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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in RA-16-1701

This Self Assessment has been compiled by the applicant and adopted by NICNAS 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), administered by the Department of Health and Ageing and the Department of the Environment, Water, Heritage and the Arts has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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Director
NICNAS

Part 2 –PLC Self Assessment

Polymer in RA-16-1701

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT
PPG Industries Australia Pty Ltd (ABN 82 055 500 939)
McNaughton Road
CLAYTON VIC 3168

NOTIFICATION CATEGORY
Self Assessment: Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Chemical Name, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
RA-16-1701

Molecular Weight
(MW) Mn > 1000 Da

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	Liquid (based on product).
Melting Point/Glass Transition Temp	Not applicable as a solution.
Density	1002 kg/m^3 at 25°C.
Water Solubility	Refer to comments section.
Dissociation Constant	Refer to comments section.
Reactivity	Stable under normal environmental conditions.
Degradation Products	Small amounts of monomers and oxides of carbon produced on combustion.

Comments
The notified polymer is expected to have low water solubility as it is a polyester with limited hydrophilic functionality. The product containing it is thinned in water and is water dispersible. It is not however water absorbing. The polymer possesses no functional groups that are expected to become cationic in the aquatic environment. Furthermore the polymer is unlikely to be released to the aquatic environment during the normal course of use as it is converted into an inert coating of high molecular weight during the curing process.

5. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	0.16	0.25	0.35	0.45	0.5

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction
The notified polymer will be imported as part of 'Envirobase High Performance' basecoat automotive repair coatings in 1 L containers. The concentration of the notified polymer in the imported coating is 1%. The coatings containing the notified polymer will be initially stored at the notifier's warehouse before being transported by truck to the application sites.

Reformulation/manufacture processes
Immediately prior to the application, the component containing the notified polymer will be manually weighed and mixed with solvent and applied to vehicles using a spray gun in a spray booth.

Use
The notified polymer will be used as a component of water based basecoat automotive repair coatings. The final concentration of the notified polymer in the repair coatings will be 0.8%. The coatings will be applied using a spray gun and will be used by smash repair companies only. The polymer forms part of the binder in the coating.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE
Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages of the containers.

During reformulation and use, 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 made up and applied in a ventilated spray booth by workers using protective equipment.

After application, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable for exposure.

PUBLIC EXPOSURE
The notified polymer will not be sold to the public. The public may come into contact with the finished and dried product on refinished automobiles, however in this form the notified polymer will be bound

in an inert matrix and as such, will not be biologically active and available for exposure.

6.2. Toxicological Hazard Characterisation

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

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

The OHS risk presented by the notified polymer is expected to be low, based on low hazard and low exposure as well as the engineering controls and personal protective equipment used by workers.

PUBLIC HEALTH

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 be cured and trapped within a coating and will not be bioavailable. Therefore, the risk to public health from exposure to the notified polymer is considered low.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the containers. When spills occur, they will be contained by bunding, collected with absorbent material and sent to a licensed off site waste disposal centre.

Under normal use procedures, losses of the notified polymer through overspray, mixing of components and cleaning of equipment as well as losses from residues in containers have been estimated to be a maximum of 70% which equates to a maximum of 0.4 tonnes per annum. Waste from application will be hardened and disposed of to landfill.

The remainder of the notified polymer will be bound in the paint matrix and not be available for direct release to the environment. Disposal of the automobile may be through landfill or recycling, and the fate of the paint will be related to that of the automobile.

ENVIRONMENTAL FATE

The waste remaining in the empty canisters and that generated in overspray and cleaning equipment and spills will ultimately be disposed of to landfill. The polymer is potentially hydrolysable; however this is unlikely under standard environmental conditions. It is expected that the notified polymer will be immobile in landfill and slowly degrade to water and oxides of carbon. During automobile recycling, the polymer will be destroyed.

7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

7.3. Environmental Risk Assessment

No aquatic exposure is anticipated during end use of the notified polymer. It is expected that practically all of the waste generated from end users (70% as overspray) will be disposed of in approved landfills as inert solid waste. In landfill, the solid wastes will not be mobile and will degrade slowly and not pose a significant risk to the environment.

8. CONCLUSIONS

8.1. Level of Concern for Occupational Health and Safety

There is low concern to occupational health and safety under the conditions of the occupational settings described.

8.2. Level of Concern for Public Health

There is negligible concern to public health when used in the proposed manner.

8.3. Level of Concern for the Environment

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

9. MATERIAL SAFETY DATA SHEET

9.1. Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

10. RECOMMENDATIONS

CONTROL MEASURES

Occupational Health and Safety

- No specific engineering controls, work practices 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.

- Use of spray paints containing the notified chemical should be carried out in accordance with the ASCC *National Guidance Material for Spray Painting* [NOHSC (1999b)] or relevant State and Territory Codes of Practise.

- 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 NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Environment

- The following concentration limits should be implemented by customers for release of the notified polymer to the environment:
  - *Bunding*
  - *Exhaust ventilation with filter*

Disposal

- The notified polymer should be disposed of to landfill
- Empty containers should be sent to local recycling or waste disposal facilities.

Storage

- The following precautions should be taken by the notifiers regarding storage of the notified polymer:
  - *Bunding*

Emergency procedures

- Spills/release of the notified polymer should be handled by absorbing with sand and put into suitable containers for disposal. Contaminated containers can be reused after cleaning.
- Do not flush the product containing the notified polymer into surface water or sewer system.

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 polymer 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 polymer, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified polymer 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 notified polymer has changed from a component in automotive repair coatings, or is likely to change significantly;
- the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
- the notified polymer 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.