

File No PLC/633

July 2006

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

FULL PUBLIC REPORT

Polymer in Setal 162 SS-84

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**Director
NICNAS**

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FULL PUBLIC REPORT**Polymer in Setal 162 SS-84****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

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

Nuplex Industries (Aust.) Pty Ltd (ABN 25 000 045 572)
49-61 Botany Road
Botany, NSW 2019

NOTIFICATION CATEGORY

Polymer of Low Concern

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, Polymer Constituents, Residual Monomers/Impurities, Use Details, and Manufacture/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

None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Polymer in Setal 162 SS-84

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1000

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</i>
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

The polymer is not isolated from solution, limited physicochemical data has been provided for a solvent solution containing 90% notified polymer

Appearance at 20°C and 101.3 kPa	Clear, slightly yellowish liquid viscous liquid (Setal 162 SS-84)
Pour point	< -20°C
Density	1094 kg/m ³ (Notified polymer, theoretical calculation)
Water Solubility	Not determined. Based on the structure, the notified polymer is not expected to be water soluble.
Reactivity	Stable under normal environmental conditions. The polymer contains hydrolysable groups; however hydrolysis is unlikely in the environmental pH range of 4 to 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

Import

Year	1	2	3	4	5
Tonnes*	10-50	10-50	10-50	10-50	10-50

Possible Manufacture

Year	1	2	3	4	5
Tonnes*	0-50	50-100	100-250	100-250	100-250

* Volume of Setal 162 SS-84 containing up to 90% notified polymer.

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

The notified polymer will be imported by sea in finished paint and paint-related products in steel cans (less than 5 L volume). The notified polymer will be in the finished products at a concentration of up to 20%. The imported paint products will be transported from the dockside to the Port Melbourne warehouse, and from the warehouse to distribution outlets across Australia by road.

The notified polymer may also be manufactured as the polymer dispersion Setal 162 SS-84 (concentration up to 90%). The polymer dispersion would be packed into bulk tankers, 1000 L intermediate bulk containers (IBCs) or 200 L drums. The polymer dispersion would be transported from the manufacturing plant in New South Wales to customer sites by road.

Reformulation/manufacture processes

The finished paint and paint-related products containing the notified polymer (up to 18%) will not be reformulated and will be transported to the customers (crash repair shops) in the original packaging.

At present there are no immediate plans to reformulate or manufacture the notified polymer. However, reformulation and/or manufacturing may occur in the future. The notified polymer would be manufactured by emulsion polymerisation in closed vessels in Sydney, NSW. After manufacture the dispersion (up to 90% notified polymer) would be filtered through sealed filters into intermediate bulk

storage (20-30 tonne tanks) or directly into IBCs or drums for distribution to customers' sites. The manufactured dispersion will then be reformulated to produce a range of surface coatings. No specific details were supplied for reformulation however a typical scenario is that the notified polymer is added to blending vessel and subsequently repackaged.

Use

The notified polymer is used as a component of paint used in the automotive industry. This paint will be applied by spraying cars in crash repair shops.

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.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

Manufacture

Dermal and ocular exposure may potentially occur during certain processes involving the notified polymer such as sampling, cleaning, maintenance, or by accidental spills during the packing process. However, exposure to significant amounts of the notified polymer is limited because of the largely automated processes, and the engineering controls and personal protective equipment worn by workers

Reformulation

Exposure to the notified polymer (up to 90%) could occur during reformulation processes such as transfer and sample fillings. The level of engineering controls and PPE is not known.

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 up to 20% through dermal and ocular routes from direct contact with drips, spills and splashes during transfer of the paint formulation to the spraying equipment, manual paint application, and equipment cleaning and maintenance. Workers may also be exposed to the notified polymer (concentration up to 20%) by inhalation of paint aerosols containing the notified polymer during spray application. In the majority of car repair shops exposure is expected to be minimal as the spray paint is applied in a ventilated spray booth by workers using protective equipment. In car repair shops where spray booths are not used the level of exposure per application is expected to be greater, however, exposure will be minimised by spray application in a well ventilated area and the use of PPE in accordance with the MSDS. The notifier has estimated that a spray painter will have the potential to be exposed to the notified polymer for a maximum of 3 h/week. It is estimated that approximately 500 spray-painters around Australia will be exposed to the notified polymer on a regular basis.

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.

PUBLIC EXPOSURE

The notified product is for industrial use only. The public will come into contact with surfaces (car surfaces, doors etc.) coated with the notified polymer. However, the notified polymer will be trapped within the coating and not bioavailable.

6.2. Toxicological Hazard Characterisation

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

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

Although exposure to the notified polymer could occur during manufacturing and reformulation processes and the spray application of paint containing the notified polymer, the risk to workers is considered to be low due to the intrinsic low hazard of the notified polymer.

PUBLIC HEALTH

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 low.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

The imported quantity of 50 tonnes of Setal 1616 SS-75 containing 90% of the notified polymer is equivalent to 45 tonnes of the notified polymer. Release of the chemical from storage sites may result due to accidental spills. It is estimated that a maximum of 0.2% resulting in up to 90 kg per annum of the notified chemical will be lost during spillage. Spills will be contained and soaked up with inert adsorbent material (sand, soil, vermiculite etc) and placed in sealable container for appropriate disposal.

If manufacturing occurs in Australia then it is expected that up to 250 tonnes of Setal 1616 SS-75 containing 90% of the notified polymer (225 tonnes) will be produced. It is expected that the potential manufacturing process would occur in enclosed automated equipment, with re-use of any polymer to the extent practicable. Assuming that 1% of the total potential manufactured amount of 225 tonnes is released during manufacturing, this results in 2250 kg. It is likely that the waste will be removed by licensed contractors and disposed of to landfill.

Residue in the <5 L steel containers is expected to be approximately 0.2% of the total amount imported or manufactured (270 tonnes). This will amount in up to 540 kg of the notified polymer being disposed of to landfill.

The majority of the chemical will be released as overspray during automotive spray painting operations. It is estimated that approximately 30% of the ready for use material will be lost using High Volume Low Pressure (HVLP) spray guns with slightly higher losses from more outdated spray guns. This is expected to result in an overall loss rate of approximately 35%, which is equivalent to a maximum of 94.5 tonnes of the notified polymer. The majority of spray painting is expected to be performed in spray booths where the overspray will be collected using filters and water scrubbers. The filters will be disposed of to landfill in accordance with local, State and Federal regulations. The polymer in the scrubber water is likely to cure as a component of the paint and be removed periodically and disposed of to landfill in accordance with local, State and Federal regulations. Any residual amount of polymer released to sewer is likely to adsorb to the sewage sludge in the Sewage Treatment Plant (STP) where it will be landfilled or incinerated. In smaller smash repair workshops, which may not have spray booths, the overspray will be collected on newspaper sheet and disposed of as domestic waste to landfill.

Approximately 1% amounting to 2 700 kg of the notified polymer is likely to be lost from cleaning of equipment. It is expected that this will be collected for disposal to landfill in accordance with local, State and Federal regulations.

ENVIRONMENTAL FATE

In landfill the notified chemical will eventually undergo in – situ degradation by biotic and abiotic processes to landfill gases including methane and oxides of carbon; and water vapour.

At the end of the useful life of the automotive panels on which the paint containing the notified

polymer is sprayed, the panels will be disposed of to landfill or recycled. During recycling the polymer will be thermally decomposed to oxides of carbon and water vapour.

7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

7.3. Environmental Risk Assessment

The notified chemical as a component of the finished product is imported into Australia. However, the notified chemical may be potentially manufactured and/or reformulated in Australia in the future. Release of the chemical from importation and handling would be limited to accidental spills. As the product is packaged in small steel containers any spills are likely to be easily contained with no release to the aquatic environment. Further release of approximately 35% of the total imported amount will occur from the use of the chemical mainly from overspray, which will be collected on site. This will be disposed of to landfill after curing of the paint. The cured paint containing the notified polymer will also be disposed of at the end of the useful life of the products to which the paint is applied by landfill or recycling. No release to the aquatic environment is expected from these routes of exposure.

Minimal release to the aquatic environment from spray booth scrubber water is expected as most of the polymer will be removed as cured paint before release to sewer and then further removed in the sludge at the sewage treatment plant (STP) before sewage outfall.

8. CONCLUSIONS

8.1. Level of Concern for Occupational Health and Safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

8.2. Level of Concern for Public Health

There is No Significant Concern to public health when used in the proposed manner.

8.3. Level of Concern for the Environment

The polymer is not considered to pose a risk to the environment based on its reported use pattern.

9. MATERIAL SAFETY DATA SHEET

9.1. Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

10. 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.

- 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 NOHSC *Approved Criteria for Classifying Hazardous Substances*, 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 by authorised 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.

10.1. Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under subsection 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 subsection 64(2) of the Act:
 - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.