

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Macopol 214

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government Department of Health, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Australian Government Department of the Environment and Energy.

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:

Street Address:	Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX:	+ 61 2 8577 8888
Website:	www.nicnas.gov.au

**Director
NICNAS**

July 2019

Table of Contents

SUMMARY	2
CONCLUSIONS AND REGULATORY OBLIGATIONS.....	2
ASSESSMENT DETAILS.....	4
1. APPLICANT AND NOTIFICATION DETAILS.....	4
2. IDENTITY OF POLYMER	4
3. PLC CRITERIA JUSTIFICATION	4
4. PHYSICAL AND CHEMICAL PROPERTIES.....	4
5. INTRODUCTION AND USE INFORMATION.....	5
6. HUMAN HEALTH RISK ASSESSMENT.....	5
7. ENVIRONMENTAL RISK ASSESSMENT	5
BIBLIOGRAPHY	6

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
PLC/1557	Polynt Composites Australia Pty Ltd Rust-Oleum Australia Pty Ltd	Polymer in Macopol 214	No	≤ 10 tonnes per annum	Component of coatings and 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

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- 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 coatings and 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 SDS of a 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

Polynt Composites Australia Pty Ltd (ABN: 29 138 442 298)
14 Tullamarine Park Road
TULLAMARINE VIC 3043

Rust-Oleum Australia Pty Ltd (ABN: 86 112 409 923)
Unit 12, 4 Southridge Street
EASTERN CREEK NSW 2766

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 and use details.

2. IDENTITY OF POLYMER

Marketing Name(s)

Macopol 214 (product containing the notified polymer)

Molecular Weight

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

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	Viscous liquid
Melting Point/Glass Transition Temperature	Not determined
Density	926 kg/m ³
Water Solubility	Not determined. Expected to be low based on the high molecular weight and predominantly hydrophobic structure.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

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

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

Use

The notified polymer will be imported at < 60% concentration for reformulation into coatings and paints or as a component of finished coatings and paints. Finished coatings and paints will be applied by professional workers and do-it-yourself (DIY) users by brush, roller or spray.

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

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

The notified polymer will be imported into Australia as a component for reformulation in architectural coatings and hobby paints (both aerosol and brush) and/or in finished products. Spills or accidental release of the products containing the notified polymer during import, storage and transport are expected to be collected with adsorbents, and disposed of to landfill in accordance with local government regulations.

During reformulation, the notified polymer (up to 60%) will be manually weighed or metered directly from storage containers into a blending tank and mixed with other ingredients to form the finished surface coating product. Occasionally, the coatings may be reformulated in batch mixers, where addition of the notified polymer is semi-automated. The notifier has estimated that approximately 1% of the total importation volume of the notified polymer may be lost due to spills and readily contained and collected for disposal to landfill.

Manufacturing equipment will be rinsed with solvents where the notifier predicts that less than 1% of the importation volume of the notified polymer will be lost to washing manufacturing equipment. These washings will be stored in holding tanks on-site for disposal by licensed waste contractors. The notifier estimates that 1% of the notified polymer is anticipated to remain in storage containers as residues and disposed of to landfill.

During use, coatings containing the notified polymer are expected to be applied by brush, roller and by spray techniques. The overspray or spilt material will typically entail collection with adsorbents for disposal as solid wastes to landfill in accordance with local government regulations. Residues containing the notified polymer on brushes and rollers are expected to be rinsed into containers and then allowed to cure before disposal, as solid wastes, to landfill. Used brushes and rollers and wastes from container residues are expected to be disposed of to landfill in accordance with local government regulations.

Waste water from cleaning processes may be incorrectly disposed of to the sewer, drains or ground. The notified polymer is insoluble in water and is not expected to hydrolyse or ionise in the environmental pH range (4 – 9). Assuming a worst-case scenario where 5% of the total import volume of the notified polymer is released to water system and there is no removal at sewage treatment plants, the predicted environment concentration (PEC) is calculated to be 0.28 µg/L in river and 0.03 µg/L in ocean based on the release occurring nationwide 365 days a year [PEC = $10,000\text{kg/year} \times 5\% \div 365 \text{ days} \div (200 \text{ L/person/day} \times 24.386 \text{ million people})$]. The calculated PEC values and low aquatic hazard indicate that the notified polymer is not expected to reach ecotoxicologically relevant concentrations in the aquatic environment.

The notified polymer will share the fate of the coated article, which is ultimately expected to be disposed of to landfill. In landfill, the notified polymer will be neither bioavailable nor mobile. Furthermore, the notified polymer is not expected to cross biological membranes or bioaccumulate due to its high molecular weight and low water solubility. The notified polymer is expected to eventually degrade to form water and oxides of carbon via biotic and abiotic processes.

Therefore, based on its assumed low hazard and reported use pattern, the notified polymer is not considered 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>.