

DETERMINATION OF WATER SOLUBILITY AND PARTITION COEFFICIENT FOR FATTY ACIDS

SITI AFIDA ISHAK; BONNIE TAY YEN PING and ROSNAH ISMAIL



MPOB INFORMATION SERIES • ISSN 1511-7871 • JUNE 2011

MPOB TS No. 104

REACH is a new European Community Regulation on chemicals and their safe use. It deals with the Registration, Evaluation, Authorisation and Restriction of Chemical substances. The new law entered into force on 1 June 2007. The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. REACH has placed greater responsibility on Malaysian manufacturers and exporters of chemicals, chemical products and downstream products that contain chemicals to the European Union (EU) market, in that they have to comply with the REACH regulation. Failure to register will mean that a company will no longer be allowed to manufacture the substance in EU or export it into EU. Under the REACH regulation, the chemical industry is required to submit information on the chemical substances produced (physicochemical properties, toxicity and ecotoxicology properties). A specified number of physicochemical data of a substance are required for REACH registration, and these include water solubility properties and partition coefficient.

Water solubility, also known as aqueous solubility, is the maximum amount of a substance that can dissolve in water at equilibrium, at a given temperature and pressure. This parameter is used in many environmental studies to help determine the fate of chemicals in the environment. Water solubility has been correlated to the partition coefficient, another parameter used to determine the fate of chemicals in the environment. The

partition coefficient is defined as the ratio of the equilibrium concentrations of a dissolved substance in a two-phase system consisting of two largely immiscible solvents (*e.g.* octanol-water).

POTENTIAL TAKERS AND BENEFITS

The service for determining water solubility and partition coefficient will be offered to oleochemical manufacturers. The majority of the substances to be registered under REACH requires a full set of physicochemical data depicting their physicochemical properties (*e.g.* water solubility and partition coefficient). The data obtained can be used not only for the purposes of chemical safe-handling, but also in the determination of the risk posed by a substance to human and the environment at all stages of its lifecycle.

SERVICES OFFERED

- Water solubility of fatty acids; and
- Partition coefficient of fatty acids.

COST

Depends on the type of services required.

WHEN TO EXPECT THE RESULTS

Under normal circumstances, the client can expect to receive a report within two weeks of submitting the sample(s). In the case of unforeseen circumstances, the client will be informed of any delay.

ISSN 1511-7871



9 771511 787001

Malaysian Palm Oil Board, Ministry of Plantation Industries and Commodities, Malaysia
P. O. Box 10620, 50720 Kuala Lumpur, Malaysia. Tel: 03-8769 4400 Fax: 03-8925 9446 Website: www.mpob.gov.my



For more information, kindly contact:

Director-General
MPOB
P. O. Box 10620
50720 Kuala Lumpur, Malaysia.
Tel: 03-8769 4400
Fax: 03-8925 9446
www.mpob.gov.my