

File No PLC/783

August 2008

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

FULL PUBLIC REPORT

Polymer 3 in Autospeed Paint

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 3 in Autospeed Paint****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Orica Australia Pty Ltd (ABN 99 004 117 828)
1 Nicholson Street
Melbourne VIC 3000

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 and Residual Monomers/Impurities.

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

None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

440-Line Autospeed PT Tinters (Products containing the notified polymer)
427-Line Autospeed PR 2K Tinters (Products containing the notified polymer)

OTHER NAME(S)

Acrylic Polymer

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) > 10000 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:	Clear solid resin
Melting Point	60°C
Density	1138 kg/m ³ (temperature unspecified)
Water Solubility	< 5 × 10 ⁻³ g/L at 20°C, consistent with the largely hydrophobic structure (Test report not sighted).
Dissociation Constant	Contains potentially anionic group expected to have pKa ~ 4.5 and will be ionised throughout the environmental pH of 4-9.
Particle Size	The notified polymer will be imported in solution as part of paint.
Reactivity	Stable under normal environmental conditions. While the notified polymer contains hydrolysable functionality, this is not expected to occur within the environmental pH range of 4 – 9.
Degradation Products	None under normal conditions of use.

5. INTRODUCTION AND USE INFORMATION

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

Year	1	2	3	4	5
Tonnes	10-30	30-60	30-100	30-100	30-100

USE

The paint products containing the notified polymers at < 10% are used for automotive spraying painting, both for the new car and car repair markets.

The imported paints containing the notified polymer will not be reformulated or repackaged in Australia.

Mode of Introduction and Disposal

Import will be through the port of Melbourne, as a component of paint in 0.3-4.3 L containers.

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.

Water insoluble high molecular weight (>10000 Da) polymers used in respirable size range (< 10 µm) have the potential to cause lung overloading. No information is available on the inhalation toxicity of the polymer.

Occupational Health and Safety Risk Assessment

As the polymer meets the low concern criteria and exposure is expected to be controlled by use of engineering controls and/or personal protective equipment, the risk to workers is not considered significant. If respirable or inhalable aerosol particles are generated by spray application, a higher level of controls, including respiratory protection, would be required to avoid inhalation exposure. The risk of effects from inhalation exposure cannot be excluded.

If the notified polymer is introduced in powder form, measures would be needed to minimise the inhalation exposure.

Public Health Risk Assessment

The notified polymer is intended only for use in industry by professional spray painters in auto repair workshops and automotive manufacturing plants and therefore public exposure to the notified polymer is not expected. Following application to automobile surface, the notified polymer will become trapped within a film and will not be bioavailable. Exposure of the public to the notified polymer is very low and therefore risk is

considered low.

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 overchelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. This is unlikely to apply to the notified polymer. Additionally, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

Environmental Risk Assessment

As release to the aquatic environment is not expected at any stage of the notified polymer's lifecycle within Australia, the notified polymer is not expected to pose an unacceptable risk to the aquatic environment based on its reported use pattern.

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 health of the public.

Environmental risk assessment

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

Recommendations

CONTROL MEASURES

Occupational Health and Safety

- Specific engineering controls, work practices or personal protective equipment 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*.
- If the notified polymer is introduced in powder form, safe work practices, engineering controls and personal protective equipment should be used to minimise inhalation exposure.
- 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.

Environment

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 paints for spray-painting, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased from 100 tonne per year, or is likely to increase, significantly;
 - if 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 were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.