Prioritisation of Alkylphenols for Environmental Risk Assessment

Summary

The Environment Agency has identified a number of chemicals that might be used as substitutes for the dangerous substance nonylphenol and prioritised them for detailed assessment to enable a better understanding of their environmental risks.

Nonylphenol is a chemical intermediate, but it is toxic to aquatic life and is known to affect endocrine systems. It has been found in many rivers, mainly as a breakdown product of nonylphenol ethoxylate detergents. Until recently these were used widely in many different products. The most polluting uses are being banned early in 2005, but some uses are still permitted until more is known of the potential risks of alternative chemicals. The purpose of this review was to identify the most likely alternatives and make recommendations for risk assessment priorities.

Based on consultation with the Conseil Européen des Phénols Alkylés et Derivés (CEPAD) (a trade association representing the major producers of these substances), the main findings were that:

- Only a few alkylphenols are commercially important at the moment, and very few are produced or used in large quantities in Europe.
- The main alternatives to nonylphenol appear to be 4-*tert*-octylphenol and branched dodecylphenol (also known as tetrapropenylphenol). Detailed environmental risk assessments of these two substances are recommended as a priority.
- Other substances have less potential to act as alternatives, but a combination of their hazardous properties and commercial importance means that risk assessments should be considered. This applies to:
    - 4-*tert*-pentylphenol (along with 4-*tert*-heptylphenol),
    - 2,4-di-*tert*-butylphenol,
    - 2,6-di-*tert*-butylphenol,
    - 2,4-di-*tert*-pentylphenol,
    - 2,4-dinonylphenol (branched), and
    - styrenated phenol.
- Consideration could also be given to obtaining more information on 4-cumylphenol (this was not covered in any detail by this review).
- The available data are insufficient to allow even a basic assessment for most of these substances at present, and this needs to be addressed first. One way might be to encourage sponsorship through international hazard assessment initiatives, or data call-in under the Existing Substances Regulation.

This information will be useful both to international regulatory authorities and Industry to enable them to focus attention on chemicals that might pose environmental risks in some applications.

The Environment Agency has already conducted initial risk assessments for 4-*tert*-octylphenol and dodecylphenol based on the recommendations of this report, and these will be published later in 2005.

This Summary relates to information reported in detail in the following output:-

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Project Manager
Steve Dungey, Science Group (Ecosystems and Human Health)

Research Contractor
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Rio House
Waterside Drive
Aztec West
Almondsbury
Bristol
BS32 4UD

Tel: 01454 624400
Fax: 01454 624409

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