

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

POLYMER OF LOW CONCERN PUBLIC REPORT

**2-Propenoic acid, 2-methyl-, polymers with chlorinated maleic anhydride-polypropylene
reaction products, 2-ethylhexyl acrylate, Me methacrylate and styrene, tert-Bu
benzenecarboperoxoate-initiated**

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 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 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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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/1162	R & R Discretionary Trust	2-Propenoic acid, 2-methyl-, polymers with chlorinated maleic anhydride-polypropylene reaction products, 2-ethylhexyl acrylate, Me methacrylate and styrene, tert-Bu benzenecarboxperoxoate-initiated	No	< 5 tonnes per annum	Component of paints

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 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

Disposal

- The notified polymer should be disposed to landfill.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:

- Store in a segregated and approved area.
- Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidising substances, strong acids, strong bases).

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 paints, 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

R & R Discretionary Trust (ABN: 38 406 606 021)
3-5 Hannabus Place
Mulgrave NSW 2756

Exempt Information (Section 75 of the Act)

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

2. IDENTITY OF POLYMER

Marketing Name(s)

KRYLON Fusion for Plastic (contains < 15% notified polymer)

Chemical Name

2-Propenoic acid, 2-methyl-, polymers with chlorinated maleic anhydride-polypropylene reaction products, 2-ethylhexyl acrylate, Me methacrylate and styrene, tert-Bu benzenecarboperoxoate-initiated

CAS Number

1440527-58-1

Molecular Formula

Unspecified

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	Liquid solution (product)
Melting Point/Glass Transition Temp	Tg: onset = 6.81 °C, midpoint = 20.98 °C
Density	990 kg/m ³ at 20 °C
Water Solubility	Not determined. Expected to be low based on its predominantly hydrophobic structure and high molecular weight.
Dissociation Constant	Not determined. The notified polymer contains functional groups that are expected to be ionised in the environmental pH range (pH 4 –9).

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	< 5	< 5	< 5	< 5	< 5

Use

The notified polymer will be imported in finished paint products at a concentration of < 15%. End use will be primarily by retail consumers. The finished paints will be applied by spray can.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer has a NAMW < 10,000 Da; hence lung overloading issues are not expected. 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

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 apply to the notified polymer and it is therefore not considered to be an over-chelation hazard to algae.

Most of the notified polymer will be bound within the inert paint polymer matrix. It will share the fate of the substrate to which it has been applied and is expected to be eventually disposed of to landfill. The notified polymer, from residues in empty containers, is expected to be disposed of to landfill.

The majority of the notified polymer will be incorporated into products available to the do it yourself (DIY) market. DIY users are expected to apply products by spray can. It is expected that approximately 20-60% of the coating product will be released to the environment in the form of overspray during spraying operations and will typically entail landfill disposal, after being collected. However, approximately 5% of the notified polymer used by DIY users may be incorrectly disposed of to the sewer, drains or ground from waste and washing of application equipment. Assuming the releases occur nationwide and equally over the entire year, the notified polymer is not expected to be released to surface waters at ecotoxicologically significant concentrations.

The notified polymer is not likely to bioaccumulate due its high molecular weight. In landfill and the aquatic compartment the notified polymer is expected to eventually degrade biotically and abiotically to form water and oxides of carbon. 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.