File No PLC/830

May 2009

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in 2K HS Premium Clear 420

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:

Street Address:	334 - 336 Illawarra Road MARRICKVILLE NSW 2204, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX	+ 61 2 8577 8888.
Website:	www.nicnas.gov.au

Director
NICNAS

TABLE OF CONTENTS

FULL PUBLIC REPORT 3
1. APPLICANT AND NOTIFICATION DETAILS 3
2. IDENTITY OF CHEMICAL 3
3. PLC CRITERIA JUSTIFICATION 3
4. PHYSICAL AND CHEMICAL PROPERTIES 3
5. INTRODUCTION AND USE INFORMATION 4
6. HUMAN HEALTH IMPLICATIONS 4
7. ENVIRONMENTAL IMPLICATIONS 5
8. CONCLUSIONS AND RECOMMENDATIONS 5

FULL PUBLIC REPORT

Polymer in 2K HS Premium Clear 420

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:
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

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in 2K HS Premium Clear 420 (contains the notified polymer at < 50%)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 1000 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:	Not applicable as the notified polymer will be imported in solution.
Glass Transition Temp	72°C
Density	992 kg/m^3 for the product 2K HS Premium Clear 420 that contains the notified polymer at < 50%
Water Solubility	0.0025 mg/L at 20°C (estimated based on the repeating monomeric unit of the notified polymer). While this may be an underestimate since one water soluble monomer used was not considered in the estimation, this figure is considered reliable given the low percentage (1% wt) of the monomer ignored.
Dissociation Constant	pKa expected to be approximately 4.5 based on the existence of acidic groups in the notified polymer. The notified polymer is expected to be ionised in the environmental pH range of 4 – 9.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups. However, hydrolysis is unlikely to occur in 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	1-3	3-10	3-10	3-10	3-10

Use
The notified polymer will be used as a component of automotive paint at concentrations of < 50%.

The notified polymer will not be manufactured, reformulated or repackaged in Australia. The finished paint containing the notified polymer (< 50%) will be transported to the customers (crash repair shops) in the original packaging. If required the coating containing the notified polymer will be diluted with solvent to the required viscosity for application. The majority of these spray applications will occur in a spray booth. The level of ventilation present in the spray booth will vary between workshops. In smaller automotive refinish repair shops spray applications may occur outside of a spray booth.

Mode of Introduction and Disposal
The notified polymer will be imported by sea (in steel cans up to 5 L volume) via Melbourne or Sydney as a component of finished paint products at concentrations of < 50%. The imported paint products will be transported from the dockside to the notifier's warehouses at Port Melbourne and Wetherill Park, and then to distribution outlets across Australia by road.

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
Transport and storage
Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages.

Spray painting
Spray painters may come into contact with the notified polymer at a concentration of < 50% through dermal, inhalation and ocular routes. Exposure is expected to be minimal when workers using protective equipment apply the spray paint in a ventilated spray booth. Workers in automotive workshops who apply the paint containing the notified polymer (< 50%) manually using a spray gun will be exposed to aerosols via the inhalation, dermal and ocular routes. However, these workers are expected to wear PPE, including a respirator, safety glasses and gloves to minimise exposure.

After application and once dried, the notified polymer will be trapped within the coating and will not be bioavailable.

Overall, given the assumed low hazard of the notified polymer and expected low exposure, the OHS risk presented by the notified polymer is not considered to be unacceptable.

Public Health Risk Assessment
The notified polymer will not be sold to the public. There is potential for dermal exposure by the public to surface coatings on automobiles that contain the notified polymer. The notified polymer in the surface coatings will be trapped within a film and will not be bioavailable. Therefore, the risk to public health is expected to be 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, which may not apply to the notified polymer. 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
The notified polymer will be imported as a component of a finished automotive paint. Neither reformulation nor repackaging of the notified polymer will occur in Australia.

The majority of the notified polymer will be end up in landfill, and the rest will be decomposed during the recycling of the panel substrates that are associated with the paint containing the notified polymer. Either way the notified polymer will be degraded into water and oxides of carbon.

Based on the reported use pattern and the molecular structure, the notified polymer is not expected to pose an unacceptable risk to the aquatic ecosystem.

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 ASCC National Guidance Material 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 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 a component of automotive paint, 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 a 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.