

File No PLC/944

October 2010

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

FULL PUBLIC REPORT

Polymer in Stepanpol PS 1922

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:

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**

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FULL PUBLIC REPORT**Polymer in Stepanol PS 1922****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Huntsman Polyurethanes (Australia) Pty Ltd (ABN 40 090 446 165)
Gate 3, Ballarat Road
Deer Park, VIC 3023

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 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

USA, Canada, EU

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Stepanol PS 1922
Stepanol PS 2022

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*

Low MW Polyester Manufactured from Allowable Reactants

Criterion met

Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Light yellow liquid
Melting Point/Glass Transition Temp	-48.5°C
Density	1210 kg/m ³ at 25°C
Water Solubility	Study1: 2.44 g/L (pH 7) at 20°C;

	Study 2: 2.45 and 0.54 g/L at 20°C (pH 1 and pH 10, respectively). In both studies, water solubility was determined for an analogue polymer by the shake flask method (OECD TG 105). The water solubility of the notified polymer may be lower as it has a higher molecular weight than the analogue polymers.
Dissociation Constant	Not determined. The notified polymer contains no ionisable functions.
Reactivity	The notified polymer contains hydrolysable functions but the rate of hydrolysis is expected to be slow in the environmental pH range (4–9).
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	≤ 300	≤ 300	≤ 300	≤ 300	≤ 300

Use

The notified polymer is a component of insulation foam at concentrations up to 50%.

The imported notified polymer will be reformulated with other components in the manufacture of insulation foam by the process of continuous metal panel fabrication for walls and roofs.

Mode of Introduction and Disposal

The product Stepanpol PS 1922 containing < 90% notified polymer will be imported into Australia in 225 kg drums. Products containing the notified polymer will predominantly be transported throughout Australia by road.

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 notified polymer (< 90% concentration) from storage to the mixing lines and during the reformulation process. However, exposure to significant amounts of the notified polymer will be limited because of the automated processes, enclosed mixing tanks and personal protective equipment worn by workers.

Workers may come into dermal contact with foam panels containing up to 50% notified polymer after curing; however in its final form, the notified polymer will be incorporated into the matrix and not 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 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 insulation foam panels containing < 50% 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. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment

The notified polymer will be completely reacted and cross-linked within the foam as part of the manufacturing process, with minimal potential for release to the environment from fully automated closed systems. Residues in bulk storage tanks will be recovered for use, while residues in the feed heads and conveyor system will be disposed of as inert solid waste to a licensed waste facility. Foam products will end up in landfill at the end of their useful lives and leaching is not expected given the irreversible combination of the notified polymer with other components of the foam. The notified polymer will not bioaccumulate based on its limited potential for aquatic exposure. The cross-linked foam articles will undergo slow degradation processes via biotic and abiotic pathways, eventually forming water and oxides of carbon and nitrogen. The notified polymer is not likely to be released into the environment in a bioavailable form and is therefore not expected to pose a risk to the environment when used 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 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 insulation foam, 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 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.