

File No PLC/611

January 2006

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

FULL PUBLIC REPORT

Superchlone 225L

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 and Heritage.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at:

Library
Australian Safety and Compensation Council
25 Constitution Avenue
CANBERRA ACT 2600
AUSTRALIA

To arrange an appointment contact the Librarian on TEL + 61 2 6279 1162 or email ascc.library@dewr.gov.au

This Full Public Report is 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. COMPOSITION	3
4. INTRODUCTION AND USE INFORMATION.....	4
5. PROCESS AND RELEASE INFORMATION	4
5.1. Operation Description.....	4
6. EXPOSURE INFORMATION	4
6.1. Summary of Occupational Exposure	4
6.2. Summary of Public Exposure	5
6.3. Summary of Environmental Exposure.....	5
6.3.1. Environmental Release	5
6.3.2. Environmental Fate.....	5
7. PHYSICAL AND CHEMICAL PROPERTIES	5
8. HUMAN HEALTH IMPLICATIONS.....	6
8.1. Toxicology.....	6
8.2. Human Health Hazard Assessment.....	6
9. ENVIRONMENTAL HAZARDS	6
9.1. Ecotoxicology	6
9.2. Environmental Hazard Assessment	6
10. RISK ASSESSMENT	6
10.1. Environment	6
10.2. Occupational Health and Safety	6
10.3. Public Health	6
11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS.....	7
11.1. Environmental Risk Assessment	7
11.2. Human Health Risk Assessment.....	7
11.2.1. Occupational health and safety	7
11.2.2. Public health.....	7
12. MATERIAL SAFETY DATA SHEET	7
12.1. Material Safety Data Sheet	7
13. RECOMMENDATIONS	7
13.1. Secondary Notification	8

FULL PUBLIC REPORT**Superchlone 225L****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)
 PPG Industries Australia Pty. Ltd. (ABN 055-500-939)
 McNaughton Rd.
 Clayton, VIC, 3168

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 (NAMW and WAMW)
 Reactive Functional Groups
 Charge Density
 Polymer Constituents
 Residual Monomers/Impurities
 Use Details
 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
 Europe (EINECS), Japan (ENCS)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
 Superchlone 225L

MOLECULAR WEIGHT (MW)
 Number Average Molecular Weight (Mn) >10000

3. COMPOSITION

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 contains a high concern reactive functional group. The molecular weight > 10,000 therefore FGEW below 1000 is allowed.

The notified polymer meets the PLC criteria.

4. INTRODUCTION AND USE INFORMATION

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

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>	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3

USE

The notified polymer will be imported to Australia as finished automotive spray paints. It will be spray applied by robots and operators onto car bodies and then baked to form part of the paint finish of the car.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

QC Testing

The imported paint (containing less than 5% of the notified polymer) will be sprayed onto panels in a spraybooth having appropriate extraction. The panels are then baked in an oven and the finished paint film subjected to various tests.

Paint Application

The 200 L drums of paint (containing less than 5% of the notified polymer) will be pumped into the circulating mix tank using a dedicated lance, pipework and pump. Once in the tank, solvent is added to adjust the paint to application viscosity. This paint will be pumped around a circulation system from which it is sprayed onto car bodies by robots and operators in a dedicated ventilated spray area. Operators spray the paint onto specific areas of the car that are not painted by the robots. The painted cars travel through an oven where the notified polymer undergoes a heat activated chemical reaction with other polymers in the paint, thereby forming the final paint film on the car.

During production breaks, operators use cloths dampened with solvent to clean residual paint from the spray equipment.

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.

QC Testing

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 spraybooth.

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

The majority of the spray application is automatic (by robots). Where manual spray painting occurs (to certain areas of the car) the worker will wear a fully body suit and air supplied respirator. Exposure to the notified polymer at a maximum concentration of 5% could occur during transfer of the paint formulation and cleaning and maintenance. Overall exposure is expected to be low due to the low concentration of the notified polymer and the use of engineering controls and PPE. Workers are provided with appropriate PPE i.e. safety glasses, gloves, and protective clothing as per the Material Safety Data Sheet (MSDS).

Once the coating has been cured the polymer is bound within an inert matrix and therefore will be unavailable for exposure.

6.2. Summary of Public Exposure

The notified polymer will not be directly available to the public. The notified polymer is used in an automotive paint that is cured prior to reaching the public. Therefore, although the public will come into contact with the exterior of car bodies, the notified polymer will not be available for exposure.

6.3. Summary of Environmental Exposure

6.3.1. Environmental Release

The notified polymer will be imported into Melbourne in 200 L steel drums and or 20 L tins. From port, the notified polymer will be transported by road directly to the end-user. Here it will be transferred from the import containers to a mixing vat, where other ingredients will be added to produce the final coating product. This will then be applied as a spray by either automatic or manual means to vehicles in a spray booth. The notified polymer is then cured in an oven.

It is expected that up to 40% of the total imported quantity of notified polymer will be released from the end-user site as overspray and from equipment cleaning. It is expected that this quantity will be disposed of to landfill. Residual notified polymer in the 200 L steel drums is expected to account for less than 1% of the total imported quantity, and this should be removed during drum recycling and either sent to landfill for disposal or be thermally decomposed during incineration. Residual notified polymer in 20 L tins is expected to account for less than 2% of the total imported quantity. The 20 L tins containing the residual notified polymer are expected to be disposed of to landfill after the residue has dried.

6.3.2. Environmental Fate

The fate of notified polymer applied to vehicles is linked to that of the vehicle itself. It is expected that at the end of the life of the vehicle that the notified polymer will be either disposed of to landfill or more likely be thermally decomposed during metal reclamation processes.

Up to 43% of the total imported quantity of notified polymer is expected to be disposed of to landfill from the end-user site. In landfill, the notified polymer is expected to be in a dried matrix, and should remain associated with soil and sediment. Over time, the notified polymer is expected to degrade through biotic and abiotic processes to form simple carbon, hydrogen, oxygen and chlorine containing compounds.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	White opaque flowing emulsion in water
Melting Point/Glass Transition Temp	T _m 120-130°C; T _g 64°C
Density	930 kg/m ³ (temperature unspecified)
Water Solubility	0.175 g/L (temperature unspecified and no test report provided.) This is supported by the largely hydrophobic structure of the polymer.
Dissociation Constant	The polymer contains a small proportion of anionic functionality which is expected to have typical acidity.

Reactivity	Stable under normal environmental conditions. Will react with metals and/or basic compounds (eg amines) and liberate hydrochloric acid.
Degradation Products	None under normal conditions of use. At high temperatures the notified polymer will degrade and liberate hydrochloric acid.

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology

No toxicological end-points 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

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. However, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

10. RISK ASSESSMENT

10.1. Environment

During use, the notified polymer is unlikely to be released into the environment except during unanticipated spill incidents, which will be collected for disposal by incinerator or landfill. Approximately 43% of the notified polymer will enter the landfill environment arising from clean-up wastes, overspray and container residue. In the longer term, most of the notified polymer used in automotive coatings will eventually be incorporated in metal recycling programs or be sent to landfill for disposal following its lifecycle. During metal recycling, the notified polymer is expected to be thermally decomposed.

10.2. Occupational Health and Safety

The OHS risk presented by the notified polymer is expected to be low due to limited exposure as a result of the use of engineering controls and PPE, and the predicted low toxicity of the notified polymer.

10.3. Public Health

The paint formulated with the notified polymer is intended for use by professional spray painters in automotive manufacturing plants 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 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 as part of the notification statement. 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

- Prevent uncontrolled release to the environment.

Disposal

- Product: Excess product containing the notified chemical should be collected and allowed to harden prior to disposal to landfill.

Storage

- Product containing the notified polymer should be stored in suitably banded storage facilities.

Emergency procedures

- Spills/release of the notified polymer should be handled by physical containment and disposal of to secure landfill.

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.