File No: SAPLC/211

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Acrylic Polymer in SPU72739

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

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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/211	PPG Industries Australia Pty Ltd	Acrylic Polymer in SPU72739	No	≤ 10 tonnes per annum	Component of industrial paints

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 SDS should be easily accessible to employees.

- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (Safe Work Australia, 2015) or relevant State or Territory Code of Practice.

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

Safety Data Sheet
The SDSs of products containing the notified polymer were provided by the applicant. The accuracy of the information on the SDSs 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 exempt from publication include: chemical name, other names, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities, use details and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)
SPU72739 (product containing the notified polymer)
XC-69-6009 (product containing the notified polymer)

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	Colourless to light-coloured liquid*
Melting Point/Glass Transition Temperature	Not determined. The notified polymer is not isolated from solvent solution.
Density	1,050 kg/m^3 at 20°C*
Water Solubility	Not determined. The notified polymer is not isolated from the solvent solution and is expected to be dispersible in water.
Dissociation Constant	Not determined. The notified polymer contains a small proportion of carboxylic acid groups.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* Property for an imported product containing the notified polymer

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	1-10	1-10	1-10	1-10	1-10

Use
The notified polymer will not be manufactured in Australia. It will be imported as a component of formulations for reformulation into paints or as a component of finished paints for construction equipment. Finished paints containing the notified polymer will be applied by professional workers primarily by spray and possibly by brush and roller. Once the paint is applied and cured, the notified polymer will be contained within an inert matrix and hence will not be available for exposure.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard. The risk of the notified polymer to occupational and 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, NICNAS notes that the notified polymer contains residual monomers that are classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia.

7. ENVIRONMENTAL RISK ASSESSMENT

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE
Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the closed head 200 L steel drums of resin solution (containing < 80% solids resin solution of the notified polymer in a solvent mixture) or locally manufactured 20 L steel packaged containers of Part A of a 2-K polyurethane refinish paint or imported 18.9 L steel packaged containers of Part A of a 2-K polyurethane refinish paint which contain the notified polymer.

There is potential for release during reformulation and application. Any spills that occur during reformulation and packaging will be contained by bunding, collected with absorbent material and sent to a licensed off-site waste disposal centre. Up to 2% per annum of notified polymer as waste is expected to be generated due to spills and cleaning equipment during paint manufacture. Empty drums from import of resin solution (containing notified polymer) will be sent to licensed drum re-conditioners. A licensed waste disposal contractor will collect the solvent-borne waste from the reformulation process for disposal by incineration.

Professional spray painters will apply the paint to touch-up/refinish construction equipment for the majority of the time in a combination spray/oven booth that complies with Australian Standards. The spray booth is fitted with environmental control measures. Water curtains or a dry filter medium will collect excess spray. Where some parts are physically too big to fit, these are sprayed outside in the open air, with professional spray painters wearing air-fed self-contained breathing apparatus hoods. The coating is either air-dried or oven-baked at 60 °C to form a stable inert film.

There is potential for release of the notified polymer during mixing, spray-gun loading, spraying, equipment cleaning, from container residues and in the event of an accidental spill. Up to 20% of the notified polymer could be released through overspray within spray booths or in the open air. This will be captured by standard engineering controls, treated and the solid waste will be disposed to landfill. An estimated 2% of the notified polymer will remain as residues in containers, which will cure and

harden before disposal to landfill. Less than 1% of waste polymer will be generated from cleaning the application equipment. Therefore, the total waste polymer could amount to up to 25% of the import volume at market maturity. It is expected that no waste notified polymer would enter the sewerage system or natural waterways.

The remainder of the notified polymer will be bound in the paint matrix and not be available for direct release to the environment. Disposal of the construction equipment may be through landfill or recycling, and the fate of the paint will be related to that of the construction equipment.

ENVIRONMENTAL FATE

The notified polymer is expected to be hydrolytically stable and to not be readily biodegradable. Due to its hydrophobic nature, it is expected that the notified polymer in landfill will associate with sediments and organic phases of soil and sediments, and slowly degrade to simple carbon compounds. If spilt to water, it is not expected to dissolve but rather disperse or settle to sediment. It is not expected to be readily biodegradable but due to its high molecular weight, it is not expected to bioaccumulate. During metal recycling of construction equipment, the polymer will be combusted to 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 manufacture and end use of the notified polymer. It is envisaged that 2% waste would be generated from the manufacturing process. These wastes would be collected by licenced waste contractors and be disposed of in accordance with local government regulations. It is expected that practically all of the waste generated from end users (20% as overspray) will be disposed of in approved landfills as inert solid waste. In landfill, the notified polymer in solid wastes is expected to be immobile, and eventually will degrade through biotic and abiotic processes, and consequently, should not pose a significant risk to the environment.

Spills of notified polymer to land are expected to bind to soil and should not be mobile or affect groundwater due to very low water solubility. Spills of notified polymer to waters are not expected to dissolve due to the lack of water solubility, and the product is expected to disperse or to settle to sediment.

Most of the notified polymer used in construction equipment finishes will eventually be incorporated in metal recycling programs or sent to landfill for disposal following the equipment lifecycle. During reclamation, the notified polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon.

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

BIBLIOGRAPHY

Safe Work Australia (2015) Code of Practice: Spray Painting and Powder Coating, Safe Work Australia, https://www.safeworkaustralia.gov.au/doc/model-code-practice-spray-painting-and-powder-coating.