BIO-BASED CONTENT DETERMINATION OF PALM-BASED POLYOLS USING RADIOCARBON TECHNIQUE

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MPOB INFORMATION SERIES • ISSN 1511-7871 • JULY 2019 MPOB TS No. 183

This service offers a determination of bio-based content of palm-based polyols using radiocarbon technique. The amount of the biomass content in a product is defined as the bio-based content (American Society for Testing and Materials, 2008). Bio-based polyols, such as palm-based and soyabean-based polyols, have been significantly incorporated into polyurethane foam formulation (Ain *et al.*, 2016). In some countries, the bio-based content in these biomass-based products needs to be certified, *e.g.* in Japan, where the 'Biomass plastics mark' is used on the biomass plastics to certify the amount of biomass used in the product (Kunioka *et al.*, 2007). Therefore, a method for determining the bio-based content in the bio-based products is very important.

THE TECHNOLOGY

Objective

- To determine bio-based content in palm-based polyols in order to confirm the renewable content of products.

Methodology

A summary of the methodology for determining the bio-based content in palm-based polyols is presented in *Figure 1*.

Method Validation

This method was validated based on ICH Harmonised Tripartite Guideline Validation of Analytical Procedures: Text and Methodology Q2(R1) with respect to:

- Accuracy (recovery and memory tests).
- Precision (repeatability and interlab comparison).
- Linearity and working range (quench curves).

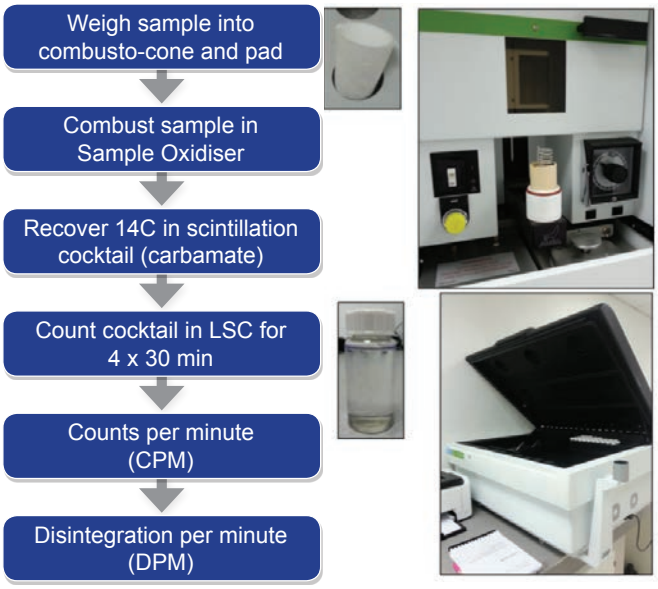

Figure 1. Methodology for determining the bio-based content in palm-based polyols.

BENEFITS AND ADVANTAGES

- A quantitative and standardised method for determining the bio-based content in palm-based polyols.
- Analytical data can be used to certify the bio-based content of the products and to comply with ASTM D6866 for product certification as required by eco-labelling programmes and regulations in certain countries.
- The only laboratory in Malaysia that offers this service.
- Validation of bio-based claims through verification of bio-based content for suppliers, manufacturers or clients.

SERVICE CHARGE

The service charge for this analysis is RM 1000 per sample.

ISSN 1511-7871
9 771511 787001

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