

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in HP-63-7028

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 have screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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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/153	PPG Industries Australia Pty Ltd	Polymer in HP-63- 7028	No	≤ 200 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

- 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.

Environmental Recommendations

- No specific control measures are required to minimise release of the notified polymer to the environment.

Disposal

- The notified polymer should be disposed 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, 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

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 and manufacture/import volume.

2. IDENTITY OF POLYMER

MARKETING NAME(S)

HS1 Polyester HP-63-7028 (containing the notified polymer at up to 70% concentration in organic solvent)

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	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 (solution)
Melting Point/Glass Transition Temp	Not applicable as a solution
Density*	1087 kg/m ³
Water Solubility	Not determined. The notified polymer is expected to have limited solubility in water due to the high molecular weight and its predominantly hydrophobic structure.
Dissociation Constant	Not determined. A pKa value of about 5 is expected due to the presence of the residual acids in the notified polymer.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* For product containing the notified polymer at up to 70% concentration in organic solvent

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>	75-150	100-200	100-200	100-200	100-200

USE AND MODE OF INTRODUCTION

The notified polymer will be manufactured as a 50-70% w/w polymer solution in organic solvent, contained in 200 L steel drums. The notified polymer will be used as a component of exterior roofing and walling coil coatings at < 35% concentration, forming part of the binder in the coatings. The coating will be used by industrial coil coating companies only.

6. HUMAN HEALTH RISK ASSESSMENT

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.

Exposure during polymer manufacture 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 coveralls. Exposure from the notified polymer to these workers can occur by either dermal or ocular routes, however significant exposure will be limited due to the engineering controls, workplace practices and personal protective equipment used.

During formulation, workers will manually weigh and transfer the polymer solution to the mixing vessels. Workers will wear impermeable gloves, eye protection and coveralls. Exposure from the notified polymer to these workers can occur by either dermal or ocular routes; however significant exposure will be limited due to the workplace practices and personal protective equipment used.

Throughout end use, workers will come into contact with the notified polymer through dermal, inhalation and ocular routes. The risk of exposure, however, will be minimised as application will take place automatically by rollers in a large application unit within a ventilated room under supervision by workers using personal protective equipment.

After application, the paint containing the notified polymer will be cured into an inert matrix and the notified 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 building exterior roofing and walling, however in this form the notified polymer will be bound in an inert matrix and as such is not expected to be bioavailable.

6.2. Toxicological Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

Based on the assumed low hazard of the notified polymer as well as the engineering controls and personal protective equipment used by workers to minimise exposure, the risk to workers from use of the notified polymer is not considered unreasonable.

PUBLIC HEALTH

The notified polymer is intended for use only by trained operators in industrial roller coating facilities and will not be sold to the public. Once the polymer is applied and cured it will be contained in an inert matrix and hence will not be available for exposure. The risk to the public from exposure to the notified polymer is therefore not considered to be unreasonable.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

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 landfill.

There is potential for the release of the notified polymer from manufacturing/reformulation and application, from equipment cleaning, container residues and accidental spills. It is estimated that up to 3% of the total volume of the notified polymer may 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 significant amounts of the notified polymer will enter the sewerage system or natural waterways.

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.

ENVIRONMENTAL FATE

Most of the notified polymer used in exterior roofing and walling coil finishes is expected to be cured on the substrate's surface. The cured notified polymer is expected to share the fate of the coated substrate and be subjected for metal reclamation or disposed of to landfill. The notified polymer is not expected to be readily biodegradable but due to its high molecular weight, it is not expected to bioaccumulate. The notified polymer will eventually degrade in landfill, or by thermal decomposition during metal reclamation processes, to form water and oxides of carbon.

7.2. Environmental Hazard Characterisation

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

7.3. Environmental Risk Assessment

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