

File No SAPLC/139

August 2012

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

PUBLIC REPORT

Polymer in RE-69-5051

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 Ageing and the Department of Sustainability, Environment, Water, Population and Communities have 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 Full 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**

TABLE OF CONTENTS

SUMMARY	3
CONCLUSIONS AND REGULATORY OBLIGATIONS	3
ASSESSMENT DETAILS	4
1. APPLICANT AND NOTIFICATION DETAILS	4
2. IDENTITY OF CHEMICAL	4
3. PLC CRITERIA JUSTIFICATION	5
4. PHYSICAL AND CHEMICAL PROPERTIES	5
5. INTRODUCTION AND USE INFORMATION	5
6. HUMAN HEALTH IMPLICATIONS	6
6.1. Exposure Assessment	6
6.2. Toxicological Hazard Characterisation	6
6.3. Human Health Risk Assessment	6
7. ENVIRONMENTAL IMPLICATIONS	6
7.1. Exposure Assessment	7
7.2. Environmental Hazard Characterisation	7
7.3. Environmental Risk Assessment	7

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/139	PPG Industries Australia Pty Ltd	Polymer in RE-69-5051	No	≤1000 tonnes per annum	Component of coatings for metal cans

CONCLUSIONS AND REGULATORY OBLIGATIONS

Level of Concern for Occupational Health and Safety

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unreasonable risk to the health of workers.

Level of Concern for Public Health

When used in the proposed manner, the notified polymer is not considered to pose an unreasonable risk to public health.

Environmental risk assessment

The polymer is not considered to pose an unreasonable risk to the environment based on its reported use pattern.

Recommendations

CONTROL MEASURES

Occupational Health and Safety

- 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.
- 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.

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

Disposal

- The notified polymer should be disposed of to landfill
- Empty containers should be sent to local recycling or waste disposal facilities.

Emergency procedures

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

Regulatory Obligations

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 coatings for metal cans, or is likely to change significantly;
 - the amount of 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 notifier has provided an (M)SDS as part of the notification statement. 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, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents and Residual Monomers/Impurities

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
RE-69-5051 (containing 35% notified polymer)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (NAMW) >1000

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

The notified polymer is manufactured in solution and is not isolated

Melting Point/Glass Transition Temp

Not determined. The notified polymer is manufactured in solution and is not isolated

Density

970 kg/m³ at 25°C*

Water Solubility

Not determined. The notified polymer is expected to have limited solubility in water due to the high molecular weight and significant amounts of hydrophobic monomer units present in the polymer.

Dissociation Constant

Not determined. The notified polymer contains residual acids and bases, however, it is not expected to ionise significantly in the environment due to its low expected water solubility.

Reactivity

Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups. However, significant hydrolysis is not expected to occur in the environmental pH range of 4-9.

Degradation Products

Small amount of monomers and oxides of carbon produced on combustion.

*Solution containing the notified polymer at 35%.

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>	500-1000	500-1000	500-1000	500-1000	500-1000

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

The notified polymer will be manufactured in Australia at the Clayton, Victoria, PPG site. The notified polymer will be manufactured as a 35% w/w polymer solution in organic solvent.

Reformulation/manufacture processes

The polymer solution (containing 35% notified polymer) will be manufactured in a resin plant facility in Australia. Following manufacture, the polymer solution will be transferred to 200 L steel drums and following initial warehousing at the PPG Clayton site, the drums will be placed in shipping containers, transported by truck to the port and then exported (by ship) to an overseas PPG location.

In the future, the notified polymer may be reformulated into coatings containing <30% notified polymer.

Use

The notified polymer is intended to be manufactured in Australia and exported for use overseas. In the future, the notified polymer may be used as a component of coatings for metal beverage cans at <30% concentration. The notified polymer will form part of the binder in the coatings and will be applied by roller coat.

6. HUMAN HEALTH IMPLICATIONS**6.1. Exposure Assessment****OCCUPATIONAL EXPOSURE**

Transport and storage workers may come into dermal and ocular contact with the notified polymer (at ≤35% concentration) only in the event of accidental leaks or rupture of the containers.

Dermal and ocular exposure to the notified polymer may occur during manufacture and final sampling and testing, as well as during filtering and filling the solution containing the notified polymer into containers. Engineering controls that are expected to be implemented to minimise exposure include automated processes for filtering and filling and the use of local exhaust extraction. Workers will wear impermeable gloves, eye protection and overalls. Therefore, while exposure of workers to the notified polymer may occur by either the dermal or ocular routes, significant exposure will be limited due to the engineering controls, workplace practices and personal protective equipment used.

Should the notified polymer be used as a component of metal can coatings in the future, workers may come into contact with the notified polymer (at ≤35% concentration; primarily through the dermal and ocular routes) during blending and coating processes. However, exposure is expected to be minimised through the automatic application of the coatings by rollers, in a large application unit within a ventilated room, under supervision by workers using personal protective equipment.

After application, the coating containing the notified polymer will be cured into an inert matrix and the polymer will be unavailable for exposure.

PUBLIC EXPOSURE

The notified polymer will not be available to the public. The public may come into contact with the coating containing the notified polymer on metal beverage cans. However, the notified polymer will be bound in an inert matrix and is not expected to be bioavailable, unless leaching or migration occurs.

6.2. Toxicological Hazard Characterisation

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

6.3. Human Health Risk Assessment**OCCUPATIONAL HEALTH AND SAFETY**

The OHS risk presented by the notified polymer is expected to be low, based on the assumed low hazard of the notified polymer and the engineering controls and personal protective equipment expected to be used by workers to minimise exposure.

PUBLIC HEALTH

The public may come into contact with cans to which coatings containing the notified polymer have been applied. However, the polymer will be cured into an inert matrix, and is not expected to be bioavailable, unless leaching or migration occurs. Migration studies performed on packaging coatings containing the notified polymer indicate that the notified polymer is not expected to migrate from the cured can coating above allowable limits specified by relevant regulatory and food contact authorities, and thus public exposure to the polymer is expected to be low. Therefore, the risk to public health is not considered to be unreasonable given the assumed low hazard and the expected low exposure to the notified polymer.

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 a licensed off site waste disposal centre.

There is potential for the release of the notified polymer during manufacturing, reformulation, application, equipment cleaning, from container residues and in the event of an accidental spill. It is estimated that up to 3% of the total volume of the notified polymer will be released as wastes from cleaning of equipment (<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, it is expected that no waste notified polymer will enter the sewerage system or natural waterways.

Once cured, the notified polymer is expected to be bound in an inert coating matrix and not available for direct release to the environment. The coated metal substrate containing the notified polymer is expected to 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 that generated in cleaning equipment and spills will ultimately be disposed of to landfill. The notified polymer is potentially hydrolysable, however, this is unlikely under standard environmental conditions. It is expected that the notified polymer will be immobile in landfill and slowly degrade to predominately water and oxides of carbon. During metal recycling, the notified polymer is expected to be destroyed by thermal decomposition to predominately form water vapour and oxides of carbon.

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% of the total volume of the notified polymer will be released as wastes from manufacturing process. These wastes are expected to be collected, treated and disposed of to landfill as inert solid wastes, which will eventually degrade by biotic and abiotic process. It is not expected to be readily biodegradable, but due to its high molecular weight, it is not expected to cross biological membranes and is therefore not expected to bioaccumulate. Thermal decomposition of the notified polymer will result in the formation of water vapour and oxides of carbon. In landfill, the solid wastes are not expected to be mobile and will degrade slowly.

Most of the notified polymer used in coatings for metal beverage cans 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 predominately 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 unreasonable risk to the environment.