

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in HA-55-9932

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/161	PPG Industries Australia Pty Ltd	Polymer in HA-55- 9932	No	≤ 5 tonnes per annum	Resin intermediate

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.

Disposal

- The notified polymer should be disposed of to landfill.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
 - Store in a segregated and approved area.

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 resin intermediate, 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.

(Material) Safety Data Sheet

The (M)SDS of a 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

Applicants

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

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 and manufacture volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

HA-55-9932 (contains the notified polymer at 50-70% concentration in solvent solution)

Other Name(s)

Alkyd Intermediate A

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*
Density	990 kg/m ³ *
Water Solubility	Not determined. The notified polymer is expected to have limited solubility in water due to high molecular weight and predominately hydrophobic structure.
Dissociation Constant	Not determined. A pKa value of about 5 may be expected in case of residual acids in the notified polymer.
Reactivity	Stable under normal environmental conditions. Hydrolysis is not expected to occur in the environmental pH range of 4-9 despite the presence of hydrolysable functional groups in the notified polymer.
Degradation Products	None under normal conditions of use

* For the product containing the notified polymer at 50-70% 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	2-5	2-5	2-5	2-5	2-5

Use

The notified polymer is a resin intermediate for manufacture of a resin used as a binder in light industrial equipment coatings.

The notified polymer will be manufactured in Australia as a 50-70% w/w polymer in organic solvent and packaged in 200 L drums. It will then be transferred to another reactor on the same manufacturing site and converted to the final polymer that is sold to end users in 4 and 20 L metal cans. The notified polymer will be site limited.

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. 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.

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.

Transport and warehouse workers may come into contact with the notified polymer through accidental leaks and spillages of the containers. Exposure during polymer manufacture and reformulation may occur during in-process and final sampling and testing, as well as filtering and filling the thinned notified polymer into containers. Engineering controls expected to be implemented to minimise exposure consist of automated processes for filtering and filling plus the use of local exhaust extraction. Workers will wear impermeable gloves, eye protection and overalls. During formulation, workers will transfer the polymer solution to the reactor vessel via pump. Workers will wear impermeable gloves, eye protection and overalls. The notified polymer will be site limited. It will exist off-site only as the converted polymer.

Occupational Health and Safety Risk Assessment

Exposure to the notified polymer for workers may occur by dermal, ocular or inhalation routes, however significant exposure will be limited due to the engineering controls, workplace practices and personal protective equipment used. 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.

Public Health and Safety Risk Assessment

The notified polymer will be limited to the manufacture site and will exist off-site only as the converted polymer, hence public exposure to the notified polymer is not expected. Therefore, the risk of the notified polymer to public health is not considered to be unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

The notified polymer will be manufactured and converted in solvent solution in Australia. The converted polymer will be formulated into final coating products prior to being applied to substrates. The release of the notified polymer to the environment may occur from the cleaning of equipment, accidental spills or leaks during manufacture/conversion and transport and warehousing within the manufacture site. Waste notified polymer produced from these activities is expected to be contained by bunding, collected with inert absorbent material and sent to a licensed off-site waste disposal centre.

The notified polymer is limited to the manufacture site. It exists off site only as the converted polymer.

No studies on the environmental fate of the notified polymer have been provided. The majority will be converted to another polymer, although some waste notified polymer from manufacture may be disposed of to landfill. The notified polymer contains potentially hydrolysable functionalities. However, significant hydrolysis is not expected under standard environmental conditions based on its expected low water solubility. The notified polymer is not expected to be readily biodegradable but due to its high molecular weight, is not expected to bioaccumulate. In landfill, the notified polymer will be degraded via abiotic or biotic pathways into water and oxides of carbon.

No ecotoxicological data were submitted. PLC's without significant functionality are of low concern to the aquatic environment.

No aquatic exposure is anticipated during end use of the notified polymer. It is expected that practically all of the waste generated from manufacture or handling release will be disposed of through a licensed off site waste disposal centre.

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