

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Optiflo-H 7625 VF and BYK 425

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 and Energy.

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:

Street Address:	Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX:	+ 61 2 8577 8888
Website:	www.nicnas.gov.au

**Director
NICNAS**

October 2019

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.....	4
6. HUMAN HEALTH RISK ASSESSMENT.....	5
7. ENVIRONMENTAL RISK ASSESSMENT	5
BIBLIOGRAPHY	6

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/1515	ResChem Technologies Pty Ltd	Polymer in Optiflo- H 7625 VF and BYK 425	No	≤ 30 tonnes per annum	Component of paints and 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 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, 2015) 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.

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 paints and 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.

Safety Data Sheet

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

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants

ResChem Technologies Pty Ltd (ABN: 90 315 656 219)
Suite 1103, 4 Daydream Street
WARRIEWOOD NSW

Exempt Information (Section 75 of the Act)

Data items and details exempt from publication include: 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)

Optiflo-H 7625 VF (product containing the notified polymer at < 30%)
BYK-425 (product containing the notified polymer at < 55%)

Molecular Weight

Number Average Molecular Weight (Mn) is > 10,000 g/mol

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 aqueous solution (product)
Melting Point/Glass Transition Temperature	Not determined
Density	1,049 kg/m ³ at 20 °C (product)
Water Solubility	Miscible
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

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	3 – 10	5 – 12	10 – 15	15 – 20	20 – 30

Use

The notified polymer will be introduced as a component of the product Optiflo-H 7625 VF containing the notified polymer at < 30% concentration, or in other reformulated pigment concentrates for coatings and paints. These products containing the notified polymer will not be manufactured or reformulated in Australia, but may be manually mixed with other paints and coatings prior to use. The final concentration of the notified polymer in paints and coatings will be < 0.4%.

Application of end-use paint products containing the notified polymer will be undertaken by both professional workers and the general public, with an approximately 50:50 split between professional and DIY use. The paint products will be primarily applied to architectural building surfaces. The notifier stated that the method of application will be by brush, roller or spray. Once the paint has been cured, the notified polymer will be bound into an inert matrix and will not be available for exposure.

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.

The notified polymer is water soluble with high molecular weight and therefore if inhaled at low levels is likely to be cleared from the upper respiratory tract readily through mucociliary action. Small proportions of the notified polymer may reach the lower respiratory tract, but it should still be readily cleared from the lungs unless high levels are inhaled. When high levels of the notified polymer are inhaled, it is likely to be cleared from the lungs, but this may be slower and temporary respiratory impairment is possible.

Provided that proper control measures are employed to reduce the inhalation exposure during this process, the risk to workers posed by exposure to the notified polymer is not considered unreasonable. The risk to DIY consumers during spray application of coatings is considered low, because of the low frequency and duration of exposure. 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. Polymers without significant ionic functionality are generally of low concern to the environment.

The notified polymer will be imported into Australia in formulations which will be manually mixed with other paints and coating prior to use. Release of the notified polymer to the environment in the event of accidental spills or leaks during storage and transport is expected to be absorbed on suitable materials and disposed of to landfill in accordance with local government regulations.

The paints will be used by both professional users (50 %) and DIY users (50 %). Application of the paints will be via brush, roller and spray. It is expected that spraying operations will lead to some overspray and this will typically be disposed of to landfill after being collected and cured. The liquid waste from cleaning of professional application equipment is expected to be collected by an approved waste contractor, and disposed of safely. During use, the notified polymer may also be released to the environment as accidental spills. These releases are expected to be collected and disposed of to landfill in accordance with local government regulations. As the worst case scenario, it is assumed that up to 5 % of the amount used by DIY users or 2.5 % ($5 \% \times 50 \%$) of the total annual import volume of notified polymer may be incorrectly disposed of to the sewer, drains, or ground from waste and washing of application equipment. Assuming the releases occur nationwide over the entire year and there is no removal of the notified polymer during wastewater treatment, the predicted environmental concentration (PEC) is estimated to be $0.42 \mu\text{g/L}$ [$0.025 \times 30,000 \text{ kg/year} \div 365 \text{ days/year} \div (24.386 \text{ million persons} \times 200 \text{ L/person/day})$]. As the notified polymer is unlikely to be toxic to aquatic organisms, this release

of the notified polymer is not expected to lead to ecotoxicologically significant concentrations in the aquatic environment.

Most of the notified polymer is expected to share the fate of the articles to which it has been applied, to be disposed of to landfill at the end of their useful lives. A small proportion of the notified polymer may remain as residues in empty containers. These residues are expected to be cured and disposed of to landfill along with the containers in accordance with local government regulations. In landfill, the notified polymer will be present as cured solids and will be neither bioavailable nor mobile. The notified polymer is not expected to bioaccumulate due to its high molecular weight. The notified polymer in landfill and water is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon and nitrogen.

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

BIBLIOGRAPHY

Safe Work Australia (2015) Code of Practice: Spray Painting and Powder Coating, Safe Work Australia, <https://www.safeworkaustralia.gov.au/doc/model-code-practice-spray-painting-and-powder-coating>.