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December 2012

**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME
(NICNAS)**

PUBLIC REPORT

Polymer in WA-13-1313

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 Sustainability, Environment, Water, Population and Communities have screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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 Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

This 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**

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SUMMARY

The following details will be published in the NICNAS *Chemical Gazette*:

ASSESSMENT REFERENCE	APPLICANT(S)	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
SAPLC/145	PPG Industries Australia Pty Ltd	Polymer in WA-13-1313	No	≤ 1 tonne per annum	Component of automotive refinish coatings

CONCLUSIONS AND REGULATORY OBLIGATIONS**Human health risk assessment**

Based on the assumed low hazard and the reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the health of workers and the public.

Environmental risk assessment

Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

Recommendations**CONTROL MEASURES****Occupational Health and Safety**

- Spray applications should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)] or relevant State and Territory Codes of Practice.
- 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.

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

Environment

- The following control measures should be implemented by end users to minimise environmental exposure during (manufacture, formulation, use) of the notified polymer:
 - Bunding
 - Exhaust ventilation with filter

Storage

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

Disposal

- The notified chemical 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 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 component of automotive refinish coatings, or is likely to change significantly;
 - the amount of 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 notified polymer 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.

Material Safety Data Sheet

The MSDS of a product containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information in the MSDS remains the responsibility of the applicant.

Assessment Details

Polymer in WA-13-1313

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, Use Details, Manufacture/Import Volume

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

USA (TSCA) registration CP09-5039P , legacy – exempt

China (IESCS) registration (0079)T-114373 , legacy – exempt

Korea(KECI) registration 1104-001588 , legacy - exempt

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

WA-13-1313 REFINISH (Product containing the notified polymer)

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (NAMW) > 1000 Da

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</i>
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	N/A
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

Melting Point/Glass Transition Temp

Density

Water Solubility

Liquid (based on product)

Not applicable as in solution.

1018 kg/m³ at 25°C

Expected to be water dispersible based on the presence of hydrophilic and hydrophobic functionality and its use in aqueous products.

Dissociation Constant	Contains dissociable functionality that may ionise under environmental conditions (pH 4-9)
Reactivity	Stable under normal environmental conditions
Degradation Products	Small amounts of monomers and oxides of carbon produced on combustion

Comments

The polymer is thinned in water and is reported as partially water soluble ((M)SDS). The polymer however possesses no functional groups that are expected to become cationic in the aquatic environment. A cationic reactant is present only as a counter-ion to groups on the polymer backbone. 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**

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Tonnes</i>	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0

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 litre 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 concentration of the notified polymer in the final repair coating will be < 1%. 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 personal protective equipment (PPE).

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

The notified polymer meets the PLC criteria. No toxicological data were submitted; however, one monomer of the notified polymer is classified as a skin sensitiser due to its potential to form sensitising oxidation products. The level of residual monomer is below the cut-off concentration for classification. The polymer contains a moderate level of low molecular weight species. While the sensitisation potential of the notified polymer cannot be ruled out, it will be minimised by its overall high molecular weight (> 1,000) and the fact that the polymer contains only a low percentage of the monomer.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

The polymer may have some sensitising potential due to one of the monomers. As the polymer is imported and applied at a low percentage ($\leq 1\%$) and handling will be carried out with PPE, worker exposure is expected to be low. Therefore, the risk to workers is not considered unreasonable. The use of safe work practices such as the *National Guidance Material for Spray Painting* [NOHSC (1999)] would further reduce any risk.

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 the coating and will not be bioavailable. Therefore, the exposure to the public will be very low and the risk to the public is not considered unreasonable.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

Release to the environment during shipping, transport and storage will only occur as a result of accidental spills or leaks. 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 import containers have been estimated to be a maximum of 70% which equates to a maximum of 0.7 tonnes per annum. Wastes generated during use are expected to be hardened and disposed of to landfill. The remainder of the notified polymer will be bound in the paint matrix and are not expected to be available for direct release to the environment. Disposal of coated automobiles may be through landfill or recycling, and the fate of the paint will be related to that of the automobile.

ENVIRONMENTAL FATE

The majority of the notified polymer is expected to be disposed of to landfill via residues in the empty import containers, waste generated during use, spills and disposal of coated automobiles. Minimal release to the aquatic environment is expected from the assessed use pattern. The notified polymer has the potential to slowly hydrolyse under environmental conditions (pH 4-9). Notified polymer that has hardened or is bound in the paint matrix is not expected to be mobile in landfill and will slowly degrade to water and oxides of carbon. During automobile recycling, the polymer will degrade to form water and oxides of carbon.

7.2. Environmental Hazard Characterisation

Anionic polymers are known to be moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone, which is unlikely to apply to the notified polymer.

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 will be disposed of in approved landfills as inert solid waste. In landfill, the notified polymer will not be bioavailable as it will remain bound to solid waste and will degrade slowly. The notified polymer is not expected to pose an unreasonable risk to the environment.