File No: SAPLC/199

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polyester Resin in HP-63-6134

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 and Energy, 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

November 2017

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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/199	PPG Industries Australia Pty Ltd	Polyester Resin in HP-63-6134	No	≤ 2,100 tonnes per annum	Component of industrial coil 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

- If aerosols are formed during the use of the notified polymer, engineering controls and respiratory protection should be used to prevent inhalation exposure.

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

- A copy of the 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.

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.

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 a component of industrial coil coatings, or is likely to change significantly;
- the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
- the method of manufacture of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;
- 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.

Safety Data Sheet

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

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants
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, use details, and manufacture volume.

2. IDENTITY OF POLYMER

Marketing Name(s)
HP-63-6134 (Product containing the notified polymer at 50 – 70% concentration)

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 g/mol

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	Clear liquid (property of product HP-63-6134)
Melting Point/Glass Transition Temp	Not determined. Notified polymer is not isolated from solution under normal conditions.
Density	1,060 kg/m^3 at 25 °C.
Water Solubility	Not determined. The notified polymer is expected to have limited water solubility based on molecular structure.
Dissociation Constant	Not determined. The notified polymer contains dissociable functionalities with an expected pKa of 5. However, the notified polymer is not expected to be significantly ionised in the environment due to its limited water solubility.
Particle Size	Not determined. Notified polymer is not isolated from solution.
Reactivity	Stable under normal environmental conditions. The notified polymer contains functionalities that may hydrolyse. However, significant hydrolysis of the notified polymer is not expected given its insolubility in water.
Degradation Products	None under normal conditions of use.

Comments:
The notified polymer will be manufactured as an organic solvent dispersion at a concentration of 50 – 70%, and will not be isolated from solution under normal use and storage.

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	500-1,000	1,000-2,100	1,000-2,100	1,000-2,100	1,000-2,100

Use

The notified polymer will be manufactured and reformulated at the PPG site in Clayton, Victoria. The notified polymer will form part of the binder in paint (coil coating) products for industrial exterior roofing and walling.

The notified polymer (at a concentration of 50 – 70%) will be manufactured as an organic solvent dispersion and will not be isolated from the manufactured mixture. The notified polymer will be reformulated with other batch ingredients to form finished coil coating products and repackaged into 200 L steel drums. Paint products containing the notified polymer will be distributed by truck to customers from the PPG site. Only industrial coil coating companies will have access to the coating products.

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.

6.1. Occupational Health and Safety Risk Assessment

Transport and warehouse workers are not expected to be exposed to the notified polymer except in the unlikely event of an accident, as the products containing the notified polymer will be sealed in original containers during the operations.

Skin and eye exposure of workers to the notified polymer at a concentration of up to 70% may occur during the manufacture and reformulation. Engineering controls in place, including the use of local exhaust extraction and automated processes for filtering and filling, are expected to minimise exposure. The use of appropriate personal protective equipment (PPE), including impervious gloves and safety glasses, will also reduce the potential for exposure during these operations.

During end use, skin, eye and inhalation exposure of workers to paint products containing the notified polymer at a concentration up to 30% may occur. Exposure will be minimised by the use of automated rollers to apply the paint products to metal surfaces in the presence of general exhaust extraction. Workers are expected to wear PPE including gloves, overalls, eye and respiratory protection. After application, the notified polymer is expected to be cured into an inert matrix and will not be bio-available for exposure.

The risk of the notified polymer to occupational health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

6.2. Public Health and Safety Risk Assessment

The notified polymer will not be made available to the general public. The notified polymer is intended for use only by trained operators in industrial roller coating facilities.

The general public may come into contact with metal surfaces coated with products containing the notified polymer. However, once the paint products are cured the notified polymer is expected to be contained in an inert matrix, and will not be bio-available for exposure.
The risk of the notified polymer to public health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

7. ENVIRONMENTAL RISK ASSESSMENT

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

The notified polymer will be transported as a 50-70% organic solvent dispersion, contained in 200 L steel drums to one site in Australia, where it will be warehoused before it is distributed by truck to customers for reformulation and application. Release 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 a licensed off site waste disposal centre.

The notified polymer will be reformulated in Australia to form final products for use in industrial operations. In the reformulation process the notified polymer will be poured from the 200 L drums into 5,000 L capacity steel vessels. Other batch ingredients will be added, and mixing will occur at room temperature. The final product (containing less than 30% concentration of the notified polymer) will then be transferred to 200 L steel drums.

There is potential for release of the notified polymer during reformulation and application. Specifically, it is estimated that up to 1% of the total volume of the notified polymer will be released from equipment cleaning. It is estimated that up to 3% of the total volume of the notified polymer will be released from container residues. These wastes are expected to be collected, treated and disposed of to landfill. As the notified polymer will be used in industrial settings, it is expected that no waste containing the notified polymer will enter the sewerage system or natural waterways. Release from accidental spills during the reformulation and application processes will be dealt with in the same manner as described above for the storage facility.

Once cured, the notified polymer is expected to be bound in an inert paint matrix and not available for direct release to the environment. The notified polymer is expected to share the fate of the coated metal substrate containing the notified polymer, which is expected to be recycled or disposed of to landfill. The notified polymer will be thermally decomposed during metal recycling or disposed of to landfill at the end of its useful life.

ENVIRONMENTAL FATE

No studies on the environmental fate of the notified polymer have been provided. The waste remaining in the empty drums and generated in cleaning equipment and spills will ultimately be disposed of to landfill. The notified polymer is expected to be stable 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 coated metal substrate recycling, the notified polymer is expected to be destroyed by thermal decomposition to form water vapour and oxides of carbon.

7.2. Environmental Hazard Characterisation

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

7.3. Environmental Risk Assessment

No significant aquatic exposure is anticipated during the manufacture, storage, reformulation, application and end use of the notified polymer.

It is expected that up to 3% of the total volume of the notified polymer will be generated as wastes from the reformulation and application processes. These wastes are expected to be collected, treated and disposed of to landfill as inert solid wastes. 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 at the end of its lifecycle. Thermal decomposition of the notified polymer during metal recycling will result in the formation of water vapour and oxides of carbon. In landfill, the notified polymer will eventually degrade slowly by biotic and abiotic process to water vapour and oxides of carbon. The solid wastes in landfill are not expected to be mobile. The notified polymer is not expected to be readily biodegradable. Due to its high molecular weight, it is not expected to cross cell membranes, and hence to bioaccumulate.

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