the measured value of the sample. A color between two standard colors indicates a value between the two standard values.

CAUTIONS

1. A concentration higher than 500 mg/L will reduce the developed color. If you expect high concentrations, dilute the sample with distilled water before measurement.
2. The normal pH range is 5 - 8. If necessary, adjust the pH with diluted sulfuric acid or sodium hydroxide solution.
3. Ensure that PACKTEST tube is filled up to the half.
4. Partially undissolved reagent will not affect the measurement.
5. Keep sample temperature in the range 15 - 40°C. Lower temperature necessitates longer reaction time.
6. Read the test under a daylight type lamp.
7. Do not spill the tube content. Replace the line into the tube hole.

Care in handling of PACKTEST before and after use

Keep PACKTEST in a cool, dry and dark place.

PACKTEST should be thrown with burnable garbage. Conform to the legislation of waste management.

Use a package as soon as possible after opening.

First Aid Measures

- Eye contact → Immediately rinse eyes with water for at least 15 minutes. Consult a physician.
- Ingestion → Immediately Consult a physician.
- Skin contact → Immediately flush skin with water.

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PACKTEST Formaldehyde

Interferences

Standard colors were determined from standard solutions. However, coexisting substances will cause inaccurate results. The list below reports ion concentrations under which ones interferences are insignificant:

≤ 1000 mg/L : As^{3+} , B^{3+} , Ba^{2+} , Ca^{2+} , Cl^- , K^+ , Mg^{2+} , Na^+ , Ni^{2+} , NO_3^- , SO_4^{2-} ,

≤ 250 mg/L : NH_4^+

≤ 50 mg/L : Al^{3+} , Fe^{2+} , Fe^{3+} , Pb^{2+} , PO_4^{3-}

≤ 20 mg/L : Cu^{2+} , F^- , NO_2^-

≤ 10 mg/L : Phenol

≤ 5 mg/L : Zn^{2+}

≤ 2 mg/L : CN^-

The Formaldehyde PACKTEST is not suitable for sea water samples.

Formaldehyde and Sick Building Syndrome

Formaldehyde, widely used in resins to manufacture home materials, is released as gas in the ambient air. Formaldehyde gas is cited as the main cause of Sick Building Syndrome (SBS): Occupants of a building experience acute health effects. Most of the symptoms are associated with acute discomfort which include headaches, eyes, nose, and throat irritation. These symptoms seem to be linked to the time spent in a building.

In the AIR, Quality Guidelines defined by World Health Organization (WHO), an average value less than 0.1 mg/m^3 (= 0.08 ppm) is recommended.

The formaldehyde concentration in the air varies according to the room temperature, humidity and other factors. Concentration increases with higher room temperature and humidity, decreases with a higher air turn over.

Simplified measurement of indoor formaldehyde concentration

For the measurement of formaldehyde gas, an advanced and costly measuring apparatus is usually used. However, the Formaldehyde PACKTEST allows to measure an approximate formaldehyde concentration of the air.

[How to measure]

- (1) Fill the provided cup up to the first line (1.5 ml). Leave it for a given time without the cap on the sampling place, for example: on a shelf, drawer, etc. the formaldehyde gas is gradually dissolved in the water.
- (2) After the sampling time, measure the formaldehyde concentration of the sampling water following the instructions on the front. Use the Table 1 below to estimate the approximate indoor formaldehyde concentration.

Table 1: Relationship between formaldehyde concentration measured by PACKTEST and formaldehyde concentration in the air.

Sampling time	Formaldehyde concentration measured by PACKTEST (ppm)	Estimated formaldehyde concentration in the air
1 hour	0.2	2.5 mg/m^3 (= 2 ppm)
8 hours	0.2	0.25 mg/m^3 (= 0.2 ppm)
24 hours	0.15	0.13 mg/m^3 (= 0.1 ppm)