

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

**POLYMER OF LOW CONCERN PUBLIC REPORT**

**Polymer in Acure 510-100 and Acure 510-170**

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.

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/1326	Nuplex Industries (Aust) Pty Ltd	Polymer in Acure 510-100 and 510-170	No	≤ 100 tonnes per annum	Component of industrial and automotive 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

- 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, noting that the formulation as introduced may be classified because of hazardous impurities.

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

- A copy of the (M)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.
- (2) Under Section 64(2) of the Act; if
  - the function or use of the notified polymer has changed from component of industrial and automotive coatings, or is likely to change significantly;
  - the amount of notified 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 (M)SDS of products containing the notified polymer were provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

## ASSESSMENT DETAILS

### 1. APPLICANT AND NOTIFICATION DETAILS

**Applicants**

Nuplex Industries (Aust) Pty Ltd (ABN: 25 000 045 572)  
49–61 Stephen Road  
BOTANY NSW 2019

**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, residual monomers/impurities and import volume.

### 2. IDENTITY OF POLYMER

**Marketing Name(s)**

Acure 510-100  
Acure 510-170

**Molecular Weight**

Number Average Molecular Weight (Mn) is > 1,000 Da

### 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	Liquid*
Melting Point/Glass Transition Temp	Unknown
Density	960 kg/m <sup>3</sup> (calculated)
Water Solubility	Expected to be low based on the predominantly hydrophobic structure of the notified polymer.
Dissociation Constant	Not determined. The notified polymer does not contain any functional groups that are expected to dissociate in water
Reactivity	Stable under normal environmental conditions
Degradation Products	Carbon dioxide and water

\* at a concentration of > 80% in solvent.

## 5. INTRODUCTION AND USE INFORMATION

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

Year	1	2	3	4	5
Tonnes	40–100	40–100	40–100	40–100	40–100

#### Use

The notified polymer will be imported as a component of industrial and automotive coatings (at a concentration of > 80%) for use in automobile manufacture, bridge and infrastructure coating, and furniture and wood product manufacture. The coatings containing the notified polymer will be shipped in IBCs (1000 kg), drums (200 kg) and pails (10–20 kg) for distribution to industrial customers. The notified polymer may also be manufactured in Australia. Manufacturing will occur in a closed environment using automated processes with specified PPE.

The notified polymer will be reformulated with other raw materials (pigments, fillers, flow additives) in a closed environment using an automated process with specified PPE to produce the final coating products (containing the notified polymer at a concentration of < 30%).

The notified polymer is only intended for industrial/professional use and will be applied under controlled conditions. Products containing the notified polymer will be applied by experienced workers using spray equipment, brush or roller.

## 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. These are present in the notified polymer as introduced.

## 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 may be imported or manufactured in Australia, for further formulation into solvent based paint or for direct end-use, in a variety of industrial application areas.

Most of the notified polymer will be irreversibly incorporated within the inert paint matrix after coating application. Up to 1% of the import volume of the notified polymer may be released during the cleaning processes during manufacture and reformulation. Waste is expected to be collected by a registered trade waste facility for disposal to landfill. Therefore, release of the notified polymer to the aquatic environment is not expected from manufacture and reformulation. Losses due to application are expected mainly from overspray and is estimated to vary from 20% to 60% of the used volume. Any overspray is expected to be captured and collected for disposal to landfill. Up to 1% of the notified polymer is expected to be released to sewer from washings of application tools and containers.

In a sewage treatment plant, the notified polymer is expected to be efficiently removed from the water column due to its high molecular weight and limited water solubility, and is not expected to be released to surface water in ecotoxicologically significant concentrations. The notified polymer associated with substrates after coating is expected to share the fate of the painted articles. This may

be to landfill, or to undergo thermal decomposition into water and oxides of carbon oxides during the metal recycling process. When disposed of to landfill, the notified polymer is expected to eventually degrade to form water and oxides of carbon.

The notified polymer is not expected to be readily biodegradable. Due to its high molecular weight, the notified polymer is not expected to cross biological membranes and it is therefore not expected to bioaccumulate. 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, <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/spray-painting-and-powder-coating>.