

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Acronal EDGE 6283

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 Agriculture, Water and the Environment.

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
PLC/1570	BASF Australia Ltd	Polymer in Acronal EDGE 6283	No	≤ 1,500 tonnes per annum	Component of 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

- If aerosols are formed during the use of the notified polymer, engineering controls and respiratory protection should be used to prevent inhalation exposure.

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 coatings, 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

BASF Australia Ltd (ABN: 62 008 437 867)
Level 12, 28 Freshwater Place
Southbank VIC 3006

Exempt Information (Section 75 of the Act)

Data items and details exempt from publication include: chemical name, other name, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

Acronal EDGE 6283 (product containing < 45% 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*	White liquid dispersion
Melting Point/Glass Transition Temperature*	0 °C
Density*	1,040 kg/m ³ at 20 °C
Water Solubility	Not determined. Predicted to be low, based on the polymer structure.
Particle Size	Not determined. Imported in aqueous suspension.
Reactivity	Stable under normal environmental conditions.
Degradation Products	None under normal conditions of use.

*Refers to polymer in aqueous suspension

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	≤ 1,500	≤ 1,500	≤ 1,500	≤ 1,500	≤ 1,500

Use

The notified polymer will not be manufactured in Australia. It will be imported at < 45% concentration as an aqueous dispersion and reformulated into end-use water based coatings at < 20% concentration. The end-use coatings will be used by professionals and do-it-yourself users and applied 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

Polymers without significant ionic functionality are generally of low concern to the environment. The safety data sheet of the imported product containing the notified polymer also indicates that it is not toxic to the aquatic organisms ($L(E)50 > 100 \text{ mg/L}$).

The notified polymer will be imported into Australia as an aqueous dispersion and reformulated into end-use coatings for wooden furniture and floor applications. Any waste produced during the reformulation processes is expected to be disposed of through an approved waste management facility. Release of the notified polymer in the event of accidental spills or leaks during reformulation, storage, transport and use is expected to be absorbed on suitable materials and disposed of to landfill, in accordance with local government regulations.

The coating formulation containing the notified polymer will be used by both professional workers and the public DIY users, and expected to be applied by brush, roller or spray. The main release of the notified polymer is likely from overspray during use, which will be collected and trapped onto materials such as newspaper, drop sheets and filters before disposal to landfill. The liquid waste from cleaning of professional application equipment is expected to be collected by an approved waste contractor and disposed of safely.

The notifier has indicated that DIY users will only comprise 7% (105 tonnes per annum) of the market. As the worst-case scenario, it is assumed that up to 5% of the notified polymer used by DIY users may be incorrectly disposed of to the sewer, drains, or ground from waste and washing of application equipment. Assuming the worst-case where the releases occur nationwide over the entire year with no removal of the notified polymer during wastewater treatment, the predicted environmental concentration (PEC) is estimated to be $2.95 \mu\text{g/L}$ [$0.05 \times 105000 \text{ kg/year} \div 365 \text{ days/year} \div (24.386 \text{ million persons} \times 200 \text{ L/person/day})$]. As the notified polymer is indicated to be not toxic to the aquatic organisms, the release of the notified polymer is not expected affect the aquatic environment.

Most of the notified polymer is expected to share the fate of the articles to which it has been applied, to be disposed of to landfill at the end of their useful lives. Residual notified polymer in empty containers are expected to be disposed of to landfill, in accordance with local government regulations. In landfill, the notified polymer will be present as cured solids and will be neither bioavailable nor mobile. The notified polymer is not expected to bioaccumulate due to its high molecular weight. The notified polymer in landfill and water is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon and nitrogen.

Therefore, based on its assumed low hazard and the assessed 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>.