

LITMUS

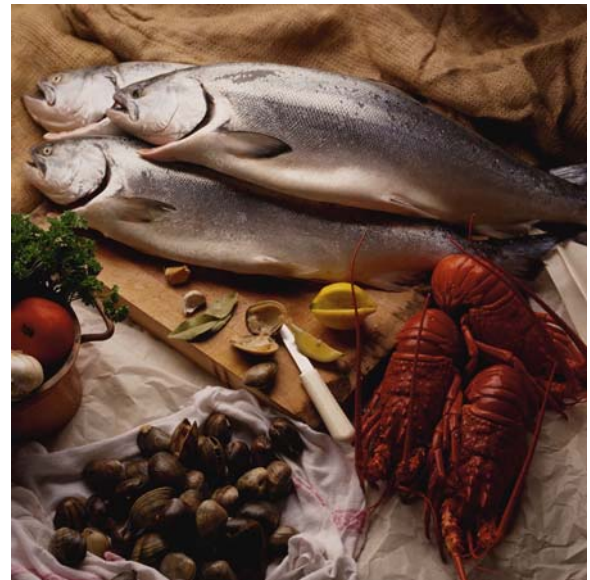
fqi

**Breakthrough Technology To
Measure Seafood Quality**

LITMUS FQI

Food Quality for the World

www.litmusfqi.com





LITMUS FQI - FOOD QUALITY INDICATOR

Seafood is one of the most difficult foods to keep fresh. From the day they are harvested until they appear on the kitchen table, keeping seafood fresh is a challenge. Frozen or packaged fish present an even tougher challenge.

Being able to identify the quality of seafood is vitally important for – bulk producers and processors, wholesalers, brokers, exporters, importers, shippers, at home, in the restaurants and in supermarkets. Annually in the U.S.A., 70 - 80 million people suffer gastro-intestinal illnesses, 300,000-400,000 are hospitalized, and approximately 5,000 die! The current methods of determining food quality are inadequate.

The two current methods for evaluating the quality of seafood are subjective, indirect and **DO NOT** indicate food quality: 1) Smelling, touching and visual examining food with trained specialists is inherently subjective and very little of the food supply is actually inspected. 2) Time and Temperature Indicators (TTIs) record the time and temperature exposure of the seafood during transit. It addresses only the intermediate supply chain and is **NOT** an indicator of direct food quality or fitness for human consumption.

LITMUS FQI has developed a superior method to determine fish and shrimp quality utilizing breakthrough technology. LITMUS FQI sensors directly measure the level of decomposition in shrimp and most shellfish and is an effective way to indicate spoilage and quality of seafood. The sensors are inexpensive, quick and easy to use and repeatable.

HOW LITMUS FQI SENSORS WORK

LITMUS FQI sensors are in four configurations, designed for meeting all the needs of the entire seafood distribution system from harvesting to the kitchen table.

The sensors are specially calibrated with proprietary and patented developing agents that “measure” the concentration of decomposition gases and are designed to change color when the seafood is no longer of quality for human consumption.

LITMUS FQI sensors for fish and shrimp are available for both the commercial markets and consumer applications. Pork, poultry, beef and cooked food LITMUS FQI sensor technology is planned for introduction in the first quarter of 2008. The choice of an appropriate sensor configuration is determined by the customer’s particular need. LITMUS FQI sensors are not currently effective on scombroid fish [salmon, tuna, mahi-mahi, catfish, etc.]



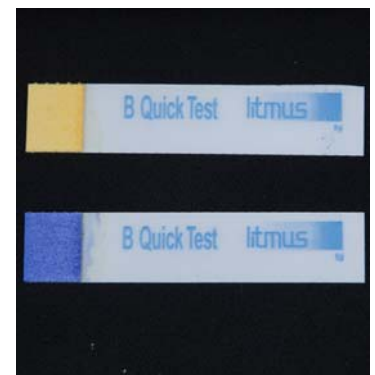
FOUR LITMUS FQI SENSORS ARE NOW AVAILABLE!

BULK PUMP AND STRAW SENSORS - used primarily by regulators, brokers, laboratories, processors and anyone receiving large quantities of seafood in bulk quantities. A small pump pushes a measured amount of air through the sample and the pump greatly speeds up the release of volatile amine compounds and forces the gases through the LITMUS FQI bulk sensor. The amine compounds change the color of the sensor [straw] from yellow to blue and the length of color change is a direct measure of the quality of the product. The results are quantitative and can be viewed quickly, usually within three minutes. This provides accurate information pertaining to the decomposition of the whole shipment, carton, bag, or block and not just a small sampling. The test is inexpensive, quick and easy to use, with no special training requirements so multiple tests can be taken with objective results. The benefits are more sales via assured higher quality, reduced liability and less shrinkage via incoming quality control.



SHIPPING SENSORS - a credit card sized sensor is inserted into closed shipping containers at the point of origination. It is effective for frozen, on ice, individually frozen and in the round shipments which are sealed in a bag in a closed container. The results are qualitative and are designed for "long term" deliveries of one week or more. Developed for longer term deliveries and is ideal for international exporters, importers, storage facilities, processors to wholesalers and retailers, and cross country deliveries. If the sensor indicates "Suspect", a Bulk Pump and Straw test could be used to determine if the shipment should be frozen, cooked or delivered to a client that could use the fish or shrimp immediately, salvaging the product before it becomes unsafe. This early detection sensor provides an opportunity to recoup potential significant losses by better managing the food chain.

QUICK STICK SENSORS - used at multiple stages throughout the seafood supply chain. The Quick Stick quality sensor test for freshness requires only 30 minutes or less and provides a quick qualitative assessment of freshness. Any color change during the thirty minute test is "Suspect". Seafood that is "Suspect" can be quantitatively evaluated with the Bulk Pump and straw procedure. This sensor is perfect for the handlers of shipments who want a quick and accurate determination of the quality of a shipment, delivery or before offering products for sale.



RETAIL SENSORS - are for retail outlets that sell seafood in case-ready packages. Retail sensors suit the needs for suppliers and retailers wanting to build premium brand equity and customer loyalty into their products. The quality of their fish and shrimp is assured when this label is included in their packaged product. This differentiation means more sales [exclusivity], higher margins for assured quality, reduced liability and public safety. The label is easy for the customer to understand: Yellow is "Best", any other color "Do Not Eat".

LITMUS FQI TECHNOLOGY

LITMUS FQI's technology was developed after years of research at the U.S. Food and Drug Administration's National Center for Toxicological Research. These research scientists were presented with two awards from the FDA for the breakthrough. First was the 1999 Award for Excellence in Technology Transfer, followed by FDA's Award of Merit – the highest honor bestowed by the federal agency. The FDA commended the scientists for "significant and exceptional performance benefiting the public by designing and building a product that is a simple, quick and inexpensive method for determining the decomposition of food products".

ORDER LITMUS FQI SENSORS

Commercial validation and distribution is **Now Available** for LITMUS FQI seafood sensors. Companies interested in learning more about how this system can efficiently and cost-effectively warn of seafood spoilage are encouraged to contact LITMUS FQI. Inquiries on additional sensors, available beginning in the First Quarter 2008, including beef, poultry, pork, produce and cooked foods are encouraged. LITMUS FQI also welcomes the opportunity to develop sensors for applications beyond the food sector.

For more information about LITMUS FQI:

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