

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in HC-33-1524

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 the Department of the Environment, has 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 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/176	PPG Industries Pty Ltd	Polymer in HC-33- 1524	No	≤ 2 tonnes per annum	Component of paint

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.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the Globally Harmonised System for the 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.

Environment

- The following control measures should be implemented by the notifier to minimise environmental exposure during formulation and use of the notified polymer:
 - Bunding
 - Exhaust ventilation with filter

Disposal

- Where reuse or recycling are not appropriate, dispose of the notified 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 paint, 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: 82 055 500 939)
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 and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

HC-33-1524 (product containing the notified polymer at 30-60% concentration)
RC-acrylic/industrial (product containing the notified polymer at 30-60% concentration)

Molecular Weight

Number Average Molecular Weight (Mn) is > 1,000 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	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	Introduced in solution
Density	1,050 kg/m ³ at 25 °C
Water Solubility	10.9 g/L at room temperature (MSDS)*
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.

* For the product containing the notified polymer at 30-60% concentration in solvent solution.

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>
Tonnes	0.1 – 2	0.1 - 2	0.1 – 2	0.1 – 2	0.1 - 2

Use

The notified polymer will be imported at 30 – 60 % solution (in organic solvent) in 200 L steel drums. The notified polymer will be reformulated into paint products and then transported in 200 L steel drums to customer sites for application.

The notified polymer will be used as a component of industrial exterior roofing and walling coil coatings at < 5% concentration. The coating will be used by industrial coil coating companies only.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. 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 for the 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 to occupational and public health, the notified polymer 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 be imported into Australia and reformulated into surface coatings for industrial exterior roofing and walling coil coatings. Release of the notified polymer to the environment during transport and warehousing is expected to occur only through accidental spills or leaks of containers. When spills occur, they are expected to be contained by bunding, collected with absorbent material and sent to landfill or a licensed off site waste disposal centre.

During reformulation and use, the notified polymer may be released to the environment as accidental spills, equipment rinsate, and container residues. It is estimated by the Notifier that up to 3% 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, cured and disposed of to landfill. As the notified polymer will only be used in industrial settings by trained professionals, no release of the notified polymer to sewers or waterways is expected.

The application of coatings containing the notified polymer 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 will not be bioavailable. 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 the useful lives, be disposed of to landfill or thermally decomposed during substrate reclamation. In landfill, the notified polymer will be present as cured solids, which will be neither bioavailable nor mobile. The notified polymer is not expected to bioaccumulate due to its high molecular weight and low water solubility. In landfill, the notified polymer is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon and nitrogen. Thermal decomposition of the notified polymer during substrate reclamation processes will result in the formation of water vapour and oxides of carbon and nitrogen.

7.2 Environmental Hazard Characterisation

No ecotoxicological data were submitted. 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. Therefore, the notified polymer is not considered to be an over-chelation hazard to algae.

7.3 Environmental Risk Assessment

The majority 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 and nitrogen. No significant aquatic release is expected during end-use of the notified polymer. The notified polymer will be bound within the cured coating matrix, and is not expected to be either bioavailable or bioaccumulative. 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.