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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME

FULL PUBLIC REPORT

RC 28289

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Director
Chemicals Notification and Assessment

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
North Sydney NSW 2060

NOTIFICATION CATEGORY
The notified polymer meets the PLC criteria.

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:

- Chemical name
- Monomer composition
- Residual monomers
- Infrared Spectrum
- Structure
- Molecular weight and distribution
- Exact Import quantities
- Exact solvent concentration in products

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
Pre-manufacturing Notice in U.S. — PMN TS-112

2. IDENTITY OF CHEMICAL

OTHER NAME(S)
RC 28289

MARKETING NAME(S)
Polymer in 4150S

PLC Justification
The notified polymer meets the PLC criteria. The polymer does not contain reactive functional groups of moderate or high concern.

3. COMPOSITION

DEGREE OF PURITY
Purity data for the notified polymer itself is not available, however it will only be imported into Australia as a component of the product '4150 S Plas-Stick® 2K Flex-Additive' at a concentration of 60-70%.

4. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS
The notified polymer will be imported as a component of '4150 S Plas-Stick® 2K Flex-Additive' in 0.948L containers.

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	1-3	3-10	3-10	3-10	3-10

USE
The resin containing the notified polymer will be added to primers for use on plastic substrates such as front and rear vehicle bumpers.

5. PROCESS AND RELEASE INFORMATION

5.1. Distribution, Transport and Storage

IDENTITY OF MANUFACTURER/RECIPIENTS
The product containing the notified polymer is designed for use by professional spray painters. The notifier expects maximum market penetration of the product to be approximately 2000 spray-painting businesses within Australia.

TRANSPORTATION AND PACKAGING
The product containing the notified polymer will be imported in 0.948 L (1 US Quart.) Dangerous Goods rated steel containers. There is no reformulation or repackaging of the product before transport to end-users.

5.2. Operation Description

The notified polymer will be imported as a component of the product '4150 S Plas-Stick® 2K Flex-Additive', at a concentration of 60-70%, in 0.948 L Dangerous Goods rated steel containers. Following importation, the product will be stored in a Dangerous Goods approved warehouse before being transported to various customers.
Prior to application, the '4150S Plas-Stick® 2K Flex-Additive' (3 parts) is measured and mixed with paint primer (4 parts) and hardener (3 parts).
The prepared mixture containing the notified polymer is then applied by spray painters in spray booths.

5.3. Occupational exposure

Number and Category of Workers

Category of Worker	*Number*	*Exposure Duration*	*Exposure Frequency*
Transport to warehouse		6 hours	12 times/year
Warehousing - inwards	1	20 minutes	12 times/year
Warehousing - outwards	1	5 minutes/pallet	varied
Delivery	1	3 hours/ container	varied

Exposure Details
Exposure to the notified polymer will be via exposure to the product '4150 S Plas-Stick® 2K Flex-Additive', rather than direct exposure to the notified polymer itself.
Exposure to the notified polymer is not expected during the importation, warehousing or transportation of the product except in cases where the packaging is accidentally breached.
End-users of the product may be exposed to the 60-70% solution of notified polymer as '4150S Plas-Stick® 2K Flex-Additive' when opening containers, and during weighing and measuring of volumes prior to mixing. Dermal exposure is expected to be the major route of exposure however ocular

exposure may occur during accidental splashing.
Workers may be exposed to < 20 % solution of the notified polymer via the dermal, ocular and inhalation routes during spraying. The product is sprayed in a booth with an exhaust/filter system, and workers wear supplied air respirator or mask fitted with organic vapour cartridge, faceshield, gloves and protective suit.
Workers may be exposed to a dilute solution of the polymer via the dermal and ocular routes while cleaning and rinsing spray equipment using recirculated solvent.

5.4. Release

RELEASE OF CHEMICAL AT SITE
The notified polymer will not be manufactured or reformulated in Australia.

RELEASE OF CHEMICAL FROM USE
The notifier estimates that the majority of waste containing the notified polymer will be generated from overspray (20-50% of total paint produced) during spray painting operations. A small quantity of the notified polymer will be lost as residues in the import containers and from the cleaning of application equipment (up to 5% of import volume).

Therefore, after five years, the amount of notified polymer released could potentially be up to 5.5 tonnes per annum, although this value is expected to be less.

5.5. Disposal
The notified polymer will either be disposed of to landfill or incinerated.

5.6. Public exposure
The product '4150 S Plas-Stick® 2K Flex-Additive' is only sold to professional spray painters; therefore, the wet paint is not expected to come into contact with members of the public. The public may come into contact with the finished dried product on refinished automobiles however in this form the notified polymer will bound in an inert matrix and as such will not be biologically available.

6. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20ºC and 101.3 kPa	The appearance of the notified polymer itself is not provided. The product '4150 S Plas-Stick® 2K Flex-Additive' is described as a semi-viscous liquid.
Freezing Point	-73 to -74ºC ('4150 S Plas-Stick® 2K Flex-Additive')
Density	1000 kg/m^3 at 20ºC ('4150 S Plas-Stick® 2K Flex-Additive')
Water Solubility	Negligible
Remarks	The notified polymer is expected to have low water solubility due to the predominantly hydrophobic character of its monomers
Particle Size	
Remarks	Not supplied as the polymer is in solution during transport and use and once reacted becomes part of an inert matrix of infinite molecular weight.
Flammability	LEL = 1.4% ; UEL = 7.6%74ºC (4150 S Plas-Stick® 2K Flex-Additive)

Explosive Properties Solvent vapours of the solution polymer may explode due to static discharge.

Degradation Products None expected.

Loss of monomers, other reactants, additives impurities Not expected.

ADDITIONAL TESTS

Hydrolysis as a Function of pH Not determined

Remarks The notified polymer contains ester linkages that could be expected to undergo hydrolysis under extreme pH conditions. However, in the environmental pH range of 4 to 9, significant hydrolysis is unlikely to occur.

Partition Coefficient (n-octanol/water) Not determined

Remarks Given the notified polymer's expected low water solubility, this likely hydrophobic nature is indicative of partitioning into the octanol phase.

Adsorption/Desorption Not determined

Remarks The notified polymer is expected to be relatively immobile in soil due to the high molecular weight and low water solubility.

Dissociation Constant Not determined

Remarks The notified polymer contains hydroxyl functional groups which are expected to have typical acidity.

7. TOXICOLOGICAL INVESTIGATIONS

No toxicological data were submitted.

8. ECOTOXICOLOGICAL INVESTIGATIONS

No ecotoxicological data were submitted.

9. RISK ASSESSMENT

9.1. Environment

9.1.1. Environment – exposure assessment

Exposure

The notified polymer in solid wastes resulting from spills and application of the paint will be disposed of in landfill or incinerated. The coating physically degrades over time; however, any fragments, chips and flakes of the coating will be of little concern as they are expected to be chemically inert. At the end of their useful lives car parts coated with the notified polymer are

likely to be placed into landfill, recycled or destroyed during the steel reclamation process. Empty import drums and any residual polymer they contain will be disposed of to landfill. The small amount of solid wastes generated from the cleaning of equipment, spray guns etc., used in the application of the coating will be disposed either to landfill or incinerated.

Fate

In landfill, as a result of its expected low water solubility the notified polymer is expected to become associated with the soil matrix and slowly decompose. Incineration of the notified polymer is expected to give water vapour and oxides of carbon.

The polymer is not expected to cross biological membranes, due to its high molecular weight and expected low water solubility, and as such should not bioaccumulate (Connell 1990).

9.1.2. Environment – hazard assessment

No ecotoxicological data were submitted.

9.1.3. Environment – risk characterisation

The majority of the notified polymer will be incorporated into a inert coating formulation applied to the motor vehicles. Based on limited environmental exposure, the likely risk to the environment is expected to be low.

9.2. Human health

9.2.1. Occupational health and safety – exposure assessment

The notified polymer will be imported in 0.948 L Dangerous Goods approved steel cans. Workers involved in the importation, interim warehousing, and transportation to customer sites are unlikely to be exposed to the notified polymer except in the event of an accident where containers may be breached. Although release of the product is possible in the event of an accident, the notified polymer is packaged according to dangerous goods requirements. Such packaging is designed to contain contents in the event of an accident.

As a polymer of high molecular weight, inhalation exposure to spray mists or aerosols is not expected, except in the case of spray application. Dermal exposure is not expected to be significant as it is estimated that 0.3 L paint is required per car, or 0.1-0.2 L for touch-up applications. Exposure to significant amounts of the notified polymer is limited, however due to engineering controls and personal protective equipment worn by workers. Spraying takes place in a spray booth and workers are advised to wear impervious gloves, goggles, coveralls and respiratory protection.

After application the coating containing the notified polymer is cured into an inert matrix and is hence unavailable for exposure.

9.2.2. Public health – exposure assessment

The notified polymer is only supplied to professional spraypainters and as such will not be available to the general public. The likelihood of members of the public being exposed to the notified polymer as a component of the '4150 S Plas-Stick® 2K Flex-Additive' or the paint formulation is therefore low.

The public are likely to be exposed to articles that have been coated with formulations containing the notified polymer, however in this form, the polymer is bound within an inert matrix, and as such is biologically unavailable.

9.2.3. Human health - effects assessment

Toxicological data were not provided, however, the notified polymer meets the PLC criteria and therefore low hazard is expected due to the lack of reactive functional groups and the inability of the polymer to penetrate biological membranes.

The product containing the notified polymer, '4150 S Plas-Stick® 2K Flex-Additive', contains n-butyl acetate which has a TWA of 150 ppm or 713 mg/m^3 (NOHSC, 1995) and is therefore classified as a hazardous substance.

Due to the presence of n-butyl acetate, '4150 S Plas-Stick® 2K Flex-Additive' is classified in accordance with the *Australian Dangerous Goods Code* (FORS, 1998) as Class 3 – Flammable Liquid.

9.2.4. Occupational health and safety – risk characterisation

The notified polymer must be assessed for the contribution it makes to the hazards associated with spray application of the paint.

The OHS risk presented by the notified polymer is expected to be low given the low hazard associated with the notified polymer, its presence only in dilute solutions during use, and the small amount of paint used during application. Local ventilation is used during application and the product will be handled by professional spray painters. However, the notified polymer may be present in formulations containing hazardous ingredients. If these formulations are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC, 1999a), workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

The use of the paint containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting* (NOHSC, 1999b). The level of protection from exposure afforded by the standard protective measures will provide adequate protection from the polymer, which is likely to be less intrinsically toxic than most of the solvents and pigments and also some other paint resins.

9.2.5. Public health – risk characterisation

The notified polymer is intended for use by professional spray painters in auto repair workshops only, and will not be sold to the public. Following application, the notified will become trapped within a film and will not be bioavailable. Therefore, the risk to public health from exposure to the notified polymer is considered low.

10. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS

10.1. Hazard classification

Based on the available data the notified polymer is not classified as hazardous under the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC, 1999a).

10.2. Environmental risk assessment

The notified polymer is not likely to present a risk to the environment when it is stored, transported, and used in the proposed manner.

10.3. Human health risk assessment

10.3.1. Occupational health and safety

There is low concern to occupational health and safety under the conditions of the occupational settings described.

10.3.2. Public health

There is no significant concern to public health.

11. MATERIAL SAFETY DATA SHEET

11.1. Material Safety Data Sheet

The MSDS of the product containing the notified polymer provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Preparation of Material Safety Data Sheets* (NOHSC, 1994a). It is published here as a matter of public record. The accuracy of the information on the MSDS remains the responsibility of the applicant.

11.2. Label

The label for the product containing the notified polymer provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Labelling of Workplace Substances* (NOHSC, 1994b). The accuracy of the information on the label remains the

responsibility of the applicant.

12. RECOMMENDATIONS

CONTROL MEASURES

Occupational Health and Safety

- 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.
- The use of the product containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting* (NOHSC, 1999b) where appropriate.
- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing RC 28289 are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC 1999a), workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Environment

- The following control measures should be implemented by end users to minimise environmental exposure during use of the notified polymer:
  - Do not pour unwanted paint down the drain. Keep unwanted paint in sealed containers for disposal via special chemical wastes collections. Empty paint containers should be left open in a well-ventilated area to dry out. When dry, recycle steel containers via steel can recycling programs. Disposal of empty paint containers via domestic recycling programs may differ between local authorities. Check with your local council first.

Disposal

- The notified polymer should be disposed of in landfill.

Storage

- The product '4150 S Plas-Stick® 2K Flex-Additive' should be stored in accordance with *AS 1940-1993: The storage and handling of flammable and combustible liquids* (Standards Australia, 1993).

Emergency procedures

- Spills/release of the notified polymer should be handled as outlined in the MSDS.

Transport and Packaging

- Transport and packaging of the product '4150 S Plas-Stick® 2K Flex-Additive' should be in accordance with the requirements of the *Australian Dangerous Goods Code* (FORS, 1998).

12.1. Secondary notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under sub-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 sub-Section 64(2) of the Act:
- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.

13. BIBLIOGRAPHY

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