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

FULL PUBLIC REPORT

Desmophen C 1200/Desmophen XP 2501

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**Director
NICNAS**

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FULL PUBLIC REPORT**Desmophen C 1200/Desmophen XP 2501****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Bayer Australia Limited (Bayer Material Science) (ABN. 22 000 138 714) of 500 Wellington Road
MULGRAVE NORTH VIC 3170.

NOTIFICATION CATEGORY

Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details claimed exempt from publication:

Chemical Name, Other Names, CAS Number, Molecular and Structural Formulae, Molecular Weight,
Polymer Constituents, Residual Monomers/Impurities, Use Details, and Import Volume,

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

None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Desmophen C 1200
Desmophen XP 2501

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</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

Yellowish liquid

Boiling Point

> 300°C

Density

approximately 1100 kg/m³ at 20°C

Water Solubility	Insoluble
Particle Size	Not applicable as it is a liquid
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

Comments

The water insoluble nature of the polymer is consistent with the notified chemical's polyester structure. The partition co-efficient would be difficult to measure but is expected to be high due to its low water solubility. There are no dissociable functional groups in the polymer.

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>
<i>Tonnes</i>	3-10	3-10	3-10	3-10	3-10

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

Desmophen C 1200 and Desmophen XP 2501 will be imported in 200 L metal drums at 100% concentration. The notified polymer will be transported from the dockside by road to Bayer Material Science for warehousing and consequently distributed to paint formulators for formulation into coatings for the original equipment manufacturers (OEM) automotive and construction industries.

Reformulation/manufacture processesTransport & Warehousing

Imported metal drums of the notified polymer will be transported by road to the notifier's site for warehousing before it is sold to paint manufacturers for formulation into coating products.

Formulation of coating

The notified polymer will be formulated into coating products at customer sites. Formulation of coating products will involve transfer of notified polymer by metered dosing to a mixing vessel, and mixing the notified polymer with other ingredients in the sealed vessel fitted with a high-speed mixer. Each batch will require a quality check and adjustments will be made whenever required. The formulated coating will be filtered prior to dispensing into 4 L and 20 L steel cans and pails using an automated filling machine. The formulated coating will contain less than 80% of the notified polymer. The closed containers containing formulated coating will be manually put on pallets and then will be taken by forklift to the warehouse for storage and distribution.

Use

Desmophen C 1200 and Desmophen XP 2591 will be used as a component of surface coating and sealers to be used in automotive and building industry.

Application in the construction industry

Coatings containing the notified polymer at less than 80% concentration will be applied to metal or concrete structures such as bridges and buildings. Professional tradespersons will open 4 L pails of coating, the contents will be stirred using a drill and a stirring paddle at a slow speed. The coating will then be applied to the concrete or metal structures using a paint brush or roller. For spray painting, the mixed coating will be manually poured into a 5 L spray gun reservoir and used thereafter.

Application to automotive parts

The notified polymer will be used at the automotive OEM manufacture plants. The coating will be applied to automotive parts via rotary spray application in an enclosed process. After drying, the parts will be packed and supplied to car manufacturers.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

Transport & Warehousing

Workers are unlikely to be exposed to the notified polymer during transport and storage of the imported polymer and formulated coatings except when containers are accidentally breached.

Coating Formulation

Dermal and/or ocular exposure to the notified polymer at a concentration of up to 100% is expected. The most likely routes of exposure are via: dermal, ocular or inhalation. The possibilities of dermal exposure are drips and spills during opening and closing of container, transferring the notified polymer to the mixing vessel for formulating surface coating product, collecting quality control samples, quality control testing, packaging, cleaning of the used tanks and during general maintenance. However, workers' exposure to the notified polymer will be limited by the use of engineering controls (local exhaust ventilation) and personal protective equipment (PPE) appropriate i.e. respirators, safety goggles, gloves, and protective clothing conforming to Australian Standards.

Surface Coating Application to OE components and building components

Dermal and occupational exposure to the end-use surface coating product containing the notified polymer at a concentration of up to 70% may be expected as a result of opening and closing of coating containers, stirring paint, manually transferring paint to an appropriate container such as a spray paint reservoir or roller pan for spray and brush/roller applications. During application, the notified polymer may be spilled or atomised into the air resulting in dermal, ocular and inhalation exposure. PPE during paint applications typically includes gloves, goggles and protective clothing and respirators conforming to Australian Standards.

PUBLIC EXPOSURE

The notified polymer will not be sold directly to the public. The public exposure via coated car parts and building surfaces is unlikely since once the coating is dried and cured, it will form an inert polymer matrix and will not be bioavailable.

6.2. Toxicological Hazard Characterisation

No toxicity data were submitted. The notified polymer meets the PLC criteria, and can therefore be considered to be of low hazard.

The notified polymer contains a significant amount of low molecular weight species < 1000.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

The OHS risk presented by the notified polymer is expected to be low, based on expected low toxicity, as well as the engineering controls and personal protective equipment used by workers.

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, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation..

PUBLIC HEALTH

The hazard of the notified polymer is considered low, based on the PLC characteristics of the notified polymer. The exposure of the public is assessed as very low because the notified polymer is bound within a matrix and unlikely to be bioavailable. Therefore the risk to the public will be very low.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

The notified polymer will be imported in 200 L metal drums. After storing the imported product at the notifier's warehouse, the imported product will be transported to paint formulators for coating manufacture. The notified polymer is blended with other ingredients to form an automobile part and construction surface coating, and will be stored in 4 and 20 L cans/pails. It is expected that $\leq 6\%$ of the total volume imported per year will be released to the environment from the disposal of spilt notified polymer, from equipment cleaning, and from residual in the import containers. This quantity is expected to be disposed of to landfill.

The formulated products may be used in two distinct manners, as described below.

Application – Automotive parts

At the end-users' site, overspray from application is expected to account for $\leq 30\%$ of the import volume. Overspray will be collected via filters on the fume extraction equipment connected to the cabinet, and the filters are expected to be collected periodically and be disposed of to landfill. Residual notified polymer within the empty 20 L cans is expected to account for $\leq 0.5\%$ of the total import volume, and is expected to be disposed of to landfill.

Application in the construction industry

During use, the formulated coating product containing the notified polymer may be applied by paint brush, roller or spray equipment. This application equipment will be cleaned using a solvent, with the washings collected and disposed of to a liquid waste facility or incinerated. Outdoor spray application may produce up to 20% overspray. The overspray droplets are likely to land on immediate surrounding areas, which are likely to be covered by a protective drop sheet, but may be carried by the wind and be dispersed throughout a wider area. As the coating droplets cure, the notified chemical will be immobilised within the cured coating matrix. Applied notified polymer will be cured, and will become unavailable in the cured surface coating matrix.

Residual notified polymer within the empty 4 L cans is expected to account for $\leq 1.5\%$ of the total import volume, and after curing within the container, is expected to be disposed of to landfill.

ENVIRONMENTAL FATE

Applied notified polymer will be cured, and will become unavailable in the cured surface coating matrix. Notified polymer that is disposed of to landfill is expected to associate with soil and sediment, and due to its insolubility in water the notified polymer is not expected to be mobile. Over time, the notified polymer should degrade by abiotic processes to form simple carbon containing compounds. Notified polymer that is disposed of by incineration is expected to be thermally degraded to form simple oxides of carbon.

7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

7.3. Environmental Risk Assessment

Release to the aquatic environment is not anticipated except in the unlikely event of a major spill during transportation. If it were released into the aquatic environment, the notified polymer is expected to partition to particulate matter and accumulate in sediments. Being a polymer of high molecular weight, adverse ecotoxicological effects are unlikely.

In the longer term, most of the notified polymer used in automotive coatings will eventually be incorporated in metal recycling programs or sent to landfill for disposal following its lifecycle. During metal reclamation, the notified polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon.

It is expected that the majority of notified polymer used in the construction industry will eventually be disposed of to landfill, where the notified polymer is expected to be immobile and should slowly degrade to simple oxides of carbon.

Therefore, based on the reported exposure levels and use pattern, the notified polymer is not considered to pose an unacceptable risk to the environment when it is stored, transported and used in the proposed manner

8. CONCLUSIONS

8.1. Level of Concern for Occupational Health and Safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

8.2. Level of Concern for Public Health

There is Negligible Concern to public health when used in the proposed manner.

8.3. Level of Concern for the Environment

The polymer is not considered to pose a risk to the environment based on its reported use pattern.

9. MATERIAL SAFETY DATA SHEET

9.1. Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

10. 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.
- In the interest of occupational health and safety, the following guidelines and precautions should be observed for use of the notified polymer as a component of paint products:
 - Adequate training for staff in handling paint products, including enforcing the adherence of industrial spray painters to the NOHSC *National Guidance Material for Spray Painting*;
 - Implementation of general health surveillance and monitoring programs as required.
- A copy of the MSDS should be easily accessible to employees.
- An MSDS prepared in accordance with NOHSC format need to be provided to NICNAS.
- Australian contact details should be included on the product Label.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory

hazardous substances legislation must be in operation.

Environment

Disposal

- The notified polymer should be disposed of by incineration or to landfill.

Emergency procedures

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

10.1. 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 subsection 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 subsection 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.