File No. PLC/1447

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

**POLYMER OF LOW CONCERN PUBLIC REPORT**

**Polymer in Emultex VV 530**

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:


| | |
|---|---|
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**Director**
**NICNAS**


September 2017

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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/1447 | Synthomer Australia Pty Ltd | Polymer in Emultex VV 530 | No | ≤ 60 tonnes per annum | Component of sealants and adhesives |

## 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**

- Water insoluble high molecular weight polymers in respirable size (< 10 μm) have the potential to cause lung overloading. Respiratory protection and local exhaust ventilation should be used to prevent inhalation exposure if the notified polymer is expected to become airborne.

  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 a component of sealants and adhesives, 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 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**
Synthomer Australia Pty Ltd (ABN: 37 612 084 910)
C/O Cosec Consulting Pty Ltd
58 Gipps Street
COLLINGWOOD VIC 3066

**Exempt Information (Section 75 of the Act)**
Data items and details claimed exempt from publication: chemical name, other names, CAS number, molecular and structural formulae, molecular weight, spectral data, polymer constituents, and residual monomers/impurities.

## 2. IDENTITY OF POLYMER

**Marketing Name**
Emultex VV 530 (product containing the notified polymer at ≤ 70% concentration)

**Molecular Weight**
Number Average Molecular Weight (Mn) is > 10,000 Da

## 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* | White aqueous dispersion |
| Melting Point/Glass Transition Temperature | Not determined |
| Density* | 900 – 1100 kg/m$^3$ |
| Water Solubility | Not determined; expected to be insoluble |
| Reactivity | Stable under normal environmental conditions |
| Degradation Products | None under normal conditions of use |

* Properties of Emultex VV 530, an aqueous dispersion of the notified polymer at ≤ 70% concentration

## 5. INTRODUCTION AND USE INFORMATION

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

| *Year* | *1* | *2* | *3* | *4* | *5* |
|---|---|---|---|---|---|
| Tonnes | 60 | 60 | 60 | 60 | 60 |

**Use**
The notified polymer will be used as a component of sealants and adhesives. Manufacturing of the notified polymer will not be carried out in Australia. The notified polymer will be imported at ≤ 70% concentration in aqueous dispersion and reformulated with other ingredients in blending tanks or in batch mixers. The formulated sealants and adhesives containing ≤ 40% concentration of the notified polymer will be used by both workers and members of the public. The finished products will be applied to the required materials by either brush or applicator with no spray applications expected.

## 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 not present in the notified polymer as introduced above the cut off concentrations for classification.

The notified polymer is a water-insoluble high molecular weight (Mn > 10,000 Da) polymer with certain fractions of the molecules > 70,000 Da. Inhalation of polymers with molecular weights > 70,000 Da has been linked with irreversible lung damage due to lung overloading and impaired clearance of particles from the lung, particularly following repeated exposure (US EPA, https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/high-molecular-weight-polymers-new, accessed on 20 September 2017). However, based on the proposed use scenarios in sealants and adhesives, significant inhalation exposure to the notified polymer is not expected under normal use conditions.

## 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 an aqueous dispersion for reformulation into sealants and adhesives. Accidental spills of the notified polymer during import, transport, storage or reformulation are expected to be adsorbed onto a suitable material and collected for disposal in accordance with local regulations. Small amounts of the notified polymer may remain as residues in empty import and end use containers, which are expected to be disposed of in accordance with local regulations. Solvent washing from reformulation equipment cleaning is expected to be treated as onsite industrial waste and collected by a licensed contractor.

The finished products will be applied onto the required materials by either brush or applicator by professional contractors, and Do-It-Yourself (DIY) users. It is expected that ≤ 5% of the notified polymer used by DIY users may be incorrectly disposed of to the sewers. Assuming the releases occurs nationwide and over the entire year, this is unlikely to lead to ecotoxicologically relevant concentrations of the notified polymer in the aquatic environment.

Based on its use pattern, most of the notified polymer is expected to share the fate of the articles on which it applied to, to be either recycled for substrate reclamation or disposed of to landfill at the end of their life cycle, thus significant release of the notified polymer to the aquatic environment is not expected. 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 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 assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.