File No PLC/762

May 2008

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Desmoseal S XP 2458

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:

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

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Bayer Australia Limited (Bayer Material Science) (ABN 22 000 138 714)
391 - 393 Tooronga Road
Hawthorn East
Victoria 3123

Ezi Floor Products (Vic) Pty Ltd (ABN 22 087 581 520)
Wareca, Unit 9, 1866 Princes Highway
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, Polymer Constituents, Residual Monomers/Impurities, Use Details, Import Volume, and Site of Reformulation

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
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Desmoseal S XP 2458

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

REACTIVE FUNCTIONAL GROUPS

Functional Group	Category	Equivalent Weight (FGEW)
Alkoxysilane	High Concern	< 2000 Da

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.
*Although the FGEW is less than 5000 Da as the NAMW of the notified polymer is greater than 10000 Da it is still considered to be a PLC.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	Clear yellow liquid
Pour point	-6°C
Density	1023 kg/m^3 at 20°C
Water Solubility	Not soluble in water
Dissociation Constant	Contains some dissociable groups but it is not expected to dissociate at the environmental pH range of 4-9.
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	300-1000	300-1000	300-1000	300-1000	300-1000

Use
The notified polymer is used as a binder for coating materials and adhesives in the flooring industry.
Reformulation of 80% of the imported product into moisture-curing coatings and adhesives will occur in Australia. The remaining 20% of the imported product will be re-exported overseas (without any reformulation or repackaging). The final product is used as a coating or adhesive for application (by roller or spray painting) to a wide range as substrates e.g. wood, plastic and metal. Wood board coatings will be applied at approximately 60% by rollers and up to 40% by spraying.

Reformulation processes
At the reformulation site two incoming goods receiving personnel will unload the drums of Desmoseal S XP 2458 and store them in designated storage areas.
Reformulation of the notified polymer into paint and adhesive products will involve transfer of notified polymer by metered dosing to a 1000 kg stainless steel mixing vessel and mixing the notified polymer and other ingredients in a sealed vessel fitted with a high-speed mixer and local ventilation system. Each batch is to be quality checked and adjustments made as required. The resultant paint and adhesive is filtered prior to being dispensed into 500 mL, 1 L or 4 L steel cans under exhaust ventilation for supply to customers. The final concentration of the notified polymer in the final product will be < 25%. Paint and adhesive products containing the notified polymer will be warehoused at the reformulators site before being distributed to end-user.

Mode of Introduction and Disposal
The notified polymer will not be manufactured in Australia. The notified polymer will be imported by ship through the port of Melbourne at a 90% concentration in Mesamoll plasticiser, in 200L metal drums. The notified polymer will be transported from the wharf to formulators around Australia for warehousing prior to formulation into coating and adhesive products. Truck drivers will transport the sealed drums by road from the wharf to the formulator's warehouse.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation
The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard. This is supported by toxicological endpoints observed in testing conducted on an analogue chemical.

Endpoint	*Result*	*Effects Observed?*	*Test Guideline*
Rabbit, skin irritation	non-irritating	not specified	OECD TG 404

Rabbit, eye irritation	non-irritating	not specified	OECD TG 405

All results were indicative of low hazard (MSDS).

Alkoxysilanes have been listed as a category of concern by the US EPA. Concern exists for lung toxicity from inhalation of vapours or aerosols is based on data for a number of low-molecular-weight alkoxysilanes.

Occupational Health and Safety Risk Assessment
Although exposure to the notified polymer could occur during reformulation and application, the risk to workers is considered to be low due to the assumed low hazard of the notified polymer.

Public Health Risk Assessment
Although the public will be exposed to the notified polymer during use of coating materials and adhesives for flooring, the risk to public health is considered to be low due to the assumed low hazard of the notified polymer. The high molecular weight of the notified polymer should preclude absorption across the skin or other biological membranes.

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
The notified polymer will crosslink with other components in the coating and adhesive formulation to form a high molecular weight polymer matrix. Therefore, once cured, the notified polymer is expected to remain bound within the product matrices. Hence, the majority of the notified polymer will share the fate of the articles onto which it is coated. It is anticipated that these will be disposed of to landfill or be incinerated at the end of their useful life. In landfill it is expected that the notified polymer will remain immobile within the soil. Incineration of the notified polymer will result in the formation of water vapour and oxides of carbon and nitrogen.

The above considerations indicate minimal risk to the environment when the notified polymer is used in the manner and at the levels indicated by the notifier..

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.

Environment

- The following control measures should be implemented by paint manufacturers and warehouse sites to minimise environmental exposure during paint formulation and storage of the notified polymer.
  − All process equipment and storage areas should be bunded.

Disposal

- The notified polymer should be disposed of to landfill for solids and to licensed waste contractors for liquids.

Storage

- Keep container in a cool and well ventilated place.

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 as a binder for coating materials and adhesives in the flooring industry, or is likely to change significantly;
  – the amount of notified polymer being introduced has increased from 1000 tonne per annum, or is likely to increase, significantly;
  – if 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.

No additional secondary notification conditions are stipulated.

Material Safety Data Sheet
The MSDS of the notified polymer and products containing the notified polymer provided by the notifier were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.