File No: SAPLC/179

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in HC-35-2345

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 (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 the Department of the Environment, has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

This Public Report is 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/179	PPG Industries Australia Pty Ltd	Polymer in HC-35-2345	No	≤ 2 tonnes per annum	Component of coatings

CONCLUSIONS AND REGULATORY OBLIGATIONS

Human Health 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 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.

Health and Safety Recommendations

- 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.

- A copy of the (M)SDS should be easily accessible to employees.

- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (Safe Work Australia, 2015) or relevant State or Territory Code of Practice.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation should be in operation.

Disposal

Where reuse or recycling are not appropriate, dispose of the polymer in an environmentally sound manner in accordance with relevant Commonwealth, state, territory and local government legislation.

Storage

The following precautions should be taken by workers regarding storage of the notified polymer:

- Bunding

Emergency Procedures

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

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 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 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 (M)SDS of the product containing the notified polymer was provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicant
PPG Industries Australia Pty Ltd. (ABN: 85 055 500 939)
14-20 McNaughton Road
CLAYTON VIC 3168

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities, use details and import volume.

2. IDENTITY OF POLYMER

Marketing Name
HC-35-2345 (product containing the notified polymer)

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 Da

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
Melting Point/Glass Transition Temp	Not applicable as in solution
Density	1,060 kg/m^3 at 25 °C
Water Solubility	Not determined. Expected to be low based on the predominantly hydrophobic structure of the notified polymer.
Dissociation Constant	Not determined. The notified polymer does not contains dissociable functionality that is expected to 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 organic solvent and is reported as water insoluble ((M)SDS). 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	0.1 - 2	0.1 - 2	0.1 - 2	0.1 - 2	0.1 - 2

Use
The notified polymer will be imported as a 5%-20% w/w polymer solution in organic solvent contained in 200 L steel drums. The notified polymer, contained in 200L drums will be warehoused at Clayton for reformulation into paint. After reformulation, the paint, contained in 200 L steel drums, is to be warehoused at the Clayton site from where it will be distributed by truck to customers for application.

During reformulation the notified polymer will be poured from 200 L drums into 5000 L capacity steel vessels. Other batch ingredients will be added and mixing will occur at room temperature. The final product (containing <10% notified polymer) will then be piped to 200 L steel drums.

The notified polymer will be used as a component of industrial exterior roofing and walling coil coating at < 10%, forming part of the binder in the coatings. The coating will be used by industrial coil coating companies only.

6. HUMAN HEALTH RISK ASSESSMENT

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

Although not considered in this risk assessment, the notified polymer contains residual monomers that are classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia. These are not present in the notified polymer as introduced above the cut off concentrations for classification.

Overall, given the assumed low hazard of the notified polymer, it is not considered to pose an unreasonable risk to workers or the public.

7. ENVIRONMENTAL RISK ASSESSMENT

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE
The notified polymer will not be manufactured in Australia. The notified polymer will be blended with other components in Australia to prepare roofing and walling coil coating. The blending is expected to be largely automated and will occur in enclosed systems. There is potential for release of the notified polymer from reformulation, application, equipment cleaning, container residues and accidental spills. It is estimated that up to 3% wastes of the total volume of the notified polymer will be released from equipment cleaning (<1%) and residues in containers (2%). These wastes are expected to be collected, treated and disposed of to landfill. As the notified polymer will be used in industrial settings by trained professionals, it is expected that no waste notified polymer will enter the sewerage system or natural waterways. Environmental release during importation, transport and distribution may occur as a result of accidental spills. In the event of a spill, the notified polymer is expected to be collected with an inert absorbent material and disposed of in accordance with local regulations, which is most likely landfill.

The application will be performed automatically by rollers in a large application unit within a ventilated room. A significant amount of waste polymer may be generated during the application of

the coating using a roller. However, the waste notified polymer is expected to be cured and bound in an inert paint matrix and is not available for direct release to the aquatic environment. The notified polymer that is coated on metal substrate is expected to be thermally decomposed during metal recycling or disposed of to landfill at the end of the substrate's useful life.

ENVIRONMENTAL FATE

The notified polymer in coated articles is expected to share the fate of these articles and, at the end of their useful lives, be disposed of to landfill.

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 up to 3% wastes of the total volume of the notified polymer will be generated from reformulation and application processes. These wastes are expected to be collected, treated and disposed of to landfill in the form of inert solid wastes. It is expected that the notified polymer will be immobile in landfill and will eventually degrade into water and carbon dioxide by biotic and abiotic processes. Most of the notified polymer used in exterior roofing and walling coil finishes will eventually be incorporated in metal recycling programs or sent to landfill for disposal following its lifecycle. The notified polymer will eventually degrade in landfill or by thermal decomposition during metal reclamation processes, to form water and oxides of carbon. Therefore, based on its assumed low hazard and assessed use pattern, the notified polymer is not considered to pose an unacceptable risk to the environment.