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

**PUBLIC REPORT**

**Polymer in V70Q38AA**

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/2103	The Valspar (Australia) Corporation Pty Limited	Polymer in V70Q38AA	ND*	< 10 tonnes per annum	Coating for food and beverage packaging

\*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**

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

As the notified polymer will be used in food contact material/packaging, the public report of this assessment will be forwarded to Food Standards Australia New Zealand (FSANZ) for their information.

### **Environmental Risk Assessment**

Based on the reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

### **Recommendations**

#### CONTROL MEASURES

#### Occupational Health and Safety

- A person conducting a business or undertaking at a workplace should implement the following personal engineering controls to minimise occupational exposure to the notified polymer during spray application:
  - Automated process
- 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 during spray application:
  - Impervious gloves
  - Protective clothing
  - Safety glasses or goggles
  - Respiratory protection when needed

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 coating for food and beverage packaging, 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 the product containing the notified chemical 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)

The Valspar (Australia) Corporation Pty Limited (ABN: 82 000 039 396)  
2-44 Graingers Road  
WEST FOOTSCRAY VIC 3012

#### 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, other names, CAS number, molecular and structural formulae, molecular weight, analytical data, degree of purity, polymer constituents, residual monomers, impurities, use details, migration data and import volume.

#### VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

Schedule data requirements are varied for all physical and chemical properties.

#### PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

#### NOTIFICATION IN OTHER COUNTRIES

Canada (2019)

### 2. IDENTITY OF CHEMICAL

#### MARKETING NAME(S)

V70Q38AA, and valPure V7038 INSIDE SPRAY (products containing the notified polymer at < 25% concentration)

#### MOLECULAR WEIGHT

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

#### ANALYTICAL DATA

Reference GPC spectra was provided.

### 3. COMPOSITION

#### DEGREE OF PURITY

> 90%

### 4. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AT 20 °C AND 101.3 kPa: Light yellow milky liquid\*

<i>Property</i>	<i>Value</i>	<i>Data Source/Justification</i>
Melting Point/Freezing Point	Not determined	The polymer will be introduced into Australia in an aqueous dispersion
Boiling Point	> 100 °C*	Estimated
Density	1,010 kg/m <sup>3</sup> *	SDS
Vapour Pressure	Not determined	Expected to be low due to the high molecular weight
Water Solubility	Not determined	Expected to be dispersible but not soluble in water
Hydrolysis as a Function of pH	Not determined	Contains hydrolysable functional groups; however, significant hydrolysis is not expected in the environmental pH range of 4 – 9

<b>Property</b>	<b>Value</b>	<b>Data Source/Justification</b>
Partition Coefficient (n-octanol/water)	Not determined	The notified polymer is amphoteric and any soluble fractions are expected to be surface active
Adsorption/Desorption	Not determined	Expected to adsorb strongly to soil and sediment through ionic and Van der Waals interactions
Dissociation Constant	Not determined	Contains functional groups which are expected to be cationic and anionic at the environmental pH range (4 – 9)
Flash Point	54 °C*	SDS
Autoignition Temperature	Not determined	Imported product contains flammable solvents
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.

\* 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 physico-chemical data were provided, the notified polymer cannot be classified using 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 as a component of coatings at < 25% concentration.

#### 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>	< 10	< 10	< 10	< 10	< 10

#### PORT OF ENTRY

Melbourne

#### TRANSPORTATION AND PACKAGING

The product containing the notified polymer will be imported in 200 L steel drums and transported within Australia by road.

#### USE

The notified polymer will be used for finished internal coatings for metal food and beverage packaging at < 25% concentration. The notified polymer will not be sold or available to the general public.

#### OPERATION DESCRIPTION

The notified polymer will not be reformulated or repackaged in Australia.

The coatings will be applied onto the metal food and beverage packaging (metal cans) via spray. It is anticipated that the spray application process will be highly automated and followed by curing of the coatings applied to the food and beverage packaging in an oven.

## 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	6	260
Application, maintenance, and cleaning	6	260

##### EXPOSURE DETAILS

Transport and storage workers may come into contact with the notified polymer at a < 25% concentration only in the unlikely event of an accidental breach of the drums or through spillage.

It is expected that the coating process will be a highly automated process, with no manual handling of the coatings by workers. Nonetheless, workers and cleaners may experience dermal and ocular exposure to residues of the finished coatings during connection of pipes and cleaning. Exposure to workers will be mitigated through the use of PPE such as goggles, impervious gloves and protective clothing. Inhalation exposure is not expected from the spray-coating process as it is highly automated and ventilation is expected to be present to prevent any spray emissions.

Once the coating is thermally cured, the polymer will be incorporated into the coating matrix, and is not expected to be available for exposure.

#### 6.1.2. Public Exposure

The product containing the notified polymer is intended for industrial use only and will not be sold or made available to the public. Once the coating is thermally cured, the notified polymer will be trapped within the coating film formed on the metal food and beverage can. Therefore, public exposure to the notified polymer is not expected.

The notified polymer will come into direct food contact as a component of internal coatings for metal food and beverage cans, and food could be a source of public exposure. Once the coatings are cured and dried, the notified polymer will be bound into the matrix of the coatings and is not expected to migrate into the food at high levels. Data submitted by the notifier on the finished cured coating stated that all starting substances within the notified polymer were permitted for use in food packaging coatings according to the European Council of the Paint, Printing Ink and Colours Industry (CEPE) Code of Practice and Council of Europe Resolutions AP (2004) 1 and AP 92 (2), as well as the 21 CFR 175.300 of the US FDA Regulations. In addition, the data also stated that “The dry residues of the migrates are low and well below the limit mentioned in Resolution AP (2004) 1 of the Council of Europe. They are also lower than the limits mentioned in 21 CFR 175.300 of the US FDA Regulations concerning resinous coatings” (Nehring, 2018).

### 6.2. Human Health Effects Assessment

No toxicity data were submitted for the notified polymer.

No information on the toxicokinetics of the notified chemical was provided. For dermal absorption, molecular weights below 500 g/mol are favourable for absorption and molecular weights above 1,000 g/mol do not favour absorption (ECHA, 2017). Absorption of the notified polymer through the skin, gastrointestinal tract and respiratory tract is not expected to occur to a significant extent based on its high molecular weight (> 1,000 g/mol). However, the notified polymer contains a small amount (< 5%) of low molecular weight species (< 500 g/mol) that may be absorbed through the skin if exposed.

#### *Irritation and sensitisation*

The notified polymer contains structural alerts for irritation and sensitisation. The potential for skin sensitisation via systemic exposure is expected to be limited due to the relatively high molecular weight of the notified polymer. However, the potential for irritation cannot be totally 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**

No toxicity data were submitted on the notified polymer. Workers may experience accidental dermal and ocular exposure to the notified polymer during spray application processes, and equipment cleaning and maintenance. The use of PPE such as appropriate respirators, safety glasses, impervious gloves, and protective clothing will mitigate dermal, ocular and inhalation exposure. In addition, the product in which the notified polymer is imported and used is hazardous. Workplace controls used to reduce exposure to other ingredients of the product will also reduce worker exposure to the notified polymer.

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**

The product containing the notified polymer will be only used in industrial settings and will not be sold to the public. The public may have dermal contact with cured coating on cans. However, dermal exposure to the notified polymer is not expected from cured coatings.

Therefore, the notified polymer is not considered to pose an unreasonable risk to the health of the public.

As the coated cans are used for food and beverage, this assessment report will be forwarded to Food Standards Australia New Zealand (FSANZ) for their information and to consider any public exposure through food.

**7. ENVIRONMENTAL IMPLICATIONS****7.1. Environmental Exposure & Fate Assessment****7.1.1. Environmental Exposure****RELEASE OF CHEMICAL AT SITE**

The notified polymer will be imported in finished internal coatings at < 25% concentration for metal food and beverage packaging. The notified polymer will not be available to the public and no reformulation or repackaging will occur in Australia. Spills or accidental release of coatings containing the notified polymer during import, storage, and transport are expected to be absorbed onto suitable materials and disposed of to landfill in accordance with local government regulations.

**RELEASE OF CHEMICAL FROM USE**

Coatings containing the notified polymer will be applied to metal packaging articles exclusively at industrial facilities by an automated process. The notifier has indicated that no significant release is expected from the application process. Once applied to packaging articles, the notified polymer is cured and is therefore incorporated within the coating matrix where it is not expected to be bioavailable. Any unused coatings and residues from application line cleaning are expected to be collected, contained and managed as industrial waste in accordance with local regulations.

**RELEASE OF CHEMICAL FROM DISPOSAL**

Metal cans to which coatings containing the notified polymer are applied are expected to be thermally decomposed during metal recycling/reclamation processes or disposed of to landfill. In landfill the notified polymer is expected to be retained within the coating matrix and will not be mobile or bioavailable.

**7.1.2. Environmental Fate**

No environmental fate data were submitted. Bioaccumulation of the uncured polymer is unlikely due to the high molecular weight of the notified polymer and its limited potential for aquatic exposure. As a result of its use pattern, most of the notified polymer is expected to share the fate of the containers/articles to which it has been applied and be disposed of to landfill or destroyed during metal recycling/reclamation processes. In landfill the notified polymer is cured into a solid polymer matrix and is therefore not expected to be mobile or bioavailable.



The notified polymer is expected to eventually degrade via biotic and abiotic processes (especially photodegradation, see Pham & Marks, 2012) to form water and oxides of carbon and nitrogen.

#### **7.1.3. Predicted Environmental Concentration (PEC)**

The Predicted Environmental Concentration (PEC) has not been calculated as release of the notified polymer to the aquatic environment will be limited based on its reported use pattern.

#### **7.2. Environmental Effects Assessment**

No ecotoxicity data were submitted. The notified polymer is an amphoteric salt, containing cationic and anionic functionalities. The cation-to-anion ratio (CAR) of the notified polymer is  $\leq 1$  indicating it is neutral or anionic overall. Neutral polymers are generally considered to be a low hazard to aquatic life. Anionic polymers are known to be moderately toxic to algae when there are acid groups on alternating carbons of the polymer backbone, however, this does not apply to the notified polymer (Boethling & Nabholz, 1997). Therefore, the notified polymer is not expected to pose a significant hazard to aquatic organisms.

#### **7.2.1. Predicted No-Effect Concentration**

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

#### **7.3. Environmental Risk Assessment**

The Risk Quotient (PEC/PNEC) for the aquatic compartment has not been calculated as release of the notified polymer to the aquatic environment will be limited. The majority of the notified polymer will be disposed of to landfill as a cured polymer matrix along with the articles to which it has been applied, or destroyed during metal reclamation processes. In landfill, the notified polymer is bound to these articles and is unlikely to be bioavailable or mobile. On the basis of the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

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