

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

### POLYMER OF LOW CONCERN PUBLIC REPORT

#### Polymer 2 in Disperbyk-199

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**

September 2012

### Table of Contents

SUMMARY .....	2
CONCLUSIONS AND REGULATORY OBLIGATIONS.....	2
ASSESSMENT DETAILS.....	3
1. APPLICANT AND NOTIFICATION DETAILS .....	3
2. IDENTITY OF POLYMER .....	4
3. PLC CRITERIA JUSTIFICATION .....	4
4. PHYSICAL AND CHEMICAL PROPERTIES.....	4
5. INTRODUCTION AND USE INFORMATION .....	4
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/1083	Nuplex Industries (Aust) Pty Ltd, Akzo Nobel Car Refinishes, Valspar Paint (Australia) Pty Ltd and IMCD Australia Ltd.	Polymer 2 in Disperbyk-199	No	≤50 tonnes per annum	Component of coatings, printing inks and pigment concentrates

## 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.

- Service personnel should use disposable gloves and ensure adequate ventilation is present when removing spent printer cartridges containing the notified polymer and during routine maintenance and repairs.
- A copy of the MSDS should be easily accessible to employees.
- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)].
- 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 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 coatings, printing inks and pigment concentrates, 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 a product 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**

Nuplex Industries (Aust) Pty Ltd (ABN: 25 000 045 572)  
49-61 Stephen Rd  
BOTANY, NSW, 2019

Akzo Nobel Car Refinishes (ABN: 26 087 571 882)  
269 Williamstown Rd  
PORT MELBOURNE, VIC, 3207

IMCD Australia Limited (ABN: 44 000 005 578)  
Level 1, 372 Wellington Rd  
MULGRAVE, VIC, 3170

Valspar Paint (Australia) Pty Ltd (ABN: 40 000 035 914)  
Level 4, 2 Burbank Place  
BAULKHAM HILLS, NSW, 2153

### 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.

## 2. IDENTITY OF POLYMER

### Marketing Name(s)

Disperbyk-199 (Polymer 2; containing <25% notified polymer)

### 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	White solid
Melting Point/Glass Transition Temp	Not determined. Imported in solution.
Density	1.111 kg/m <sup>3</sup> at 20 °C*
Water Solubility	Claimed to be soluble by the notifier, which is consistent with the notified polymer's largely hydrophilic composition
Dissociation Constant	Not determined. The notified polymer is a salt and is expected to be ionised under environmental conditions
Particle Size	Not determined. Imported in solution.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use
*Dispersbyk-199 containing <20% notified polymer	

## 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	≤10	≤20	≤30	≤40	≤50

**Use**

The notified polymer will not be manufactured in Australia. It will be imported as a component of Disperbyk-199 and reformulated into coatings, printing inks and pigment concentrates. The notified polymer will be used in final products as a polymeric wetting and dispersing agent at a concentration of less than 5%. Products containing the notified polymer may be applied using automated systems or manually using spray, brush or roller. In the event that products are applied by members of the public, spray application is not expected.

**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. Anionic polymers 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 could apply to the notified polymer. 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.

The fate of the majority of the notified polymer will be disposed to landfill either by waste disposal or by sharing the fate of the substrate to which it has been applied. Due to its high water solubility, the notified polymer that is disposed to sewage via waste disposal at the reformulation sites, from painters' waste, equipment cleaning and from de-inking processes is expected to initially remain in the water compartment. With the water compartment, the polyanionic structure is expected to be neutralised by cationic counterions in sewage treatment plants which may decrease its water solubility and increase its association with the sludge.

In landfill, sediment or water, the notified polymer is expected to slowly degrade by abiotic and biotic processes to oxides of carbon, water vapour and various potassium salts. In landfill, some of the notified polymer may leach to aquatic compartments due to its high water solubility. However, the majority is bound in the cured matrix and will not have the potential to leach. Due to its high molecular weight, the notified polymer will not readily cross biological membranes, and a low potential for bioaccumulation is predicted. The notified polymer is not considered to pose an unreasonable risk to the environment.