

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in VP 2453 L / MVA 2500 L / MVA 2320 L / MVA 2553 C

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (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**

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Table of Contents

SUMMARY	2
CONCLUSIONS AND REGULATORY OBLIGATIONS.....	2
ASSESSMENT DETAILS.....	4
1. APPLICANT AND NOTIFICATION DETAILS.....	4
2. IDENTITY OF POLYMER	4
3. PLC CRITERIA JUSTIFICATION	4
4. PHYSICAL AND CHEMICAL PROPERTIES.....	4
5. INTRODUCTION AND USE INFORMATION	5
6. HUMAN HEALTH RISK ASSESSMENT.....	5
7. ENVIRONMENTAL RISK ASSESSMENT	5

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/1265	BASF Australia Ltd	Polymer in VP 2453 L / MVA 2500 L / MVA 2320 L / MVA 2553 C	No	≤ 400 tonnes per annum	Component of concrete

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.
- 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.

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 concrete, 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)SDSs of the products containing the notified polymer were provided by the applicant. The accuracy of the information on the (M)SDSs remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants

BASF Australia Ltd (ABN: 62 008 437 867)
Level 12, 28 Freshwater Place
SOUTHBANK VIC 3006

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, spectral data, purity, polymer constituents, residual monomers/impurities and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

VP 2453 L/56% N.D. (contains 56% notified polymer)
MVA 2500 L 45% N.D. (contains 45% notified polymer)
MVA 2320 L/44% N.D. (contains 44% notified polymer)
MVA 2553 C (contains ~45% notified polymer)

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, yellowish to brown liquid*
Melting Point/Glass Transition Temp	Not determined. Introduced as an aqueous solution.
Density	1040 - 1130 kg/m ³ at 20 °C*
Water Solubility	Expected to be > 550 g/L at 20 °C (study report not provided, reported by notifier). The notified polymer is considered to be highly soluble in water based on its predominantly hydrophilic structure.
Dissociation Constant	Not determined. The notified polymer is a salt and is expected to be ionised under environmental conditions of pH 4 – 9.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* For imported aqueous formulations containing the notified polymer at < 60% concentration

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	200-400	200-400	200-400	200-400	200-400

Use

The notified polymer will be imported at < 60% concentration in aqueous formulations which will be blended with other components to produce concrete admixtures (containing < 20% notified polymer). The resulting formulations will be further mixed with other components to produce concrete (containing < 0.1% notified polymer).

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. 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 for the notified polymer. Anionic polymers are generally of low hazard to fish and aquatic invertebrates. However, they are known to be moderately toxic to algae. The mode of toxic action is overchelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. This may not apply to the notified polymer. The toxicity to algae is likely to be reduced due to the presence of sodium ions, which will bind to the functional groups. The notified polymer will be imported into Australia as concrete additive and then blended with other components to produce concrete admixture. The resulting formulations will be further mixed with other components to produce concrete. No significant release is expected from transportation and the blending/reformulation process. There is little potential for notified polymer to be released into the environment as a consequence of spillage, drum residues and equipment washing as these processes take place within closed systems and residues are likely to be reused. If spillages occur, these are expected to be dispersed and not restricted to a single site. This would minimise the degree of risk to the environment at any given time. If the spilt imported material or raw product cannot be recycled then it is likely that it will end up in landfill adsorbed to the inert material used for the spill clean-up (such as sand), where it is likely to leach out in a diffuse manner at low concentrations. The vast majority of the notified polymer will be incorporated into the matrix of the concrete and will not be released to the environment in any significant quantity. Concrete from demolition operations is expected to be eventually disposed of to landfill. Bioaccumulation is not likely based on the notified polymer's high molecular weight and the use pattern of being trapped in concrete solids after application. In landfill, leaching of the notified polymer is not expected given it is trapped in the concrete matrix. With time, it will be degraded via abiotic or biotic pathways into water, oxides of carbon and inorganic salts. Therefore, based on its assumed low hazard and assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.