

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in KELSOL 1469

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 the Department of the Environment, has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

This Public Report is 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**

July 2016

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SUMMARY

The following details will be published in the NICNAS *Chemical Gazette*:

ASSESSMENT REFERENCE	APPLICANT	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
SAPLC/188	DIC Australia Pty Ltd	Polymer in KELSOL 1469	No	≤ 20 tonnes per annum	Component of surface coatings

CONCLUSIONS AND REGULATORY OBLIGATIONS

Human Health Risk Assessment

Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the health of workers and the public.

Environmental Risk Assessment

Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

HEALTH AND SAFETY RECOMMENDATIONS

- 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 (M)SDS should be easily accessible to employees.
- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (Safe Work Australia, 2012) or relevant State or Territory Code of Practice.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation should be in operation.

Disposal

- Where reuse or recycling are not appropriate, dispose of the notified polymer in an environmentally sound manner in accordance with relevant Commonwealth, state, territory and local government legislation.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
 - Bunding

Emergency Procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

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 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 notified polymer 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 (M)SDS of the notified polymer containing the notified polymer was provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants

DIC Australia Pty Ltd (ABN: 12 000 079 550)
42 Sunmore Close
HEATHERTON VIC 3202

Exempt Information (Section 75 of the Act)

Data items and details claimed exempt from publication are chemical name, other names, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities

2. IDENTITY OF POLYMER

Marketing Name

KELSOL 1469 (contains the notified polymer at < 60% concentration)

Molecular Weight

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

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</i>
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 amber liquid
Melting Point/Glass Transition Temp	Liquid ambient at room temperature
Density	0.974–0.998 kg/m ³ at 25 °C
Water Solubility	Not determined. Expected to be insoluble based on molecular structure
Dissociation Constant	Expected to be ionised under environmental conditions (pH 4–9)
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

Based on the physico-chemical data the notified polymer is not classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia.

5. INTRODUCTION AND USE INFORMATION

Maximum Introduction Volume of Notified Chemical (100%) Over Next 5 Years

Year	1	2	3	4	5
Tonnes	10	10	15	15	20

Use

The notified polymer will be imported both in coating formulation (at < 60% concentration) or as a raw material (up to 100% concentration) by sea to Melbourne, Brisbane, Sydney or Perth, in 4.5 L, 25 L pails or sealed 25 kg or 200 kg drums. The notified polymer will not be manufactured in Australia. At the reformulation site, the notified polymer (up to 100% concentration) will be manually weighed or metered directly from the storage containers into a blending tank and mixed with other ingredients to form the finished surface coating product. The finished surface coatings containing the notified polymer at < 60% concentration will be applied to wood and mineral substrates by brush, roller and spray.

6. HUMAN HEALTH RISK ASSESSMENT

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

Although not considered in this risk assessment, the notified polymer contains residual monomers that are classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia. These are not present in the notified polymer as introduced above the cut off concentrations for classification.

The risk of the notified polymer to occupational and public health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

7. ENVIRONMENTAL RISK ASSESSMENT

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

The notified polymer may be released to the environment during transport in the unlikely event of an accident. During use spills are expected to be collected on the drop sheets and disposed of to landfill. Larger spills are expected to be collected using an inert media and disposed via a licenced waste collector.

During reformulation processes, an estimated 1% of the total importation volume of the notified polymer (or 200 kg) may be lost due to spills. The spills will be readily contained and collected for disposal to landfill. At most, 1% of the total import volume of the notified polymer (or 200 kg) is anticipated to remain as residues in import containers. Empty import containers will be disposed of to landfill. Reformulation equipment will be rinsed with solvents and it is predicted that less than 1% of the annual importation volume of the notified polymer will be released from cleaning of reformulation equipment. These washings will be stored in holding tanks on-site for disposal by licensed waste contractors.

Products containing the notified polymer will be used by both professional and Do-It-Yourself (DIY) users. During use, coatings containing the notified polymer are expected to be applied by brush, roller, and spray techniques onto wood and mineral substrates. Particulate overspray is expected to be collected with adsorbents to be disposed of to landfill. During use the notified polymer may also be released to the environment as accidental spills and container residues. These releases are expected to be collected and disposed of to landfill.

Residues containing the notified polymer on brushes, rollers, and in spray equipment are expected to be rinsed into containers, and then allowed to cure before disposal as solid wastes to landfill. Up to 5% of the notified polymer used by DIY users may be incorrectly disposed of to the sewer, drains, or ground from waste and washing of application equipment.

ENVIRONMENTAL FATE

The notified polymer on coated articles is expected to share the fate of these articles and, at the end of the useful lives, be disposed of to landfill or thermally decomposed during substrate reclamation. In landfill, the notified polymer will be present as cured solids, which will be neither bioavailable nor mobile. As a worst case scenario, it is assumed that up to 5% of the coatings containing the notified polymer used by DIY users may be incorrectly disposed of to the sewer, drains, or ground from waste and washing of application equipment. Release to surface waters may occur as only partial partitioning to sludge and sediment is expected under environmental pH. However, based on its high molecular weight and anionicity, the notified polymer is not expected to be released to surface waters at ecotoxicologically significant concentrations. The notified polymer is not expected to bioaccumulate due to its high molecular weight and low water solubility. In landfill and in surface waters, the notified polymer is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon.

7.2. Environmental 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. However, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

7.3. Environmental Risk Assessment

Based on the proposed use pattern, the majority of the notified polymer will be bound within an inert coating matrix, and will be neither bioavailable nor mobile. Release of the notified polymer to the aquatic environment is expected to be low and dispersed. Although the notified polymer is not expected to be readily biodegradable, it is not expected to cross biological membranes due to high molecular weight, and is therefore unlikely to bioaccumulate.

Therefore, based on its assumed low hazard and the assessed use pattern in surface coatings, the notified polymer is not expected to pose an unacceptable risk to the environment.