

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Dynapol L 952

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**

January 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	4
6. HUMAN HEALTH RISK ASSESSMENT.....	5
7. ENVIRONMENTAL RISK ASSESSMENT	5

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/1481	Evonik Australia Pty Ltd	Dynapol L 952	No	≤ 150 tonnes per annum	Component of industrial coatings and inks

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.
- 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 component of industrial coatings and inks, 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 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

Evonik Australia Pty Ltd (ABN: 31 145 739 608)
Suite 33, 1 Ricketts Road
MT WAVERLEY VIC 3149

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, spectral data, use details, purity, polymer constituents, residual monomers/impurities, and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

Dynapol L 952

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	Yellow solid
Melting Point/Glass Transition Temperature	70 °C
Density	1,210 kg/m ³ at 20 °C
Water Solubility	Insoluble
Dissociation Constant	Not determined
Particle Size	Not determined
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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Tonnes	2 – 10	10 – 30	25 – 70	50 – 150	150

Use

The notified polymer will be used as a component of industrial coatings and inks, and may be used as part of a coating for food contact applications.

No manufacturing of the notified polymer will be carried out in Australia. It will be imported in neat form as a granular solid. Prior to use, the notified polymer will be dissolved in organic solvent and used as a binder resin. The final concentration of the notified polymer in coatings and inks will be between 5 – 40%.

Application of the coating containing the notified polymer will be undertaken by professional workers in industry. The coatings will be mostly used on metal surfaces and the method of application will be by brush, roller or spray. The coatings will then be heat cured at 200 °C to produce the final film. Use of appropriate personal protective equipment (PPE) as suggested by the notifier in the application will minimise the potential 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.

The public report of this assessment will be forwarded to Food Standards Australia New Zealand (FSANZ) for their information, as food contact with the notified polymer may occur.

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 of a product for reformulation into finished coating and ink formulations. During reformulation, the product containing the notified polymer will be blended with other ingredients at industrial sites and packaged for retail. Release of the notified polymer to the environment during import, reformulation, storage, and transport is expected to be limited to accidental spills or leaks and residue in import packaging. Spills or accidental release of the products containing the notified polymer are expected to be collected with absorbents, and disposed of to landfill in accordance with local government regulations.

Coating products containing the notified polymer will be used in mainly commercial and industrial settings. During coating, the products containing the notified polymer are expected to be applied by spray, brush and roller techniques. During use, the notified polymer may be released to the environment as accidental spills and container residues. These releases are expected to be collected and disposed of to landfill in accordance with local government regulations. The main release of the notified polymer is likely from overspray during use, estimated by the notifier to account for up to 20 - 30% of the total import volume. The overspray will be collected and trapped onto filters and cured before disposal to landfills. 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.

The notifier has indicated that up to 10% of the notified polymer is expected to be used in ink products. The notified polymer in this application is expected to share the fate of the paper on which it is applied, that is, either disposed of to landfill or subject for paper recycling. During recycling processes,

waste paper is repulped using a variety of chemical agents which, amongst other things, to enhance detachment of inks from the fibres. It is estimated that the resultant worst-case predicted environmental concentration (PEC) in sewage effluent, assuming no removal, on a nationwide basis over 260 working days per year is 11.8 µg/L $[(150 \text{ tonnes/annum} \times 10\%) \div (200 \text{ L/day/person} \times 24.4 \text{ million person} \times 260 \text{ days/annum})]$. The actual PEC is expected be lower, as very little of the notified polymer is expected to partition to the supernatant water, due to its high molecular weight. Given the notified polymer is non-ionic and of low concern for aquatic hazard, the release of the notified polymer during paper recycling processes is not expected to lead to ecotoxicologically significant concentrations in the aquatic environment.

The notified polymer in coatings will share the fate of the coated article, which ultimately is expected to be disposed of to landfill or enter metal recycling. In landfill, the notified polymer will be present as cured solids, which will be neither bioavailable nor mobile. During metal recycling the notified polymer will be completely thermally decomposed. Based on its high molecular weight, the notified polymer is not expected to cross biological membranes, and is therefore unlikely to bioaccumulate. In landfill the notified polymer is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon.

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.