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

FULL PUBLIC REPORT

Polymer in Uralac SC890 S2G3-50

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**Director
Chemicals Notification and Assessment**

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FULL PUBLIC REPORT**Polymer in Uralac SC890 S2G3-50****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Grace Australia Pty Ltd (ABN 41 080 660 117) of 1126 Sydney Road, Fawkner, Victoria 3060

NOTIFICATION CATEGORY

Synthetic 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 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)

PPG Industries Australia (PLC/312)

NOTIFICATION IN OTHER COUNTRIES

USA

2. IDENTITY OF CHEMICAL

OTHER NAME(S)

Styrene-acrylic modified polyester resin

MARKETING NAME(S)

Polymer in Uralac SC890 S2G3-50

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
No Substantial Degradability	Yes
Not Water Absorbing	Yes
Low Concentrations of Residual Monomers	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. INTRODUCTION AND USE INFORMATION

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>	< 1	< 1	< 1	< 1	< 1

USE

A component in a paint used in the packaging industry

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notified polymer will be imported as a component of a finished coating product incorporating the polymer in Uralac SC890 S2G3-50. The product containing the notified polymer will be imported in 200 kg dangerous goods approved steel drums transported in shipping containers. At this stage only an imported product containing the polymer in Uralac SC890 S2G3-50 is imported. In future, other finished products containing the polymer in Uralac SC890 S2G3-50 will be imported. No reformulation will be done in Australia. The concentration of the notified polymer in the imported product is 0.6%.

The drums containing the notified polymer will be moved to a coating machine, and the contents stirred. Suction (removal) and return hoses are placed into the opened drum to enable filling of the coating machine. At the conclusion of the coating operation, the coating machine tray and lines are drained, and the coating rolls and tray are cleaned with solvent. The drum containing the notified polymer is then closed and returned to be stored.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

RELEASE OF CHEMICAL FROM USE

Release of the notified polymer from use is expected to be small except in the event of an accident or major spill. For cleaning of equipment (0.1%) and during drum cleaning (1%) up to 11 kg of the notified polymer will be wasted. During the conversion of coated product into finished articles up to 20% of the coated area containing the notified polymer (200 kg) is assigned as waste. According to the notifier, the waste is collected for return to a recycling company and the coating in the waste is burned at the recycler's facility.

ENVIRONMENTAL FATE

The majority of the polymer will be tied to the fate of the finished product. Once applied and dried the polymer will be bound to the article and will be inert. Waste polymer is expected to partition to the sediment phase in an aqueous environment or to sediments and soils in landfill. This is based on the notified polymer's expected large Kow and Koc values, where hydrophobic nature is indicative of partitioning into the organic phase. The notified polymer is expected to undergo hydrolysis under extreme pH conditions. However, in the environmental pH range of 4 to 9, significant hydrolysis is unlikely to occur. Due to its low water solubility encapsulation in the coating, the polymer will remain bound within the soils and sediments of the landfill and is expected to be slowly degraded by the abiotic processes.

The notified polymer is not expected to cross biological membranes due to its high molecular weight and therefore is not expected to bioaccumulate.

6.2. Summary of Occupational Exposure

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

Worker exposure to the notified polymer during use is possible while opening and closing of the drums, stirring the contents, fitting and opening hoses, cleaning the tray and coater rolls, washing the tray and

coater rolls with solvents. The most likely route of exposures is dermal, and accidental eye contact. However, exposure to significant amounts of the notified polymer is limited because of the engineering controls and personal protective equipment (coveralls, chemical goggles, PVC gloves) worn by workers.

6.3. Summary of Public Exposure

The notified polymer is intended only for use in industry with little opportunity for exposure by the public.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Dissolved in solvent
Melting Point/Glass Transition Temp	33°C
Flash Point	57°C for the polymer in solution
Autoignition Temperature	240°C for the polymer in solution
Density	1.21 kg/m ³ (Polymer in isolation)
	1.05 kg/m ³ (Polymer in solution)
Water Solubility	Not determined
Remarks	The notifier indicates that the notified polymer is not isolated from the organic solvent in which it is produced and that as a result no water solubility data is available. A solution/extractability test was provided by the notifier. The results of the study indicate that the notified polymer is likely to have a low water solubility which is consistent with the predominantly hydrophobic character of its monomers.
Stability	Stable under normal condition
Dissociation Constant	Not determined
Remarks	The notified polymer is not expected to undergo dissociation at environmental pH range of 4 to 9.

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology

No toxicological information has been provided

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

As the notified polymer contains relatively small amounts of acid functionality, these are unlikely to be on alternating backbone C atoms, and the overall toxicity to algae is expected to be low.

10. RISK ASSESSMENT

10.1. Environment

The majority of the notified polymer will be applied as a coating to the external surface of food packaging containers and, once applied and cured poses little risk to the environment. During coatings production up to 11 kg per annum of waste containing the notified polymer will be generated from the cleaning of formulation equipment and the rinsing of import drums and up to a further 200 kg per

annum will be disposed of as waste sheets during coatings application. Wastes containing the notified polymer resulting from coatings application and empty import drums will be disposed of to landfill after evaporation of the solvent. The notifier indicates that incineration of wastes may also occur. At the end of their useful lives, the coated articles to which the coating has been applied will also be disposed to landfill.

The notified polymer is expected to be insoluble in water and as such is unlikely to be mobile in either aquatic or terrestrial compartments. As a consequence, in landfill it is expected to associate with soil and sediment and slowly degraded through biotic and abiotic processes to water and oxides of carbon, nitrogen and sulphur. Incineration of the notified polymer will produce water vapour and oxides of carbon.

Due to its high molecular weight (NAMW > 1000), the notified polymer is not expected to bioaccumulate.

Based on low environmental exposure resulting from its limited potential for release to sewer and high coating transfer efficiency, the likely risk to the environment is expected to be low.

10.2. Occupational Health and Safety

The notified polymer is not volatile and is of large molecular weight. Therefore, the OHS risk presented by the notified polymer is expected to be low.

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

Public exposure to the notified polymer is only likely to occur if there is a spill of the product during transport to the customer site. The public may have low-level contact with the notified polymer used on the external surface of packaging. However, the risk to public health will be negligible because once used, the notified polymer is bound within a matrix and becomes inert and unlikely to be bioavailable.

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

Disposal

- Once cured, solid waste containing the notified polymer should be disposed of in landfill or by incineration

Emergency procedures

Spills/release of the notified polymer should be contained as described in the MSDS (ie. Collect spilled material with an inert absorbent) and the resulting waste disposed of to an authorised 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.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.