

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in DISPERBYK-194 N

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.

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:

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**Director
NICNAS**

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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/1362	ResChem Technologies Pty Ltd	Polymer in DISPERBYK – 194 N	No	≤ 16 tonnes per annum	Component of industrial 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 (M)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.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
 - Store in original container protected from direct sunlight in a dry, cool and well-ventilated area.

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 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.

(Material) Safety Data Sheet

The (M)SDS of the 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

ResChem Technologies Pty Ltd (ABN: 90 315 656 219)
Suite 1103
4 Daydream Street
WARRIEWOOD NSW 2102

Exempt Information (Section 75 of the Act)

Data items and details claimed exempt from publication: chemical name, other names, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities, and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

DISPERBYK-194 N (formulation containing the notified polymer)

CAS Number

None

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	Not determined. Polymer imported in aqueous solution.
Melting Point/Glass Transition Temp	Not determined.
Density	1.12 kg/m ³ at 20 °C
Water Solubility	Miscible
Dissociation Constant	Not determined. The notified polymer is expected to be ionised in the environment due to the presence of ionic moieties.
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

Year	1	2	3	4	5
Tonnes	3 - 5	5 - 7	7 - 10	10 - 13	13 - 16

Use

The notified polymer will be imported into Australia in an aqueous solution at 57% concentration for reformulation into end use products at a concentration of < 5%. Alternatively the notified polymer may be imported directly in end-use products at a concentration of < 5%. The notified polymer will be used as a polymeric wetting agent and dispersing additive in aqueous coating systems, in particular aqueous two-pack polyurethane and two-pack epoxy systems. End-use products are intended for use in industrial coatings, wood and furniture coatings and protective coatings.

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.

Although not considered in this risk assessment, NICNAS notes that the notified polymer contains residual monomers that are classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia. These are not present in the notified polymer as introduced above the cut off concentrations for classification.

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 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 and it is therefore not considered to be an over-chelation hazard to algae.

The notified polymer will be imported into Australia in an aqueous solution. It will be reformulated into industrial coatings, wood and furniture coatings and protective coatings. The notified polymer is expected to cross-link with aqueous polyurethane and epoxy systems. Reformulation operations are expected to be carried out manually or semi-automatically in a closed system. Release of the notified polymer from accidental spills is estimated to be < 1% of the import volume. Spills will be contained and soaked up with inert material (sand, silt, vermiculite etc) and disposed of to landfill. Reformulation wastes from cleaning of equipment and container residues containing the notified polymer (< 1%) are expected to be sent to a licensed waste facility for disposal in accordance with local, State and Federal regulations.

The notified polymer is expected to be used in industrial settings by professional painters. Do-It-Yourself (DIY) use is not expected. Therefore, the notified polymer is not expected to have significant release to the aquatic environment. The coatings containing the notified polymer will be applied using spray equipment or rollers/brushes. When coatings are applied by spray techniques, it is anticipated that approximately 20-30% of the coating formulation will form overspray and be collected as waste material. As the application of coatings will be conducted at industrial sites in designated spray booths, the overspray will be captured on kraft paper or newspaper and is expected to be disposed of to landfill.

Once cured, the coatings containing the notified polymer will form an inert polymer matrix. Discarded end use articles containing the notified polymer are expected to be disposed of to landfill. In landfill, the notified polymer is not expected to be mobile or bioavailable and will eventually degrade by

abiotic and biotic processes to water, and oxides of carbon. Bioaccumulation is not likely based on its high molecular weight.

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