

File No PLC/902

March 2010

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

FULL PUBLIC REPORT

Polymer in Setalux 17-1447

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Department of Health and Ageing, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Department of the Environment, Water, Heritage and the Arts.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at our NICNAS office by appointment only at 334-336 Illawarra Road, Marrickville NSW 2204.

This Full Public Report is also 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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FULL PUBLIC REPORT**Polymer in Setalux 17-1447****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

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

De Beer Australasia Pty Ltd (ABN 41 080 461 230)
Unit 11/8 Kerta Road
KINCUMBER NSW 2251

NOTIFICATION CATEGORY

Polymer of Low Concern

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, Use Details and Import Volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

Canada (2007)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Setalux 17-1447 (containing the notified polymer at < 80%)

MOLECULAR WEIGHT (MW)

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

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

Molecular Weight Requirements
Functional Group Equivalent Weight (FGEW) Requirements
Low Charge Density
Approved Elements Only
Stable Under Normal Conditions of Use
Not Water Absorbing
Not a Hazard Substance or Dangerous Good

Criterion met

Yes
Yes
Yes
Yes
Yes
Yes
Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	Colourless viscous liquid*
Glass Transition Temp	62°C (theoretical)
Density	1044 kg/m ³ at 20°C*
Water Solubility	Insoluble, based on results of a test performed according to OECD TG 120 on Setalux 17-447, which is consistent with the structure of the notified polymer.
Dissociation Constant	The notified polymer contains acid group functionality, which is expected to show typical acidity.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functionality but hydrolysis is not expected to occur under ambient environmental conditions.
Degradation Products	None under normal conditions of use.

*For Setalux 17-1447 containing up to 80% notified polymer.

5. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	1	2	3	4	5
Tonnes	1-10	3-10	10-30	10-30	10-30

Use

Component of industrial automotive coatings.

The finished coatings (containing < 30% of the notified polymer) will be applied by spray application in spray booths at auto repair workshops.

Mode of Introduction and Disposal

The notified polymer will be initially imported as a formulated clearcoat at a concentration of < 60%. Within 5 years it will be imported as a solution at a concentration of < 80% that will be formulated with additives to produce a finished clearcoat containing the notified polymer at < 60%.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Occupational Health and Safety Risk Assessment

Reformulation

Dermal and ocular exposure to the notified polymer (at up to 80%) may occur during weighing and transfer to the mixing vessels, when taking samples for quality control testing, equipment cleaning, and packaging of the formulated product (containing the notified polymer at up to 60%). However, exposure to significant amounts of the notified polymer should be limited by the proposed personal protective equipment (coveralls, gloves, boots and safety glasses) worn by all workers and the automation of the process.

End-use

Dermal and ocular exposure to the notified polymer at up to 60% may occur during mixing to form the finished coating. Dermal, ocular and inhalation exposure to the notified polymer at up to 30% may occur during spray application. The risk of exposure, however, should be minimal as the spray paint will be applied in a ventilated spray booth by workers using protective equipment including a full face respirator. After application and once dried, the coating containing the notified polymer will be cured into an inert matrix and hence will be unavailable to exposure.

Overall, the OHS risk presented by the notified polymer is not considered to be unacceptable, based on the minimal exposure to workers and the assumed low hazard of the polymer.

Public Health Risk Assessment

The notified polymer is intended for use by professional spray painters in auto repair workshops only, and will not be sold to the public. Following application, the notified polymer will become trapped within a film and will not be bioavailable. Therefore, the risk to public from exposure to the notified polymer is considered negligible.

7. ENVIRONMENTAL IMPLICATIONS**Hazard Characterisation**

No ecotoxicological data were submitted. Anionic polymers are known to be moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. This does not apply to the notified polymer and it is therefore unlikely to be an overchelation hazard to algae.

Environmental Risk Assessment

Up to 2% of the notified polymer may be released during formulation as spills, container residues and waste material. These releases will be collected for disposal to landfill. A maximum of 3% will be released as container and equipment washings during use, which will be sent to a licensed hazardous waste facility for disposal in accordance with state/territory hazardous waste standards. The main release (up to 30% as overspray during use) will typically entail landfill disposal, after interception by spray booth filters. Discarded end use articles containing the notified polymer within the cured paint film will be disposed to landfill, or recycled for metals reclamation which will entail thermal decomposition of the paint to form oxides of carbon and water vapour. In landfill, the notified polymer will be present as high molecular weight crosslinked solids which will be neither bioavailable nor mobile. Therefore, the notified polymer is not expected to pose a risk to the environment when it is used as proposed.

8. CONCLUSIONS AND RECOMMENDATIONS**Human health risk assessment**

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment

Based on the reported use pattern, the notified polymer is not expected to pose a risk to the environment.

Recommendations**CONTROL MEASURES****Occupational Health and Safety**

- 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.

- Spray application should be carried out in accordance with the National Guidance Material for Spray Painting.
- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Disposal

- The notified polymer should be disposed of to landfill.

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

Regulatory Obligations

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 automotive 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 chemical 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 MSDS of the products containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.