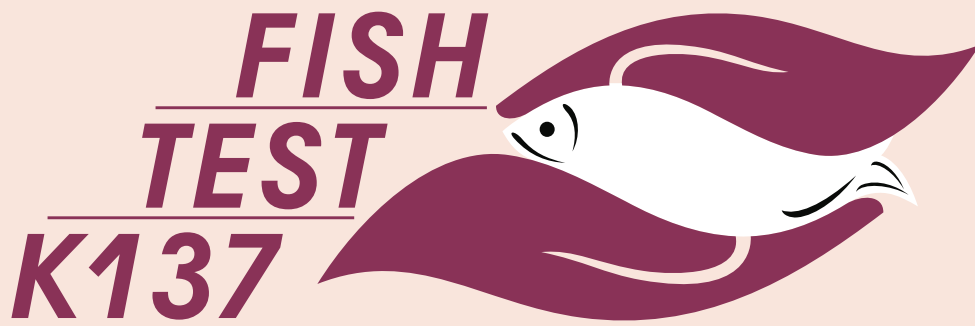


HiMedia's HiRapid Formalin Test Kit (K137)

Fish may be adulterated by formalin
(formaldehyde) due to faulty trade practices.
Detect it fast with HiMedia Kit



ICAR - CIFT

Cochin

Technology

**For rapid detection of
Toxic Formalin (Formaldehyde) in fish**



2 minute test can tell the difference between Toxic and Safe food

Formaldehyde Facts

Natural occurrence of Formaldehyde

Formaldehyde occurs naturally in the environment. As a metabolic intermediate, formaldehyde is present at low levels in most living organisms. It can be therefore found naturally in small amounts in a wide range of raw foods, including fruits and vegetables, meat, fish, crustacean, dairy products, etc. High levels of formaldehyde up to 300ppm to 400ppm are found naturally in dried mushrooms including shiitake.

High natural formaldehyde is reported in Bombay duck & long frozen stored fish.

Toxicity of Formaldehyde and human health

Formaldehyde is classified as “probably carcinogenic to humans” under Group 2A by IARC. Ingestion of a small amount of formaldehyde is unlikely to cause any acute effect. Acute toxicity after ingestion of large amount can cause severe abdominal pain, vomiting, coma, renal injury and possible death.

Metabolism of Formaldehyde

Formaldehyde reacts at the site of first contact and/or is eliminated rapidly as formic acid in the urine or as CO₂ in the expired air or it enters the carbon-1 pool in the body. Dermal absorption should differentiate between penetration through the skin possibly leading to systemic effects and penetration through and into the skin possibly leading to local effects.



Formaldehyde Adulterations

HiMedia have launched ICAR CIFT approved **Fish Adulteration Test Kits**.

The HiRapid Formalin Test Kit (for Fish), K137 is recommended to detect traces of formalin (formaldehyde) adulteration in fish, seafood etc. It is a rapid test strip kit that is simple and user friendly.

Background

India's domestic fish market is reported to be selling formaldehyde adulterated fishes, for long term preservation especially in markets located far away from landing centres or production sites. Such fishes when consumed are very harmful to human health and lead to health hazard.

Seafoods, fish and shell fish are contributing significantly to human needs. Fish is one of the most important animal source of food for healthy diet. Frozen sea foods are most traded products in domestic and international market. According to Indian and international regulations, they should be transported only by ice. Hence they fall prey to adulterations.

Use of substance other than ice to extend the keeping quality is fraudulent practice. In order to reduce the cost of ice, ammonia is often used by ice manufacturers which retards the melting of ice. Cheaply available over the counter substances have attracted traders to use hazard chemicals like formaldehyde & formalin that are also added as preservatives for enhancing the shelf life.

These can enter human body on ingestion or exposure while handling and cause serious health problems. On exposure it can cause eye irritation, respiratory tract irritation, larynx constraint, skin allergies, worsening of asthma.

The increasing consumer concern for food quality and safety issues has raised urgent demand for rapid, sensitive and portable screening methods.

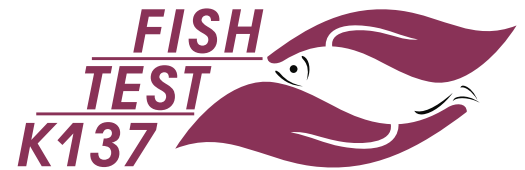
Formaldehyde adulterations can be immediately noticed by its physical appearance, as fish will be stiff and not tender, have rubbery meat, hard scales, red gills and clear eyes. It will also not carry typical smell.

Chemical Detection of Formaldehyde can be done using HiMedia's HiRapid Formalin Test Kit (K137).



How to Use...

Formaldehyde detection kit



1 Prepare reagent **F-2** first by flipping open the dropper lid from bottle **F-2**, empty the contents of vial **F-W** in it.



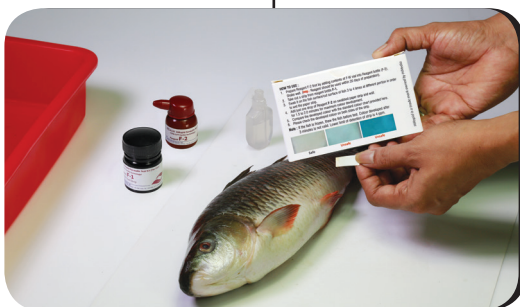
2 Replace the dropper lid, and shake well. (**Imp.** Reagent should be used within 20 days of preparation).



3 Take out a strip from Reagent bottle **F-1**. Swab it on the fish surface/cut surface of fish* 3 to 4 times at different portions in order to wet the paper strip.



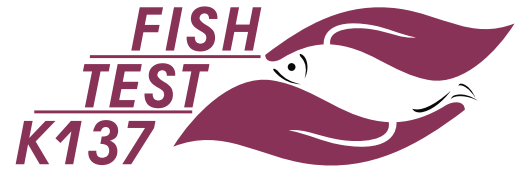
4 Add just one drop of Reagent **F-2** on swabbed paper strip and wait for 1.5 to 2.0 minutes for maximum colour development.



5 Compare the developed colour** with the standard colour chart provided on the box.

* If the fish is frozen, thaw the fish before test
** Colour developed after 2 minutes is not valid. Lower limit of detection of strip is 4 ppm.





Advantages

- It is nondestructive, simple and economical
- Saves time and fast interpretation
- Does not require huge quantity of toxic chemicals

Features

- Can be performed by consumers and general public
- Simple, reliable and rapid
- Detects the contaminants within few minutes
- Visual Interpretation by colour change
- Visual –Test Kit for detection of formaldehyde on skin and dermal layers of fish, shell fish and other seafoods

Protocol for using Test Kit

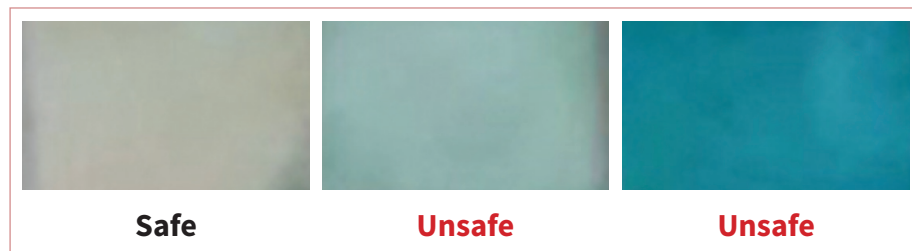
Kit contains Reagent Bottle, Test strips and Colour Comparator chart.
Each kit is sufficient for performing 25 tests.

Four Easy steps

- Step 1: Prepare Reagent **F-2** before the test
(Reagent should be used within 20 days of preparation).
- Step 2: Take out the strip from bottle **F-1** and rub on fish surface/
cut surface to wet the paper strip.
- Step 3: Add one drop of Reagent **F-2** on swabbed paper strip.
- Step 4: Check for colour development within 2 minutes.

Colour Development	Results	Interpretation
Yellowish colour	Fish free from Formaldehyde/ Formalin	Fish safe for consumption
Green / Dark Bluish colour	Formaldehyde/ Formalin present	Fish unsafe for consumption

Note : If the fish is frozen, thaw the fish before test.
Colour developed after 2 minutes is not valid.
Lower limit of detection of strip is 4 ppm.





For Life is Precious

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