

OXIDATION TESTING

Research and analytical services.



ABOUT LIPID ANALYTICAL LABS INC.

Lipid Analytical Laboratories was established in 1991 on the work of Dr. Bruce Holub (Human Health and Nutritional Sciences, University of Guelph, Professor Emeritus) with a focus on the advancement Omega-3 Fatty Acids and their associated health benefits.

Lipid Analytical Laboratories is the only commercial laboratory in Canada specializing exclusively in the analyses of lipids (including different lipid forms including but not limited to individual neutral lipids, phospholipids, sterols, amongst others) and their Fatty Acid components.

Our particular specialty is the analyses and quantitation of various food products and nutritional supplements for their Omega-3 Fatty Acid content.

Lipid Analytical Laboratories routinely provides lipid/fatty acid/omega-3 analyses in support of various academic, governmental, and commercial trials.

As such, Lipid Analytical Laboratories along with its analytical team members have been named as co-authors and officially acknowledged in a number of peer-reviewed papers which have been published in leading academic journals.



METHOD SUMMARY

The degree of oxidation is an essential factor for the quality of fat or oil. Lipids are chemically unstable and will readily undergo free-radical chain reactions that work to deteriorate lipids and produce oxidative fragments; some of which are volatile and are perceived as off-flavour or rancid. These methods are applicable to crude and refined oils (animal, vegetable, marine) as well as various products derived from them.

Peroxide Value

Primary oxidation in oil mainly forms hydroperoxides, which are measured by this test. Hydroperoxides react with iodide ions to form iodine and the Peroxide Value is determined by titration. In general, the lower the peroxide value, the lower the oxidation state of the oil. A low Peroxide Value helps to ensure high product quality and longer shelf-life stability.

Data reporting: meq/kg

Reference: AOCS Official Method - Method Cd 8b-90

Anisidine Value

The secondary stage of oxidation occurs when the hydroperoxides decompose to form carbonyls and other compounds, in particular aldehydes which are often what gives an oil a rancid smell. The analysis method for Anisidine Value determines the amount of aldehyde (principally 2-alkenals and 2,4-dienals) in oils and fats with a spectrophotometer.

Data Reporting: A.U. (Arbitrary Units)

Reference: Modified AOCS Official Method – Cd 18-90

Acid Value

The Acid Value is a measure of the free fatty acids present in the fat or oil. The increment of free fatty acids indicates hydrolysis of triglycerides (and other lipid classes). The method is used to determine the free acid value in fats and oils is based on titration.

Data Reporting: mg KOH/g

Reference: Modified AOCS Official Method – Cd 3d-63

Sample Requirements: Please contact us with regards to your specific sample type.

Email: info@lipidanalytical.com

WHY WORK WITH US?

- Over 30 years of experience.
- Excellent results – AOCS Laboratory Proficiency Program – GOED Nutraceutical Oils
- Fast Sample turn-around-time.
- Accreditation for ISO17025 in progress with Standards Council of Canada (SCC) as of 2021.
- Assisted with numerous Commercial/Academic/Governmental Trials.



CONTACT US



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