File No PLC/864

February 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polyurethane in Autowave MM

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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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Akzo Nobel Car Refinishes Australia Pty Ltd (ABN 26 087 571 882)
269 Williamstown Road
Port Melbourne, VIC 3207

NOTIFICATION CATEGORY
Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Polymer Name, CAS Number, Molecular and Structural Formulae, Monomer composition, Residual Monomers, Spectral Data and GPC Data.

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)
Polyurethane in Autowave MM

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	*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:	Colourless to light yellow liquid
Melting Point/Glass Transition Temp	0°C
Density	1050 kg/m^3
Water Solubility	>280 g/L at 20°C The notified polymer is a waterborne resin solution and has a high proportion of polar sub-units which impart the water solubility.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups, but hydrolysis is expected to be slow in the environmental pH range (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	<1	<1	<1	<1	<1

Use
The notified polymer is a component of automotive refinish paints and industrial coatings.

The notified polymer is imported in steel cans up to 5 L volume and at a concentration of up to 2%.

The notified polymer will not be manufactured, reformulated or repackaged in Australia and it will be transported to the customers (mainly crash repair shops) in the original packaging.

Workers will open cans of the coating containing the notified polymer in a mixing room. If additional viscosity reduction (thinning) is required, the worker will transfer the coating to a container where additional reducer is added. Viscosity is normally measured with an efflux cup (Ford or Zahn type). The "as received" or reduced coating is then transferred to a reservoir for spray equipment application. The reservoir may be a pressure pot or a cup attached to the spray gun that feeds the gun through aspiration or gravity.

The worker will then take the coating into a spray booth, which could be a downdraft, partial downdraft or a cross-draft type of booth. The coating is then applied to the car either to a selected small spot, a body panel or the entire car depending on the size of the area under repair. Parts on the car not being painted would be masked off with tape and paper.

Mode of Introduction and Disposal
The notified polymer will be imported by sea via the Port Melbourne, Victoria, or the Port of Botany, Sydney. The notified polymer is a component of finished paint products at a concentration of up to 2% in steel cans of up to 5 L volume. The imported paint products will be transported from the dockside to the Port Melbourne and Wetherill Park warehouses and from the warehouses to distribution outlets across Australia by road.

Excess coating not used during the notified polymer spraying or coating application would be dumped into a hazardous waste container. Spray equipment would be cleaned with an appropriate solution or solvent. Cleaning equipment and the hazardous waste receptacle is typically located in the mixing room.

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
Dermal and ocular exposure to the notified polymer may occur during transportation and warehousing only in

the event of an accident resulting in fracture of cans, leaks and spillages. This will be limited as the can volume is 5 L and the concentration of the notified polymer is only up to 2% in the paint.

Spray painters may come into contact with the notified polymer at a concentration of up to 2% through dermal, inhalation and ocular routes form direct contact with drips, spills and splashes during transfer of the paint to the spraying equipment, manual paint application and equipment cleaning and maintenance.

The potential for exposure will be limited by the work place controls. The spray paint is applied in a well ventilated spray booth by workers using appropriate personal protective clothing including face mask. After application and once dried, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable to exposure.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the low exposure to workers and the low intrinsic hazard of the polymer.

Public Health Risk Assessment
The notified polymer is intended for use by professional spray painters in auto repair and industrial workshops only, and will not be sold to the public. Following application, the notified polymer will become trapped within a cured 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. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment
A maximum of 3% of the imported quantity of notified polymer 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, nitrogen and water vapour. In landfill, the notified polymer is expected will be present as a cured solid film and will not be 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 considered 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 Safe Work Australia *National Guidance Materials for Spray Painting* [NOHSC (1999)].

- 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/accidental release of the notified polymer should be handled by physical containment with subsequent collection with inert adsorbent material (sand, dirt, diatomaceous earth, vermiculite etc) for safe disposal. Do not allow to enter drains or waterways.

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.

(2) Under Section 64(2) of the Act; if
  – the function or use of the notified polymer has changed from paint or coating use in industrial setting 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 product 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.