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

FULL PUBLIC REPORT

Polymer in XC-84-6713

This Self 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 and Heritage. The data supporting this assessment will be subject to audit by NICNAS.

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**Director
NICNAS**

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FULL PUBLIC REPORT**Polymer in XC-84-6713****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

PPG Industries Australia Pty Ltd (ABN 82 055 500 939)
McNaughton Road Clayton VIC 3168

NOTIFICATION CATEGORY

Self Assessment: 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 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

USA TSCA Polymer Exemption (refer PE no. 3873).

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Polymer in XC-84-6713

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) $1000 < M_n < 10000$

3. COMPOSITION

<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. INTRODUCTION AND USE INFORMATION

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

Imported in repackaged 1 L containers and aerosol cans.

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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Tonnes</i>	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

USE

As a < 10% component of an automotive refinish coating.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

Manufacturing

The notified polymer will be imported as an ingredient of a ready to use application coating in containers of 1 litre maximum size and standard size aerosol packs. After import, it will be stored in a bonded warehouse to await distribution to customers.

The material will not be QC tested in Australia prior to distribution and use.
The application coating will contain < 5% of the notified polymer.

End Use

The liquid coating containing the notified polymer is used to prime common automotive substrates for superior adhesion of topcoats. The coating will be used in automotive refinish repair shops. It is not available to the general public.

Application is by spray, using either the prepackaged pressurised aerosol spray pack or conventional spray equipment. For conventional air spray, the coating is applied as it comes from the can.
The thin coating flash dries and can be topcoated within 5 minutes.

6. EXPOSURE INFORMATION

6.1. Summary of Occupational Exposure

Import, transport and distribution.

During transport and storage, workers are unlikely to be exposed to the notified polymer except when packaging is accidentally breached.

Paint Formulation

Exposure to the notified polymer at a low concentration (post manufacture) is expected. The application coating will contain < 5% of the notified polymer. The possibility of dermal exposure to drops and spills exists during opening and closing of container, transfer of the formulated coating product, quality control testing, cleaning of the tanks and general maintenance. Workers are expected to wear appropriate protective equipment i.e. safety glasses, gloves, protective clothing and respirator as per the MSDS.

Certain quality control tests involve spraying. The potential for exposure by inhalation of the notified polymer is prevented as the paint is only sprayed in a properly designed spray booth.

Overall exposure is expected to be low due to the relatively low concentration of the notified polymer and the use of engineering controls and PPE.

Paint Application

End users of the product may be exposed to the notified polymer up to 5% via dermal, ocular or inhalation routes during spraying of the coating. The product is supplied to professionals. They apply the spray within a booth with an exhaust/filter system and workers wear supplied air respirator or mask fitted with organic vapour cartridge, face shield, gloves and protective suit. Once the coating has been cured the polymer is bound within an inert matrix and therefore will be unavailable for exposure.

Overall, the risk to workers is expected to be low due to the expected low toxicity & low concentration of the notified polymer plus the use of PPE and engineering controls.

6.2. Summary of Public Exposure

Neither the notified polymer nor the application coating containing the notified polymer will be available to the public. The notified polymer is used in an automotive primer coating that is applied to an automotive part that is further topcoated (and the topcoat cured) prior to that automotive part reaching the public. The notified polymer does not exist as a separate entity in the polymer-coating network. Therefore, although the public will come into contact with the exterior of the car body parts, the notified polymer will be bound in an inert matrix and as such will not be biologically active.

6.3. Summary of Environmental Exposure

6.3.1. Environmental Release

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the packaged containers. The notified polymer is applied by spray, with 70% lost through overspray. This will be captured by conventional means and disposed of to landfill. The empty aerosol cans and conventional 1 litre cans plus any liquid waste are expected to be handled and disposed of by the automotive repair shops according to the MSDS. This involves incineration of the liquid waste by approved agents or allowing the liquid waste to harden for landfill disposal and recycling cans as part of council steel recycling programs.

6.3.2. Environmental Fate

The waste remaining in the empty import containers, overspray, cleaning equipment and spills will ultimately be disposed of to landfill. Leaching of the polymer from landfill is unlikely, given the low solubility of the substance. The polymer is not expected to cross biological membranes, due to the low solubility and high molecular weight, and should not bioaccumulate.

Over time the polymer may slowly degrade to water and simple carbon compounds via biotic and abiotic means.

During automobile recycling it is expected that the polymer will be destroyed.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Clear viscous liquid
Melting Point/Glass Transition Temp	Not applicable as a liquid
Density	1.04 kg/m ³ at 20°C
Water Solubility	Insoluble
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

7.1. Comments

Water solubility testing has not been conducted. The polymer is never isolated from solution. The imported polymer in solution is practically insoluble in water due to its complex structure and large molecular weight, with the mainly hydrophobic constituents outweighing the relatively small amount of polar functionality.

The dissociation constant has not been measured but the polymer contains no structural units which would dissociate.

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology

No toxicological data were submitted.

8.2. Human Health Hazard Assessment

The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

9.2. Environmental Hazard Assessment

Non-ionic polymers with NAMW > 1000 are of low concern. In addition, following application and top coating, the notified polymer will be within an inert matrix and be unavailable to organisms

10. RISK ASSESSMENT

10.1. Environment

No aquatic exposure is anticipated during importation and end use of the notified polymer.

It is expected that practically all of the waste generated from end users (70% as overspray) will be disposed of in approved landfills as inert solid waste. In landfill, the solid wastes should be contained in the paint matrix and not pose a significant risk to the environment.

Once used, the liquid coating containing the notified polymer is top coated with paint and the paint is cured. The resultant stable chemical matrix will pose little risk to the environment. After the useful life of the painted article, the notified polymer will suffer the same fate as the article. Any recycling and heating will destroy the polymer and release water vapour and carbon oxide.

The notified polymer is not likely to present a risk to the environment when it is transported, used, recycled and disposed of in the proposed manner.

10.2. Occupational Health and Safety

The OHS risk presented by the polymer is expected to be low due to limited exposure as a result of PPE and the predicted low toxicity of the notified polymer. Local ventilation is used during application and the application coating will be handled by professional painters.

The notified polymer may be present in formulations containing hazardous ingredients. If these formulations 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.

10.3. Public Health

The coating formulated with the notified polymer is intended for use by professional spray painters in automotive refinish repair shops and will not be sold to the public. Following application, the notified polymer will be top coated and subsequently trapped within a cured film.

The risk to the public from exposure to the notified polymer is considered to be negligible.

11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS

11.1. Environmental Risk Assessment

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

11.2. Human Health Risk Assessment

11.2.1. Occupational health and safety

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

11.2.2. Public health

There is Negligible Concern to public health when used in the proposed manner.

12. MATERIAL SAFETY DATA SHEET

12.1. Material Safety Data Sheet

The notifier has provided MSDS in accordance with the schedule item B 12 of the *ICNA Act*. The accuracy of the information on the MSDS remains the responsibility of the applicant.

13. 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.

Environment

- The following control measures should be implemented by the coating applicator to minimise environmental exposure during use of the coating containing the notified polymer:
 - apply the coating containing the notified polymer in a spray booth conforming to the Australian standard, AS/NZ 4114.1-2.

Disposal

- The liquid containing the notified polymer should be disposed of to landfill or by incineration.
- Empty containers should be sent to local recycling or waste disposal facilities.

Emergency procedures

- Spills/release of the notified polymer should be handled by absorbing with sand and put into suitable containers for disposal. Contaminated containers can be reused after cleaning.
- Do not flush the product containing the notified polymer into surface water or sewer systems.

13.1. 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.