

File No PLC/937

October 2010

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

FULL PUBLIC REPORT

Polymer in 5698 Series Oleoresinous Coatings

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 Sustainability, Environment, Water, Population and Communities.

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 Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

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:

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**Director
NICNAS**

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FULL PUBLIC REPORT**Polymer in 5698 Series Oleoresinous Coatings****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

The Valspar (Australia) Corporation Pty Limited (ABN 82 000 039 396)
203 Power Street
Glendenning, NSW 2761

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, 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 (1998)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

5698 Series Oleoresinous Coatings

OTHER NAME(S)

Oleoresin

MOLECULAR FORMULA

Unspecified

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) > 1,000 Da

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

Molecular Weight Requirements
Functional Group Equivalent Weight (FGEW) Requirements
Low Charge Density
Approved Elements Only
Stable Under Normal Conditions of Use
Not Water Absorbing
Not a Hazard Substance or Dangerous Good

Criterion met

Yes
Yes
Yes
Yes
Yes
Yes
Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Amber/gold solid
Melting Point/Glass Transition Temp	150°C
Density	1100 kg/m ³ at 23°C
Water Solubility	Not determined. It is expected to be insoluble due to its predominantly hydrophobic chemical structure and high molecular weight.
Dissociation Constant	Not determined. The notified polymer contains acid functions which are expected to show typical acidity (pK _a ~ 4 – 6).
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups, however, due to its limited solubility, hydrolysis is expected to be low under ambient environmental conditions.
Degradation Products	None under normal conditions of use.

5. 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>
Tonnes	1-3	1-3	1-3	1-3	1-3

Use

The notified polymer will be used as a component of can coatings.

The imported solution containing the notified polymer at a concentration of up to 60% will be decanted into a reservoir. The notified polymer will be transferred from the reservoir to rollers which then coat it on to sheet metal which is then fed into an oven to cure the coating. The coating will be applied using automated processes with exhaust ventilation.

Mode of Introduction and Disposal

The notified polymer will be imported into Australia in solution at a concentration of up to 60% in pails, drums and totes.

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

Dermal and ocular exposure may potentially occur during transfer of the solution containing the notified polymer ($\leq 60\%$ concentration) from the imported containers to a reservoir, and during the cleaning and maintenance of equipment. However, exposure to significant amounts of the notified polymer should be limited by the expected use of personal protective equipment by workers. Further exposure during application of coatings is not expected due to the use of enclosed, automated processes and PPE worn by workers.

Workers may come into dermal contact with surface coatings containing the notified polymer however, after curing the notified polymer will be incorporated into the polymer matrix and will not be available for exposure.

Although exposure could occur, the notified polymer is not considered to pose an unacceptable risk to the health of workers due to the expected control measures and the assumed low hazard of the notified polymer.

Public Health Risk Assessment

The imported notified polymer will not be available to the public. Members of the public may make dermal

contact with can coatings containing up to 60% notified polymer. However, the risk to public health is not considered unacceptable because the notified polymer will be bound within a matrix and is assumed to be of low hazard.

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. This does not apply to the notified polymer and any 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 coating formulation containing the notified polymer will be applied to sheet metal for cans using an application roller in an automated industrial process. During the application process, any residual coating formulation remaining in the application roller is removed by a scraper and returned into the reservoir via a drip tray for re-use. No significant environment releases are expected from this industrial process as the notified polymer is immobilised on the metal surface by heat curing and solid wastes from residues in containers are expected to be collected and disposed of to landfill. The cured coatings which are part of an inert matrix, may be sent to landfill or thermally decomposed during metal reclamation when coated metallic articles are disposed of at the end of their useful lives. The notified polymer is expected to be immobile in landfill. It is likely to degrade in landfill or by thermal decomposition to form water and oxides of carbon. Bioaccumulation is not likely based on the high molecular weight of the notified polymer and its limited potential for exposure to the aquatic environment when used as proposed.

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

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 expected 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.

- 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 surface coatings, 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.