File No PLC/1238

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Fatty acids, C_{14-18} and C_{16-18}-unsatd., polymers with dehydrated castor-oil fatty acids, glycerol, phthalic anhydride, styrene, tall-oil fatty acids and trimethylolpropane

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

October 2014

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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/1238	Würth Australia Pty Ltd	Fatty acids, C_{14-18} and C_{16-18}-unsatd., polymers with dehydrated castor-oil fatty acids, glycerol, phthalic anhydride, styrene, tall-oil fatty acids and trimethylolpropane	No	~ 0.3 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.

- 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

- 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 industrial 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 products containing the notified polymer were 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
Würth Australia Pty Ltd (ABN: 48 002 487 096)
Unit 2/1 Healey Rd
DANDENONG SOUTH VIC 3175

Exempt Information (Section 75 of the Act)
No details are claimed exempt from publication.

2. IDENTITY OF POLYMER

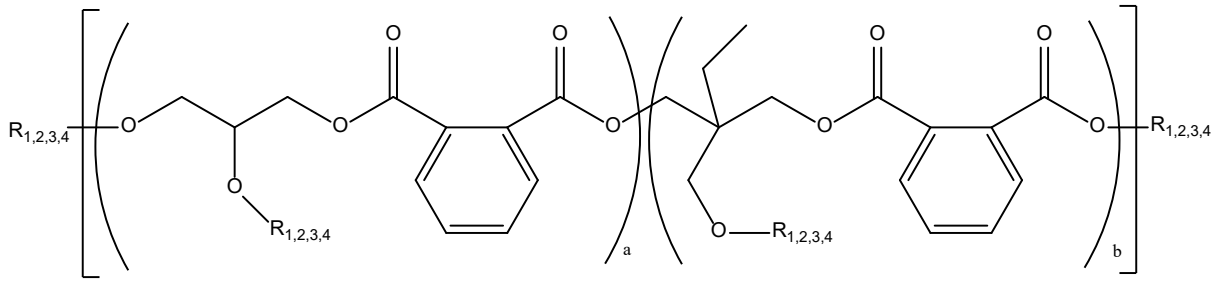
Marketing Name(s)
Zinc Spray Light Perfect (product containing the notified polymer at < 7% concentration)
Stainless Steel Spray Perfect (product containing the notified polymer at < 7% concentration)

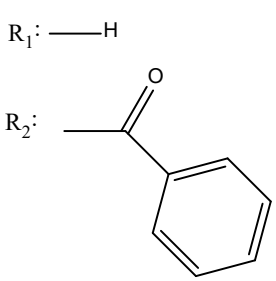
Chemical Name
Fatty acids, C_{14-18} and C_{16-18}-unsatd., polymers with dehydrated castor-oil fatty acids, glycerol, phthalic anhydride, styrene, tall-oil fatty acids and trimethylolpropane

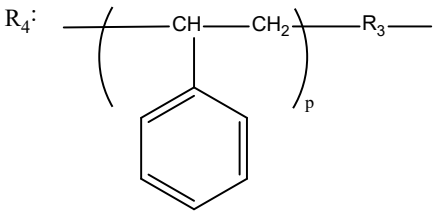
CAS Number
1451256-35-1

Molecular Formula
Unspecified

Structural Formula







R_3: Tall Oil Fatty Acids or
Dehydrated Castor Oil Fatty Acids or
C_{14-18} and C_{16-18} Fatty Acids

Molecular Weight

Number Average Molecular Weight (Mn)	3,410 Da
Weight Average Molecular Weight (Mw)	147,000 Da
Polydispersity Index (Mw/Mn)	43.1
% of Low MW Species < 1000 Da	6.92%
% of Low MW Species < 500 Da	1.94%

Reactive Functional Groups
The notified polymer contains only low concern functional groups.

Polymer Constituents

Chemical Name	*CAS No.*	*Weight % starting*	*Weight % residual*
1,3-Isobenzofurandione	85-44-9	22.4	0
Benzoic acid**	65-85-0	0.8	0
2,5-Furandione*	108-31-6	0.5	0
1,2,3-Propanetriol	56-81-5	3.7	0
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-	77-99-6	21.4	0
Fatty acids, tall-oil	61790-12-3	6.4	0
Fatty acids, dehydrated castor-oil	61789-45-5	5.3	0
Fatty acids, C_{14-18} and C_{16-18}-unsatd.	67701-06-8	10.8	0
Benzene, ethenyl-	100-42-5	27.7	0.8
2-Propenoic acid, 2-ethylhexyl ester*	103-11-7	1.0	0

*These monomers are not included in the chemical name or structure as they are present at < 2%
**This monomer is not included in the chemical name as it is present at < 2%

Hazardous Impurities/Residual Monomers

Chemical Name	Phosphinic acid		
CAS No.	6303-21-5	*Weight %*	0.03
Hazardous Properties	R34 (information provided by the notifier)		

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
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 liquid
Melting Point/Glass Transition Temp	< 0 °C
Density	~ 1,000 kg/m^3 at 20 °C
Water Solubility	Not determined. Expected to be low based on its molecular structure and high molecular weight of the notified polymer
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	~ 0.3	~ 0.3	~ 0.3	~ 0.3	~ 0.3

Use
The notified polymer will be used as a component of coatings at < 7% concentration for industrial use only. The coatings will be imported in 400 mL aerosol cans.

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. Polymers without significant ionic functionality are generally of low concern to the environment.

The notified polymer will not be manufactured or reformulated in Australia. Therefore, release of the notified polymer from these activities is not expected.

The products containing the notified polymer will be used as surface treatment products to protect against corrosion (rust protection). During use, the products will be sprayed onto metal substrates. The usage of products containing the notified polymer will be in industrial settings; therefore release of the notified polymer to the aquatic environment is expected to be limited.

Aerosol cans containing products are to be sprayed completely empty (including propellant). Containers that have not been emptied in compliance with regulations are to be deposed of as unused products. These unused products are regarded as hazardous waste. Empty containers are expected to be disposed of to approved wastes handling sites for recycling or disposal.

The fate of the coating cured on the substrate will be shared with the fate of the coated article, which ultimately is expected to be sent to landfill. In landfill, the notified polymer will be present as cured solids which will be neither bioavailable nor mobile. Furthermore, the notified polymer is not expected to bioaccumulate due to its high molecular weight. It is expected to eventually degrade in the environment to form oxides of carbon and water vapour. 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.