File No PLC/729

29 November 2007

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

LC-12-9681

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Department of Health and Ageing, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Department of the Environment and Water Resources.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at our NICNAS office by appointment only at 334-336 Illawarra Road, Marrickville NSW 2204.

This Full Public Report is also available for viewing and downloading from the NICNAS website or available on request, free of charge, by contacting NICNAS. For requests and enquiries please contact the NICNAS Administration Coordinator at:

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Director
NICNAS

TABLE OF CONTENTS

FULL PUBLIC REPORT

LC-12-9681

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
PPG Industries Australia Pty Limited (ABN 82 055 500 939)
McNaughton Road
Clayton VIC 3168

NOTIFICATION CATEGORY
Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Chemical Name, Other Names, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Import Volume, spectral data and formulation concentrations.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
Not known

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
LC-12-9681

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) >1000

Reactive Functional Groups
The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

Criterion	Criterion met
Molecular Weight Requirements	Yes
Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
Stable Under Normal Conditions of Use	Yes
Not Water Absorbing	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa: White to yellow solid

Melting Point/Glass Transition Temp	Not provided. The melting point for the notified polymer is expected to be high due to the high molecular weight.
Density	1000-1200 kg/m^3 (temperature not specified)
Water Solubility	While largely hydrophobic, the notified polymer is dispersible in water (10-100 mg/L) due to the presence of ionisable anionic functional groups.
Dissociation Constant	The notified polymer contains anionic functional groups that may dissociate in aqueous solutions with typical acidity.
Reactivity	While the notified chemical contains hydrolysable functionality, it is expected to be stable under normal environmental conditions of pH 4-9.
Degradation Products	None under normal conditions of use. It will form carbon and nitrogen oxides as well as water upon incineration.

5. INTRODUCTION AND USE INFORMATION

Maximum Introduction Volume of Notified Chemical (100%) Over Next 5 Years

Year	1	2	3	4	5
Tonnes	<1	<1	1-3	1-3	1-3

5.1 USE

Ingredient of paint for use in refinish automotive applications.
The solution containing the notified polymer will be applied to automotive vehicles via spray painting. The solution containing the notified polymer may be manually transferred from the packaged container into the spray gun or transferred using automated transfer lines. Prior to spraying, the solution containing the notified polymer will be mixed with other spray components via a primarily manual procedure.

5.2.1 Mode of Introduction

The notified polymer will be imported into Australia through all major sea ports particularly Melbourne. Initially the notified polymer will be imported in tinters containing a resin solution at a concentration of less than 60%. The notified polymer is present in this resin solution at concentrations up to 26%. However, it is possible that the resin solution itself may be imported for later reformulation into tinter solutions.
The tinter solutions will be transported by road to the PPG Industries site in Clayton and stored in a bunded environment prior to their transport to end users.

5.2.2 Reformulation

Where the tinters are formulated within Australia the following process will be followed. The resin solution containing the notified polymer will be transferred from the storage area and added to the mixing tank via an automated process. Once mixing is complete samples will be taken for quality control testing prior to the paint being filled into 500 mL, 1L or 2L containers through an automated process.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Occupational Health and Safety Risk Assessment

Dermal and ocular exposure may potentially occur during reformulation processes involving the notified polymer. However, exposure to significant amounts of the notified polymer is limited because of the fully automated processes, and the engineering controls and personal protective equipment worn by workers.

Spray painters may come into contact with the notified polymer through dermal, inhalation and ocular routes. The risk of exposure, however, will be minimal as the spray paint is applied in a ventilated spray booth by workers using protective equipment. However, significant exposure is expected when spray booths are not used. After application and once dried, the paint containing the notified polymer is cured forming an inert

matrix hence the polymer is unavailable for exposure.

Although exposure to the notified polymer could occur during spray painting and reformulation, the risk to workers is considered to be low due to the intrinsic low hazard of the notified polymer and the controls in place to minimise exposure.

Public Health Risk Assessment
The notified polymer is intended for use by professional spray painters in auto repair workshops only, and will not be sold to the public. Following application, the notified polymer will become trapped within a film and will not be bioavailable. Therefore, the risk to public from exposure to the notified polymer is considered low.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
No ecotoxicological data were submitted. Anionic polymers are known to be moderately toxic to algae. The mode of toxic action is overchelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. This is unlikely to apply to the notified polymer. Additionally, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

Environmental Risk Assessment
Environmental release of the notified polymer during importation and transportation is not expected apart from accidental spills. The notified polymer is expected to undergo repackaging on arrival in Australia, which may result in up to 1% of the total annual imported volume being released as residual within import containers. This is expected to be disposed of to landfill.

During application, approximately 20% of the total imported volume may be lost as the result of overspray. The overspray will be collected within the spray booth on kraft paper and be disposed of by licensed waste contractors to trade waste. A further 2% may be released as a result of the cleaning of equipment and as residual within the end-use containers. This is expected to be disposed of to landfill.

The environmental fate of applied notified polymer is linked to the fate of the vehicles. These are likely to be disposed of in landfill after their useful life or undergo recycling whereby the paint will be thermally decomposed to form oxides of carbon and nitrogen during metal reclamation.

In landfill the notified polymer is expected to remain in a stable cured coating matrix. Overtime, the notified polymer should degrade via biotic and abiotic processes to form simple organic and nitrogen containing degradates.

Therefore, as release to the aquatic environment is not expected during the lifecycle of the notified polymer within Australia under the proposed use pattern, the notified polymer is not expected to pose an unacceptable risk to the aquatic environment.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described, the risk to workers is considered to be acceptable.

When used in the proposed manner the risk to the public is considered to be acceptable.

Environmental risk assessment

The chemical is not considered to pose a risk to the environment based on its reported use pattern.

Recommendations

CONTROL MEASURES

Occupational Health and Safety

- No specific engineering controls or personal protective equipment are required for the safe use of the notified polymer itself, however, these should be selected on the basis of all ingredients in the formulation.

  Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer as introduced and in formulated paint products:
  -Use of spray paints containing the notified polymer should be in accordance with the National Guidance Material for Spray painting (NOHSC, 1999).

- A copy of the MSDS should be easily accessible to employees.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Disposal

- The notified polymer should be disposed of to landfill.

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

Regulatory Obligations

Secondary Notification

This risk assessment is based on the information available at the time of notification. The Director may call for the reassessment of the chemical under secondary notification provisions based on changes in certain circumstances. Under Section 64 of the *Industrial Chemicals (Notification and Assessment) Act (1989)* the notifier, as well as any other importer or manufacturer of the notified chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical is listed on the Australian Inventory of Chemical Substances (AICS).

Therefore, the Director of NICNAS must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under Section 64(1) of the Act; if
  - the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

(2) Under Section 64(2) of the Act; if
  - the function or use of the chemical has changed from an ingredient of paint for use in refinish automotive applications, or is likely to change significantly;
  - the amount of chemical being introduced has increased from 3 tonnes, or is likely to increase, significantly;
  - if the chemical has begun to be manufactured in Australia;
  - additional information has become available to the person as to an adverse effect of the chemical on occupational health and safety, public health, or the environment.

The Director will then decide whether a reassessment (i.e. a secondary notification and assessment) is required.

No additional secondary notification conditions are stipulated.

Material Safety Data Sheet
The MSDS of a product containing the notified chemical provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.