File No PLC/1013

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Z-116

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 Ageing, 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 Sustainability, Environment, Water, Population and Communities.

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

December 2011

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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/1013	Lubrizol International Inc.	Z-116	No	≤300 tonnes per annum	Component of engine oils

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.

- 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.

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 to landfill.

Emergency Procedures

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- 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 engine oils, or is likely to change significantly;
- the amount of notified polymer being introduced has increased per annum, 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 MSDS of the notified polymer was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicant
Lubrizol International, Inc. (ABN: 52 073 495 603)
28 River Street
Silverwater NSW 2128

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 and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)
Z-116

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

Reactive Functional Groups

Functional Group	Category	Equivalent Weight (FGEW)
Amine	High Concern	>5000

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 yellow viscous liquid
Melting Point/Glass Transition Temp	>250°C
Density	930 kg/m^3 at 15.6°C
Water Solubility	Not determined. Expected to be insoluble based on structural considerations
Dissociation Constant	Not determined. The notified polymer contains basic functionality with an estimated pKa ~ 9. However, the notified polymer is not expected to ionise in the environment due to its low solubility.
Reactivity	Stable under normal environmental conditions
Degradation Products	None known 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	10-150	10-150	50-200	25-200	25-200

Use
The notified polymer will be used as a viscosity modifier in engine oils. The notified polymer will not be manufactured in Australia. The notified polymer will be imported into Australia at a concentration of 15% in an additive concentrate. The notified polymer will also be imported into Australia in fully formulated engine oils at a concentration of 3-10%. Engine oils containing the notified polymer will be reformulated in Australia to a concentration of 3-10%.

6. HUMAN HEALTH RISK ASSESSMENT

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

Occupational Health and Safety Risk Assessment
Occupational exposure may occur during reformulation of the product into engine oil. Professional mechanics will also be exposed to oil containing the notified polymer at 3-10 % concentration. The risk of the notified polymer to occupational health is not considered to be unreasonable given the assumed low hazard.

Public Health and Safety Risk Assessment
The public may be exposed to the notified polymer when performing oil changes. However, given the assumed low hazard and the infrequent exposure, the risk posed by exposure to the notified polymer is not considered unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Polymers with low charge density are generally of low concern to the environment. The notified polymer has limited potential for release to the aquatic environment during use or reformulation based on its use as an additive in engine oils. The majority of the imported quantity of notified polymer will be thermally decomposed to water and oxides of carbon and nitrogen during use or as a result of waste oil re-use or recycling. A fraction of the notified polymer may be released to soil from engine leaks where it is expected to adsorb to soil particles based on its hydrophobicity. A proportion of the notified polymer may enter the aquatic environment through transport of soil particles contaminated with engine oil or through inappropriate disposal of waste oil. The notified polymer is expected to be associated with the sediment compartment where it is unlikely to be bioavailable. The notified polymer is not expected to cross biological membranes due to its high molecular weight and it is therefore not expected to bioaccumulate. Therefore, based on its assumed low hazard and reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.