File No PLC/819

February 2009

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Solsperse 64000

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, Water, Heritage and the Arts.

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 334-336 Illawarra Road, Marrickville NSW 2204.

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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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Orica Australia Pty Ltd (ABN 99 004 117 828)
1 Nicholson Street
MELBOURNE VIC 3000

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, 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)
No

NOTIFICATION IN OTHER COUNTRIES
USA

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Solsperse 64000

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 1000 Da

REACTIVE FUNCTIONAL GROUPS
The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
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

Appearance at 20°C and 101.3 kPa:	Dark orange viscous liquid.
Melting Point/Glass Transition Temp	Not determined. Liquid at ambient temperature.
Density	900 kg/m^3 at 15.6°C (for Solsperse 64000 containing < 30% notified polymer)
Water Solubility	< 0.0001 g/L at 20°C The result provided was 'partially soluble' which is interpreted as very slightly soluble. The method involved mixing the notified polymer and water (1:1). It was left overnight and the phases were observed.
Reactivity	Stable under normal 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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	10-30	10-30	10-30	10-30	10-30

Use
The notified polymer will be used as a dispersant in universal tinters for industrial decorative paints.

The notified polymer will be introduced in an aqueous polymeric solution at a concentration of < 30% and formulated into tinters (containing < 10% notified polymer) for incorporation into water and solvent borne paints. Approximately 95% of the tinters produced will be formulated into paints at paint manufacturing plants. The remaining (5%) will be used at retail trade depots for the industrial sector only. The finished paints containing the notified polymer at < 5% will be applied to various substrates including plaster, wood and metal by spray (~75%), roller (~15%) and brush (~10%) by professional applicators in industrial settings only.

Tinter manufacture
The imported aqueous polymer solution containing the notified polymer at < 30% will be weighed with other components and added directly into a mixing pot. The mixing pot will be transferred to a mixing station where it will be mixed with pigments in an enclosed system. The pigment dispersion (containing < 10% notified polymer) will then be passed through a bead mill before being packaged into 1 L cans or 20 L pails via automated filling lines. Laboratory staff for quality control testing will take samples of the dispersion. Maintenance and cleaning of equipment will occur on a regular basis.

Paint manufacture from tinters
At paint manufacturing plants, the tinters will be mixed with other components in large mixing vessels to give the finished paints. At retail trade depots, shop assistants will fill canisters on dispersing machines that release exact amounts of the tinter into the paint base. The resultant paint will then be mixed by shaking. The finished paints will contain < 5% of the notified polymer.

End use
Paints containing the notified polymer (at < 5%) will be applied to various substrates by spray (~75%), roller (~15%) and brush (~10%) by professional applicators only. Spray painting is expected to be largely conducted at industrial sites using spray booths. Local exhaust ventilation will be used at other times.

Mode of Introduction and Disposal
The notified polymer will be imported as part of an aqueous polymeric solution at a concentration of < 30% in 20 and 180 kg steel drums.

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
Tinter manufacture

Dermal and ocular exposure to the notified polymer (at up to 30%) may occur during weighing and charging of the mixing tanks, taking and testing quality control samples, connecting filling lines and maintenance and cleaning of equipment.

Paint manufacture from tinters
Dermal and ocular exposure to the notified polymer (at up to 10%) may occur during weighing and charging of the tinters to the mixing vessels and connecting filling lines at paint manufacturing plants, and during charging dispensing machines and formulation of custom shades of paints at retail trade depots.

End use
Professional painters may come into contact with the notified polymer (at up to 5%) through dermal, inhalation (during spray application) and ocular routes. The risk of inhalation exposure will be minimal where spray painting is conducted within a ventilated spray booth. At other times, although the risk of inhalation exposure will be higher, it should be minimised through the use of local exhaust ventilation. After application and once dried, the paint containing the notified polymer will be cured into an inert matrix and hence will be unavailable to exposure.

All workers that are likely to come into contact with the notified polymer will wear appropriate PPE (gloves, safety goggles and coveralls) to minimise exposure.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the minimal exposure to workers and the low intrinsic hazard of the polymer.

Public Health Risk Assessment
The notified polymer is intended for use by professional painters in industrial settings 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

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

Environmental Risk Assessment
Based on the proposed use pattern, the release of the notified polymer to the aquatic environment is expected to be low and dispersed. Adsorption to sludge, soil and sediment as well as dilution in receiving waters should reduce environmental concentrations to acceptable levels. Abiotic or slow biotic processes are expected to eventually degrade the notified polymer. Given the above, environmental exposure and the overall environmental risk are expected to be low.

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 considered 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 an ingredient in paints, 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 the 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.