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Total Oxidation Value (TOTOX) Statement

TOTOX stands for Total Oxidation Value and serve as a measure for the freshness of an oil. It is calculated as the sum of 2 times peroxide value plus anisidine value. The peroxide value reflects primary oxidation levels, while the anisidine value assesses secondary oxidation levels.

Peroxide value is measured for every batch of Zooca® Lipids (Zooca® Calanus® Oil), but anisidine value cannot be determined due to the oil's strong ruby red color. The spectrophotometric methods used for anisidine analysis are affected by this color, leading to inaccurate results. This information is supported by the GOED Technical Guidance document for Calanus Oil (https://goedomega3.com/Technical Guidance Document Calanus Oil) and the white paper on Oxidation in Omega-3 Oils prepared by GOED and the Council for Responsible Nutrition (https://goedomega3.com/Oxidation in Omega-3 Oils). GOED recommends anisidine analysis only for omega-3 oils in triglyceride or ethyl ester form, which do not contain natural pigments or other antioxidants.

Zooca® Lipids, being primarily composed of wax ester and containing high amounts of astaxanthin, falls outside the recommended scope for anisidine analysis. Previous attempts to analyze anisidine levels in Zooca® Lipids revealed abnormal high variations in parallels and displayed lack of a natural trend in the analytical results, indicating that the analysis was ineffective for this oil.

To prevent oil oxidation, several measures can be taken, including the use of antioxidants to slow the rate of oxidation, limit exposure to ambient air during manufacturing, and storing the oil in containers filled with inert gases like nitrogen. Zooca® Lipids naturally contains a high amount of astaxanthin, acting as a powerful antioxidant to protect the oil from oxidation. Additionally, Zooca® Lipids are produced using a closed manufacturing process that minimizes exposure to air and is stored in containers filled with nitrogen. The measured peroxide values in Zooca® Lipids have consistently been low.

Best regards
Calanus AS / Zooca® - The Calanus Company

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This statement is provided in good faith and is based on current knowledge and information available to Calanus AS at the time of issue. The information is subject to change without notice.