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

PUBLIC REPORT

Polymer in CA 7233A Base Component

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. 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 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:

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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 CHEMICAL	INTRODUCTION VOLUME	USE
LTD/2075	PPG Industries Australia Pty Ltd	Polymer in CA 7233A Base Component	ND*	≤ 5 tonnes per annum	Component of industrial coatings

*ND = not determined

CONCLUSIONS AND REGULATORY OBLIGATIONS

Hazard Classification

As no toxicity data were provided, the notified polymer cannot be classified according to the *Globally Harmonised System of Classification and Labelling of Chemicals* (GHS), as adopted for industrial chemicals in Australia.

Human Health Risk Assessment

Provided that the recommended controls are being adhered to, under the conditions of the occupational settings described, the notified polymer is not considered to pose an unreasonable risk to the health of workers.

When used in industrial coatings, the notified polymer is not considered to pose an unreasonable risk to public health.

Environmental Risk Assessment

On the basis of the reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

Recommendations

REGULATORY CONTROLS

CONTROL MEASURES

Occupational Health and Safety

- A person conducting a business or undertaking at a workplace should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer:
 - Avoid contact with skin and eyes
- A person conducting a business or undertaking at a workplace should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer:
 - Safety glasses
 - Impervious gloves
 - Protective clothing
 - Respiratory protection if inhalation of aerosols/spray mists is expected

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (SWA, 2015) or relevant State or Territory Code of Practice.
- A copy of the 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 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.

Emergency procedures

- Spills or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

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.

Regulatory Obligations

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 chemical 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 chemical, 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 polymer has a number-average molecular weight of less than 1000 g/mol;or
- (2) Under Section 64(2) of the Act; if
 - the function or use of the polymer has changed from a component of industrial coatings, or is likely to change significantly;
 - the amount of polymer being introduced has increased, or is likely to increase, significantly;
 - the polymer has begun to be manufactured in Australia;
 - additional information has become available to the person as to an adverse effect of the 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 a product containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

PPG Industries Australia Pty Ltd (ABN: 82 055 500 939)
23 Ovata Drive
TULLAMARINE VIC 3043

NOTIFICATION CATEGORY

Limited: Synthetic polymer with $M_n \geq 1,000$ g/mol

EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details exempt from publication include: chemical name, CAS number, molecular and structural formulae, molecular weight, analytical data, degree of purity, polymer constituents, residual monomers, impurities, additives/adjuvants, use details and import volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

Schedule data requirements are varied for all physico-chemical endpoints.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

Canada (2018)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

CA 7233A Base Component (product containing the notified polymer)

OTHER NAME(S)

ANCAMIDE 2569

MOLECULAR WEIGHT

Number average molecular weight (M_n) is $> 1,000$ g/mol.

ANALYTICAL DATA

Reference GPC spectra were provided.

3. COMPOSITION

DEGREE OF PURITY

$> 90\%$

4. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AT 20 °C AND 101.3 kPa: Amber viscous liquid

<i>Property</i>	<i>Value</i>	<i>Data Source/Justification</i>
Melting Point/Freezing Point	Not determined	Introduced in organic solvent
Boiling Point	Not determined	Expected to decompose prior to boiling
Density*	1,550 kg/m ³	SDS
Vapour Pressure	Not determined	Expected to be low based on high molecular weight
Water Solubility*	Not determined	Insoluble in cold water. SDS.
Hydrolysis as a Function of pH	Not determined	Contains hydrolysable groups however the notified polymer is expected to be stable at environmental pH (4 – 9).
Partition Coefficient	Not determined	Expected to have surfactant properties

Property	Value	Data Source/Justification
(n-octanol/water)		and partition between both phases.
Adsorption/Desorption	Not determined	Expected to have surfactant properties.
Dissociation Constant	Not determined	The notified polymer is expected to be cationic at environmental pH (4 – 9).
Flash Point	Not determined	Expected to be > 93.3 °C
Flammability	Not determined	Not expected to be highly flammable
Autoignition Temperature*	Not determined	Not expected to undergo autoignition
Explosive Properties	Not determined	Contains no functional groups that would imply explosive properties.
Oxidising Properties	Not determined	Contains no functional groups that would imply oxidising properties.

* Property of the imported product containing the notified polymer

DISCUSSION OF PROPERTIES

Reactivity

The notified polymer is expected to be stable under normal conditions of use.

Physical Hazard Classification

As no data were submitted the notified polymer cannot be recommended for hazard classification according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia.

5. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

The notified polymer will not be manufactured in Australia. The notified polymer will be imported into Australia at < 30% concentration as an ingredient of the base component of two-part industrial coatings.

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>
<i>Tonnes</i>	1-5	1-5	1-5	1-5	1-5

PORT OF ENTRY

Melbourne and Sydney

IDENTITY OF RECIPIENT

PPG Industries Australia Pty Ltd

TRANSPORTATION AND PACKAGING

The notified polymer will be imported in 0.47 – 3.78 L metal cans and transported within Australia by road.

USE

The notified polymer will be used as a component of two-part industrial coatings at < 30% concentration for use in the aerospace industry.

OPERATION DESCRIPTION

The imported product (base component) is expected to be mixed manually or automatically with a curing solution and in some instances a thinner. The finished coatings containing the notified polymer at < 30% concentration will then be applied to aircraft by spray.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

6.1.1. Occupational Exposure

CATEGORY OF WORKERS

<i>Category of Worker</i>	<i>Exposure Duration (hours/day)</i>	<i>Exposure Frequency (days/year)</i>
Transport and storage	2-3	10-15
Spray application	6	260

EXPOSURE DETAILS

Transport and storage

Transport, storage and trade sale workers are not expected to be exposed to the notified polymer except in the unlikely event of accidental rupture of the packaging.

End-use

Dermal, ocular or inhalation exposure to the notified polymer at < 30% concentration may occur during mixing and spray application, and during cleaning and maintenance of equipment. Exposure should be mitigated by the use of ventilated environments (including spray booths and/or aircraft hangars) and personal protective equipment (PPE: goggles, impervious gloves, protective clothing and respirators during spray operations), as anticipated by the notifier. Once the coating is cured and dried, the notified polymer will be reacted into the polymer matrix and will not be available for exposure.

6.1.2. Public Exposure

The coatings containing the notified polymer (at < 30% concentration) are intended for industrial use and will not be available to the public. The public may have dermal contact with coatings containing the notified polymer after they have been applied and cured. However, once the coating is cured and dried, the notified polymer will be reacted into the polymer matrix and will not be available for exposure.

6.2. Human Health Effects Assessment

No toxicity data were submitted for the notified polymer.

Based on the high molecular weight (> 1,000 g/mol), low percentage of low molecular weight species (< 500 g/mol) and estimated low water solubility, the notified polymer is not expected to be absorbed across biological membranes to a significant extent.

The notified polymer contains a structural alert indicative of possible irritation effects. Therefore, potential for skin and eye irritation of the notified polymer cannot be ruled out.

Health Hazard Classification

As no toxicity data were provided, the notified polymer cannot be classified according to the *Globally Harmonised System of Classification and Labelling of Chemicals* (GHS), as adopted for industrial chemicals in Australia.

6.3. Human Health Risk Characterisation

6.3.1. Occupational Health and Safety

The notified polymer contains a structural alert for irritation and thus potential for skin and eye irritation effects cannot be ruled out.

During reformulation and end-use, workers may come into contact with the notified polymer at < 30% concentration during mixing and spray application, and during cleaning and maintenance of equipment. The use of control measures (such as spray booths and ventilated areas) and PPE (goggles, impervious gloves, coveralls and respirators during spray operations), as recommended by the notifier, is expected to minimise exposure to the notified polymer and reduce the risk of potential irritation effects.

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unreasonable risk to the health of workers.

6.3.2. Public Health

Coatings containing the notified polymer will not be made available to the public. Members of the public may come into contact with articles coated with finished coatings containing the notified polymer. However, the notified polymer in cured coatings is expected to be bound with the inert matrix and will not be available for exposure.

When used in the proposed manner, the notified polymer is not considered to pose an unreasonable risk to public health.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Environmental Exposure & Fate Assessment

7.1.1. Environmental Exposure

RELEASE OF CHEMICAL AT SITE

No manufacturing of the notified polymer will take place in Australia. The notified polymer will be imported as the base component of a two-part coating for the aerospace industry at < 30% concentration. Release of the notified polymer to the environment during importation, storage, and transport is unlikely. The notified polymer will be imported into Australia in 0.47 – 3.78 L cans and transported by road. Accidental spills during transport are expected to be physically contained, absorbed on inert material and sent for disposal to landfill. The base component will be mixed and applied by aircraft manufacturers at maintenance facilities.

RELEASE OF CHEMICAL FROM USE

The notified polymer is a curing agent that will be used as a base component (at < 30% concentration) of two-part coating formulations for the aerospace industry. The base component containing the notified polymer is expected to be mixed manually or automated with the curing solution and in some instances a thinner. The mixed coating containing the notified polymer will then be applied to aircrafts via spray. The spray application of coating formulations containing the notified polymer to aircrafts will be applied in an industrial environment only by trained professional operators. Therefore, no significant release is expected from the application. Once the coating containing the notified polymer is cured, the chemical is considered to be consumed and will not be available for further exposure. Any residues in the end use empty containers are expected to be disposed of to landfill with the containers.

RELEASE OF CHEMICAL FROM DISPOSAL

The majority of the notified polymer will share the fate of articles to which it has been applied. Planes at the end of their useful lives could be sent to a storage facility. Alternately, the notified polymer may be thermally decomposed during metals reclamation processes.

7.1.2. Environmental Fate

No environmental fate data were submitted. The notified polymer will become irreversibly bound to form a coating during the curing process. The notified polymer will share the fate of the coated aircraft parts, which will eventually be either sent to a storage facility or thermally decomposed during metal recycling at the end of their useful lives. At the storage facility, the notified polymer will be present as cured solids and will be neither bioavailable nor mobile. The notified polymer is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon and nitrogen.

7.1.3. Predicted Environmental Concentration (PEC)

The Predicted No-Effect Concentration (PNEC) has not been calculated since no significant release of the notified polymer to the aquatic environment is expected from the proposed use pattern.

7.2. Environmental Effects Assessment

No ecotoxicological data were submitted for the notified polymer. The notified polymer has potentially cationic functionality that may be toxic to aquatic life. However, no significant exposure of the notified polymer to aquatic organisms is expected based on the reported use pattern.

7.2.1. Predicted No-Effect Concentration

The Predicted No-Effect Concentration (PNEC) has not been calculated since no ecotoxicological data are available.

7.3. Environmental Risk Assessment

The Risk Quotient (PEC/PNEC) for the aquatic compartment has not been calculated as no ecotoxicological data are available and release of the notified polymer to the aquatic environment will be limited based on its reported use pattern. The majority of the notified polymer which is present as a cured polymer matrix in coated aircraft articles may be sent to storage facilities at the end of their useful lives. The notified polymer bound in coated articles is unlikely to be bioavailable or mobile in this form. On the basis of the reported use pattern as the base component of a two-part coating for the aircraft industry, the notified polymer is not considered to pose an unreasonable risk to the environment.

BIBLIOGRAPHY

SWA (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>.

United Nations (2009) Globally Harmonised System of Classification and Labelling of Chemicals (GHS), 3rd revised edition. United Nations Economic Commission for Europe (UN/ECE), <http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html >