

## Vitamin Testing - International Competence

In compliance with Eurofins' overall strategy an international competence centre for vitamins has been established in Europe - offering a wide range of vitamin testing for industrial customers within foodstuffs, animal feed, food supplements, and pet food.

Several Eurofins laboratories have a long-standing tradition for testing of vitamins in specific matrices. To improve our services and to meet future requirements in a fast growing market, the vitamin testing activities are concentrated at our laboratory in Kolding, Denmark. The new vitamin centre employs an international team of highly experienced chemists, microbiologists, and laboratory technicians - and applies state-of-art equipment and IT tools for management and communication. Through the Eurofins network of laboratories, this site will service customers all over Europe.

### Advantages of Specialisation

Concentrating all vitamin testing in one single location enables to provide the clients with reliable documentation based on internationally recognised reference methods at very attractive turnaround times and competitive prices.

In addition to standard tests, the laboratory can offer - on the customers' request - the implementation, optimisation, and validation of customer specific methods.

### Spectrum of Standard Tests

For standard testing, mainly USP, AOAC, and EN/ISO methods are applied as summarised below. This ensures reliable documentation for the international market.

Matrices validated for standard tests comprise but are not limited to

- foodstuffs
- raw materials for the food industry

- feeding stuff and compound feeding stuff
- pet food
- food supplements
- cosmetics
- vitamin preparations and tablets



### Quality and R&D

Reliable and correct results are the main concerns for the customer when choosing a laboratory for vitamin testing. Eurofins gives highest priority to quality - applying a well implemented quality assurance system and validated methods, daily quality performance tests, extensive use of reference materials (CRM, SRM), and participation in international proficiency tests, and - of course - the laboratory is accredited according to ISO 17025. Besides the technical quality, the team is very aware of our service quality - only results delivered on time meet the quality target.

In addition, having all vitamin testing activities based at a single location makes it possible to

focus on R&D work. Development of new and optimisation of existing methods is continuously ongoing in order to meet future requirements for testing and documentation at an international level.

### A Competent Partner

Eurofins is not only a supplier of laboratory services. The experts form a partnership with their customers and are pleased to discuss and advise them on analytical strategies and choice of methods - just as they offer assistance and experience with the interpretation of results obtained. The knowledge and experience with legal regulations, product design, and quality management is also appreciated by the customers. Working closely together is indeed the best guarantee of value for money.

| Parameter   | Method(s)  | Principle |
|---|------------|-----------|
| <b>Fat-soluble vitamins</b>                                     |            |           |
| Vitamin A (all-trans retinol & 13-cis retinol)                  | EN         | HPLC      |
| β-Carotene  | EN         | HPLC      |
| Vitamin D <sub>2</sub> /D <sub>3</sub> (chole-/ ergocalciferol) | EN, USP    | HPLC      |
| Vitamin E, enriched (α-tocopherol)                              | EN, USP    | HPLC      |
| Vitamin E, natural (α-, β-, γ-, δ-tocopherol & α-tocotrienol)   | EN         | HPLC      |
| Vitamin K <sub>1</sub> (phyloquinone)                           | prEN, USP  | HPLC      |
| <b>Water-soluble vitamins</b>                                   |            |           |
| Vitamin B <sub>1</sub> (thiamin)                                | prEN, USP  | HPLC      |
| Vitamin B <sub>2</sub> (riboflavin)                             | prEN       | HPLC      |
| Vitamin B <sub>3</sub> (pyridoxine, pyridoxamine & pyridoxal)   | EN, USP    | HPLC      |
| Vitamin B <sub>12</sub> (cyanocobalamin)                        | AOAC, USP  | MIBi      |
| Niacin (nicotinic acid & nicotinamide)                          | AOAC, USP  | MIBi      |
| Pantothenic acid  | AOAC, USP  | MIBi      |
| Biotin  | FDA, USP   | MIBi      |
| Folic acid  | AOAC, USP  | MIBi      |
| Vitamin C (ascorbic acid & dehydroascorbic acid)                | prEN, AOAC | HPLCC     |

HPLC : High Performance Liquid Chromatography Method

MIBi : Microbiological Method

EN : European Norm of the CEN (Comité Européen de Normalisation)

USP : United States Pharmacopeia

FDA : Method of the US Food and Drug Administration

AOAC: Method of AOAC International (Association of Official Analytical Chemists)

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