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# **NMISA-PT84**

## **Proficiency Testing Scheme**

### **Description**

#### **Vitamin A in Fortified Food**

#### **Matrices**

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## 1 FOREWORD

This is the call for participation in, and description of the NMISA proficiency testing (PT) scheme for the determination of Vitamin A palmitate in fortified food matrices. Participants will be required to report on the vitamin A palmitate for two (2) food matrices. A confidential report will be issued to all participants after completion of the PT scheme. Information on the expected analytes concentration ranges, matrices, as well as dates for distribution and reporting are listed in Table 1.

This forms part of a range of ISO 17043 accredited PT services offered by NMISA. Please consult our website [www.nmisa.org](http://www.nmisa.org) for information on PT schemes on offer. NMISA can also assist with the preparation of traceable gravimetrically prepared spike solutions for benchmarking *ad-hoc* analyses for which commercial PT schemes are not available.

## 2 SCHEME AIMS

This scheme will assist laboratories that routinely analyse vitamin A in food matrices, to monitor their laboratory performance. The PTS allows laboratories to evaluate their accuracy and comparability of measurement results produced; the continued competency of analytical staff; and the maintenance and effectiveness of the current quality assurance systems within the laboratory. In addition, this information may also be used to provide accreditation bodies or clients with objective evidence of laboratory performance.

## 3 PARTICIPATION FEES AND ADDITIONAL CHARGES

The cost of participation in the PT scheme is R 5 000. These rates exclude costs associated with delivery (0% VAT, please note that we are not a VAT registered company). This fee includes the material and a confidential report upon completion.

Since many of the South African participants are located within close proximity to NMISA, the option of collecting the PT scheme samples from NMISA premises is permitted.

*International laboratories will have test samples sent by courier and appropriately packaged to maintain sample integrity. International participants must provide NMISA with any import or quarantine permits that might be required to complete sample delivery well in advance of the shipment date and are liable for any customs or import duties charged.*

Upon registration for participation an official quotation will be provided. Participation is confirmed following receipt of a purchase order and/or proof of payment.

## 4 PT SCHEME DESCRIPTION

The timeline for the PTS is presented in Table 1. Laboratories are requested to report results for as many of the parameters specified as possible, to allow for maximum benefit from the participation. This study is designed to support laboratories routinely performing vitamin A analysis. The levels of the analytes should be easily achievable using analytical methods typically applied. Instructions for proper handling and storage of the samples prior to sample preparation will accompany the PT scheme samples. Participants should adhere to these instructions to ensure sample integrity and comparability of the results.

**Table 1: PTS details for NMISA-PT84 Vitamin A in Fortified Food Matrices.**

| NMISA-PT84 Vitamin A in Fortified Food matrices |  | Sample format  | Distribution/Dispatch | Result reporting |
|---|--|--|-----------------------|------------------|
| <b>Parameters</b>                               | Vitamin A Palmitate<br>(0.05 – 5 mg/100 g)   | 100 g fortified wheat flour<br>100 g fortified vegetable oil | Oct 2022              | Nov 2022         |
| <b>Result Reporting</b>                         | <p>Participants will be required to perform the analysis using their normal laboratory procedures and are required to report <b><u>two results for each parameter measured in each of the samples provided</u></b> .</p> <p>Participants are encouraged to include an uncertainty estimate for each result obtained. The result reporting form will be distributed to participants and will request additional information on the measurement technique and parameters, any recovery correction application, calibration standards used etc.</p>   |  |                       |                  |
| <b>PT conduct</b>                               | <p><b>Assigned value</b></p> <ul style="list-style-type: none"> <li>The assigned value for will be the robust consensus values from expert, ISO 17025 accredited, laboratories.</li> </ul> <p><b>Laboratory performance</b></p> <ul style="list-style-type: none"> <li>Laboratory performance will be evaluated using the z-score</li> </ul> <p><b>Standard deviation of proficiency assessment</b></p> <ul style="list-style-type: none"> <li>The modified Horwitz model will be used to estimate a standard deviation of proficiency assessment. The standard deviation of participant results will also be included in the final PT report for reference and comparison to the Horwitz prediction.</li> </ul> <p><b>PT report</b></p> <ul style="list-style-type: none"> <li>The PTS report will be distributed within 2 weeks following the result submission deadline. Reports will be provided in electronic format only (Adobe Acrobat- pdf) files.</li> <li>The scheme is fully confidential. Each participant will be issued with a unique identification number. For multiple participants within the same laboratory the participating laboratory is required to identify its analysts by a code known only to the laboratory.</li> </ul> |  |                       |                  |

\* Analytes and/or matrix may be changed.