File No PLC/1167

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Z-136

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government Department of Health, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Australian Government Department of the Environment.

For the purposes of subsection 78(1) of the Act, this Public Report may be inspected at our NICNAS office by appointment only at Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

This 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

January 2014

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SUMMARY

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

ASSESSMENT REFERENCE	APPLICANT(S)	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
PLC/1167	Lubrizol International Inc.	Z-136	No	≤ 10 tonnes per annum	Ingredient in cleaners and polishes

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 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 *Globally Harmonised System for the 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.

Environmental Recommendations

- No specific control measures are required to minimise release of the notified polymer to the environment.

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.

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 surface cleaners and polishes, 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 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
Lubrizol International Inc. (ABN 52 073 495 603)
28 River Street
Silverwater NSW 2128

Notification Category
Polymer of Low Concern

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, CAS number, structural formulae, molecular weight, purity, polymer constituents, residual monomers/impurities, import volume and details of use.

Previous Notification in Australia by Applicant(s)
None

Notification in Other Countries
Canada
USA (2013)

2. IDENTITY OF POLYMER

Marketing Name(s)
Noverite 100 (contains the notified polymer at ≤ 28 %).

Other Name(s)
Z-136
NRT1023

Molecular Weight

Number Average Molecular Weight (Mn) is > 10,000 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.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Translucent liquid*
Melting Point/Glass Transition Temp	Not determined- Not applicable as only imported as a liquid dispersion.
Boiling Point	100°C
Density	1.05 kg/m^3 at 25 °C*
Water Solubility	Not determined. Expected to be at least water dispersible based on the presence of some hydrophilic functionality and its use in aqueous products
Dissociation Constant	Not determined. The notified polymer is a salt and is expected to be ionised under environmental conditions.
Reactivity	Stable under normal environmental conditions
Degradation Products	None known under normal conditions of use

*For imported product containing the notified polymer in an aqueous solution at ≤ 28%

5. INTRODUCTION AND USE INFORMATION

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

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

Use
The notified polymer will be imported into Australia at a concentration of ≤ 28%, and will not be manufactured or reformulated in Australia. The notified polymer will be used as an ingredient in hard surface cleaners, floor (wood and tile) cleaners, multi-purpose cleaners, kitchen counter cleaners, floor polish and furniture polish at a concentration of ≤ 28 %. Products containing the notified polymer may be applied as a spray.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer is water soluble and hence lung overloading issues are not expected. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard. 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

No ecotoxicological data were submitted. Anionic polymers are generally of low toxicity to fish and daphnia, however they 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. This is unlikely to apply to the notified polymer. Furthermore, the toxicity to algae is likely to be further reduced due to the presence of calcium ions in the aquatic compartment which will bind to the acid functional groups.

The majority of the notified polymer is expected to be released to sewer during use as cleaning products. Empty product containers containing notified polymer residue are expected to be disposed of to landfill. A predicted environmental concentration in rivers (PEC_{river}) for a worst case scenario can be calculated on the assumptions that 100% of the total annual import volume is released to sewer nationwide, and that a further 90% of the notified polymer is removed by sorption to sludge during sewage treatment plant (STP) processes. The PEC_{river} is 0.61 µg/L if the daily chemical release (10,000 kg/365 = 27.4 kg) is diluted by the daily effluent production (200 L/person/day × 22.613 million people = 4,523 ML).

The maximum concentration of the notified polymer in rivers following discharge of treated effluent is below the EC50 for algae of the most toxic anionic polymers (EC50 > 1 mg/L). The notified polymer will not bioaccumulate due to its high molecular weight and it is not expected to occur in surface waters at ecotoxicologically significant concentrations. Over time it is expected to disperse and degrade in the environment, ultimately forming water and oxides of carbon and nitrogen. The notified polymer is therefore not likely to pose an unreasonable risk to the aquatic environment when used and disposed according to the typical use pattern for cleaning agents.