



Haze measurement tools can help you determine whether your fish oil ingredients are fresh. Image Source: Unsplash user Jakub Kapusnak

In 2012, fish oil and other omega-3 fatty acid supplements were the most popular natural product used by consumers in the United States and the number of fish oil users is still growing.¹ Between 2007 and 2012, about 8 million more adults began using fish oil supplements to relieve health symptoms ranging from arthritis to high blood pressure. However, because so many people rely on fish oil supplements and [fortified foods](#) to improve their health, it's vital that vitamin manufacturers maintain strict quality standards. Taking an oxidized or spoiled fish oil pill could result in greater health problems for your customers and profoundly damage your brand's reputation. By using haze and color measurement to test your oil in advance, you ensure that your customers only get the freshest, purest supplements possible, allowing your company to change people's lives for the better.

Haze Measurement Can Detect Spoilage

There are many tests that can help you determine fish oil quality, one of which involves haze measurement. A spectrophotometer that's capable of measuring haze can tell you a great deal about the quality of your fish oil before you pour it inside of your gel capsules. Generally, you want to purchase bulk fish oil that appears clear at room temperature; cloudiness may be a sign of spoilage. However, high-quality, unspoiled fish oil contains saturated and monounsaturated fatty acids, which may appear cloudy when they are exposed to the cold. This is not the result of low-quality oil; in fact, supplements that contain fresh, whole fish oil experience this freezing problem more so than those with added fillers like lemon or synthetic triglyceride oil.²

Just because fish oil naturally contains hazy fatty acids doesn't mean that haze measurement tests are completely useless for quality control. Excessive cloudiness at room temperature is still a sign of spoiled fish oil. Knowing this, you should always test your raw ingredients for cloudiness throughout

the manufacturing process. When you first receive raw fish oil from your preferred source, you need to set a base haze measurement standard to ensure that the oil isn't too old to use. Fish spoils relatively quickly compared to other perishables, so it's common for fish oil sources to mistakenly sell [vitamin companies](#) spoiled ingredients.³ When you first receive your oil shipments, you should use a spectrophotometer to test the oil's haze at room temperature. If the oil is cloudier than your haze standard, you should request a new shipment.



A high-quality fish oil capsule should be clear, not cloudy, at room temperature. Image Source: Pixnio user PPD

Fish Oil Color and Quality Are Linked

In addition to haze measurement considerations, color could mean the difference between a high-quality fish oil supplement and one that could make a consumer ill.⁴ As such, you'll need to test for two different color standards when you craft your fish oil supplements: natural color and oxidation.

First, it's important to remember that different types of fish will secrete oils that are slightly different in color, depending on the species. For instance, salmon flesh has a naturally pink-orange hue because wild salmon eat a great deal of krill. If you use whole, wild salmon in your fish oil supplements, your oil will likely be a vibrant golden orange color. By contrast, if you use a whole fish with white flesh, your supplements will appear more straw yellow in color. To test properly for color, you'll need to consider what the natural colors of the fish are and compare it to the oil you receive from your source.

You also need to test your fish oil for signs of oxidation. In addition to a cloudy appearance, oxidized fish oil will sometimes have a rancid smell, but this isn't always obvious in the early stages of spoilage. Using a spectrophotometer, you can detect even the slightest change of color in your oil. As the oil oxidizes, it will begin to turn brown or even red in color. If you detect these hues with your spectrophotometer, you might consider ordering a new batch of oil, as the test batch was likely

exposed to the air for too long or is older than your source claims. You can also analyze whether your oil is uneven or splotchy, which is also a sign of oxidation. Fresh oil should be consistent, and golden yellow, rather than brown or red, in color.



Different colored fish will produce different colored oils. Image Source: Unsplash user chuttersnap

Spectrophotometers Are Capable of Measuring Haze and Color

Choosing a spectrophotometer that is capable of both haze and color measurements can greatly improve the efficiency of your quality control protocols. The [Vista spectrophotometer](#) can measure both haze and color simultaneously, meaning that you only have to buy one tool for both types of measurements and you only have to test your samples once. With this tool, you can measure the transmission color [of food and vitamin products](#) using color scales such as Pt-Co/Hazen/APHA, Gardner Colour and four different Pharmacopoeia standards (from the U.S., E.U., China and Japan). This instrument is designed with [longevity, accuracy, and flexibility](#) in mind, making it the perfect choice for the ever-evolving vitamin and supplement industry. To use this tool, you simply [install it once](#), and all of the haze measurement and color scales you need come pre-equipped in the device's software. There's no need to install additional tools to get started.

HunterLab Quality

[Contact HunterLab](#) today to get started on testing your fish oil quality with the Vista spectrophotometer, or any other haze and color measurement tools that you may need. We have more than 60 years of experience working within the food industry to ensure that companies produce the highest quality products on the market. Since each vitamin and supplement company has slightly different needs, our experts will walk you through exactly what you need to measure your fish oil capsules properly, including creating a customized testing protocol for every step of the manufacturing process. Our superb customer support and decades of experience have allowed us to become one of the leading spectrophotometer providers in the nation.

1. "Use of Complementary Health Approaches in the U.S.", September 24, 2017, <https://nccih.nih.gov/research/statistics/NHIS/2012/natural-products/omega3>
2. "The Definitive Fish Oil Buyer's Guide", May 24, 2010, <https://chriskresser.com/the-definitive-fish-oil-buyers-guide/>
3. "How to Detect Spoiled Fish Oil", <http://healthyeating.sfgate.com/detect-spoiled-fish-oil-5039.html>
4. "Fish As Food, Volume 1", December 2, 2012, https://books.google.com/books?id=yI9o_N3hGrgC&dq=color+of+fish+oil+depends+on+fish&source=gbs_navlinks_s