File No SAPLC/121

March 2011

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Dicdry 903H

This Self Assessment has been compiled by the applicant and adopted by NICNAS 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), administered by the Department of Health and Ageing and the Department of Health and Ageing and the Department of Sustainability, Environment, Water, Population and Communities has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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:

Street Address:	Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, 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

Polymer in Dicdry 903H

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT
DIC Australia Pty. Ltd. (ABN 12 000 079 550)
323 Chisholm Rd., Auburn, NSW 2144

NOTIFICATION CATEGORY
Self Assessment: Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Chemical Name, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Import Volume and Use Details.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Dicdry 903H (product containing 50% notified polymer)

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

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	Clear, colourless to amber liquid (imported product)
Melting Point/Glass Transition Temp	Not determined. The notified polymer is not isolated from solution.
Density	1000-1100 kg/m^3 (imported product)
Water Solubility	Not determined. The notified polymer is expected to have low water solubility due to the predominance of hydrophobic monomer constituents and its relatively high molecular weight.
Dissociation constant	Not determined. The notified polymer has no dissociable functions.
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	1-3	1-3	1-3	3-10	3-10

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

The notified polymer is a 50% component of the imported product Dicdry 903H. The Dicdry 903H product will be imported in 18kg (net) steel pails through ports in Sydney and transported to the notifier's warehouse by road and stored until such time that it will be distributed by road to one customer in Sydney.

Reformulation/manufacture processes

At the end-user's site the imported product is blended with the second component just prior to application on laminating machinery. The imported product is manually weighed along with the second component and additional solvent and added to a 180 L mixing vessel. After stirring the blended laminating adhesive is added to the storage reservoir on the laminating machine. The concentration of the notified polymer in the final laminating adhesive will be 86% after evaporation of the solvents. The adhesive is applied to the first substrate via a gravure transfer roller and passes through a hot air tunnel where solvent is evaporated and extracted prior to lamination to the second substrate.

Use

The imported product will be used as a component of a two component laminating adhesive for packaging of various articles.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

Transport and warehousing workers will only come into dermal and ocular contact with the notified polymer in the unlikely event of unforseen leakages and accidental spillage of the drums and containers.

During formulation of the adhesive, workers will manually weigh and transfer the polymer solution to the mixing vessel. Workers will wear impermeable gloves, eye protection and overalls. Exposure from the notified polymer to these workers can occur by either dermal or ocular routes, however significant exposure will be limited due to the workplace practices, localised exhaust extraction systems and personal protective equipment used.

Laminating machine operators may also come into contact with the notified polymer *via* ocular and dermal routes during laminating operations and when cleaning machinery. These workers will be protected by personal protective equipment, which will include impermeable gloves, eye protection and coveralls. Significant exposure will also be minimised by workplace practices and the use of localised exhaust extraction systems

Once laminated, the notified polymer reacts with the second component of the adhesive and becomes part of the inert polymer matrix of the final adhesive and is no longer available for exposure.

PUBLIC EXPOSURE

The notified polymer will not be available to the public. Although the public may come into contact with packaging containing the cured laminating adhesive, at this stage the notified polymer will be part of the inert polymer matrix and will not be bioavailable.

6.2. Toxicological Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

The OH&S risk presented by the notified polymer is expected to be low, based on low hazard and low exposure, as well as the engineering controls and personal protective equipment used by workers.

PUBLIC HEALTH

The notified polymer will not be sold to the public. The public will come into contact with the cured adhesive containing the notified polymer; however, the notified polymer will then be in a cured inert polymer matrix and thus will not be bioavailable. Hence, the risk to public health from the notified polymer is considered to be acceptable

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the steel pails. During formulation of the adhesive containing the notified polymer, spills are expected to be minimal. When spills occur they will be collected with absorbent material and sent to a licensed waste contractor for disposal according to State/Territory regulations. Empty pails from import will also be sent to licensed waste contractors. The total waste notified polymer from all sources including cleaning is expected to be approximately 5% of the import volume. The majority of the notified polymer will be irreversibly incorporated into adhesive laminate articles. The polymer is expected to share the fate of the articles which will be disposed of to landfill at the end of their useful life.

ENVIRONMENTAL FATE

The notified polymer is expected to be hydrolytically stable under normal environmental conditions and not expected to be readily biodegradable. Due to its hydrophobic nature, it is expected that the notified polymer in landfill will associate with soil and sediments, where it will slowly degrade to form water and oxides of carbon and nitrogen. The majority of the notified polymer will be bound in the polymer matrix of laminating adhesive and will not be bioavailable nor able to bioaccumulate.

7.2. Environmental Hazard Characterisation

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

7.3. Environmental Risk Assessment

No aquatic exposure is anticipated during reformulation and use of the notified polymer. It is envisaged that up to 5% of the total import volume of notified polymer will be released as waste and these wastes will be collected by licenced waste contractors and disposed of according to State/Territory regulations. In landfill, the solid wastes will not be mobile and will degrade slowly via biotic and abiotic pathways. Therefore, based on its assumed low hazard and reported use pattern, the notified polymer is not expected to pose an unacceptable risk to the environment.

8. CONCLUSIONS

8.1. Level of Concern for Occupational Health and Safety

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

8.2. Level of Concern for Public Health

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

8.3. Level of Concern for the Environment

The polymer is not expected to pose a risk to the environment based on its reported use pattern.

9. 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

- The following control measures should be implemented by the importer and end user to minimise environmental exposure during storage, formulation and use of the notified polymer:
  - bunding

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.

10. 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 chemical 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 chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical 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 chemical has changed from a component of a laminating adhesive, or is likely to change significantly;
  - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
  - the chemical 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 notifier has provided an MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the notifier.