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January 2014

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

PUBLIC REPORT

Polymer in T-40138 Intermediate for Sprayable Sealant Part A

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (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.

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

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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/1661	PPG Industries Australia Pty Ltd	Polymer in T-40138 Intermediate for Sprayable Sealant Part A	ND*	≤ 50 tonnes per annum	A component of sealant used on aircraft

*ND = not determined

CONCLUSIONS AND REGULATORY OBLIGATIONS

Hazard classification
As only limited toxicity data were provided, the notified polymer cannot be classified according to the *Globally Harmonised System for the Classification and Labelling of Chemicals* (GHS), as adopted for industrial chemicals in Australia, or the *Approved Criteria for Classifying Hazardous Substances* (NOHSC, 2004).

Human health risk assessment
Under the conditions of the occupational settings described, provided that adequate workplace control measures are in place to reduce the potential for exposure, 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.

Environmental risk assessment
Based on the assessed 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 engineering controls to minimise occupational exposure to the notified polymer as introduced:
  - Automated repackaging system

- 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 as introduced:
  - Avoid direct skin contact
  - Avoid inhalation of vapour and aerosols
  - Application areas should be restricted to authorised staff

- 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 as introduced:
  - Powered air purifying respirator hood
  - Full body protective suit
  - Chemical boots and covers
  - Nitrile disposable gloves
  - Face shields

  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, 2012) or relevant State or Territory Code of Practice.

- 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.

Disposal

- The notified polymer should be disposed of to landfill.

Emergency procedures

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

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 1,000;
- additional information on the sensitisation potential of the polymer has become available;

or

(2) Under Section 64(2) of the Act; if
- the function or use of the polymer has changed from being a component of sealant used on aircraft, 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.

(Material) Safety Data Sheet
The (M)SDS of the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

This notification has been conducted under the cooperative arrangement with Canada. The health and environmental hazard assessment components of the Canadian report were provided to NICNAS and, where appropriate, used in this assessment report. The other elements of the risk assessment and recommendations on safe use of the notified chemical were carried out by NICNAS.

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 (Reduced fee notification): Synthetic polymer with Mn ≥ 1000 Da.

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, analytical data, degree of purity, polymer constituents, residual monomers, impurities, additives/adjuvants, use details, import volume, identity of recipients.

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
Canada, 2011.
EU, Pre-registration, 2009.
Korea, 2010; 2011.

2. IDENTITY OF CHEMICAL

MARKETING NAME
T-40138 Intermediate for Sprayable Sealant Part A

OTHER NAMES
RW-4053-81, Part A
RW-4053-81A

MOLECULAR WEIGHT
> 1,000 Da

ANALYTICAL DATA
Reference FTIR, HPLC-UV and GPC spectra were provided.

3. COMPOSITION

DEGREE OF PURITY
> 90%

HAZARDOUS IMPURITIES/RESIDUAL MONOMERS

Chemical Name	1,3-Benzenediamine, 2 (or 4)-methyl-4,6 (or 2,6)- bis(methylthio)-		
CAS No.	106264-79-3	*Weight %*	< 10
Hazardous Properties	Conc ≥ 25%: Xn; R22; R43 ≥ 1% Conc < 25%: Xi; R43		

4. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AT 20 °C AND 101.3 kPa: Black liquid

Property	Value	Data Source/Justification
Glass Transition Point	-61°C*	Measured with a product containing < 30% of the notified polymer
Boiling Point	No boiling point*	Measured with a product containing < 30% of the notified polymer. Reaction and/or decomposition of the test substance at >150°C was observed
Density	1,170 kg/m^3 at 20°C*	Measured with a product containing < 30% of the notified polymer
Vapour Pressure	7.90 × 10^{-6} kPa at 20°C*	Measured with a product containing < 30% of the notified polymer. The notified polymer is not considered to be volatile based on the high molecular weight of > 1,000 Da.
Water Extractivity	55.6 mg/g at 20°C*	Measured with a product containing < 30% of the notified polymer. The notified polymer is expected to be at least water dispersible based on the presence of hydrophilic moieties in the chemical structure.
Hydrolysis as a Function of pH	Not determined	The $t_{½}$ was reported to be 85 days at pH 4, > 1 year at pH 7 and 9 at 25°C based on measurement with a product containing < 30% of the notified polymer. However, the notified polymer does not contain hydrolysable functional groups, and therefore, is not expected to hydrolyse in the environmental pH range of 4 - 9.
Partition Coefficient (n-octanol/water)	log Pow = 2.38 at 20°C*	Measured with a product containing < 30% of the notified polymer. The notified polymer is expected to have potential to partition to water phase based on the presence of hydrophilic moieties in the chemical structure.
Adsorption/Desorption	log K_{oc} = 2.68*	Measured with a product containing < 30% of the notified polymer. The notified polymer is not expected to have strong potential to absorb to sediment from water phase based on the presence of hydrophilic moieties in the chemical structure.
Dissociation Constant	Not determined	The notified polymer contains no readily dissociable functional groups and is not considered to be ionised in the environment.
Flash Point	132.8°C (271°F)*	Measured with a product containing < 30% of the notified polymer.
Flammability	Not determined	Estimated not highly flammable in contact with water (EC 440/2008 A. 12)
Autoignition Temperature	370°C at 99.77 - 101.3 kPa*	Measured with a product containing < 30% of the notified polymer
Explosive Properties	Not determined	Estimated negative (EC 440/2008 A. 14)
Oxidising Properties	Not determined	Estimated negative (EC 440/2008 A. 21)

* Data were obtained on a substance containing only < 30% of the notified polymer and may not accurately represent the physical-chemical properties of the notified polymer.

DISCUSSION OF PROPERTIES

Reactivity

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

Physical hazard classification

Based on the submitted physico-chemical data depicted in the above table, the notified polymer is not recommended for hazard classification according to the *Globally Harmonised System for the 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. It will be imported as < 50% of a product.

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

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

PORT OF ENTRY
Melbourne

IDENTITY OF MANUFACTURER/RECIPIENTS
The product containing the notified polymer will be imported by PPG Industries Australia Pty Ltd and distributed to industrial end-users in Melbourne and Sydney.

TRANSPORTATION AND PACKAGING
The product containing the notified polymer will be imported into Australia by air in various container sizes from a quart can to 5-gallon pail and will be transported by road.

The notified polymer contains a hazardous impurity that is classified as dangerous goods for ground transport (Environmentally Hazardous Substance, Liquid, N.O.S., Class 9, UN3082, PG III, Hazchem code 3Z).

USE
The notified polymer is used as a component of a sprayable sealant for aircraft, and will be applied in an industrial environment. The notified polymer will not be available to the public.

OPERATION DESCRIPTION
Repackaging
At the repackaging site, the notified polymer will be transferred from the import containers to dual connecting cartridges in an automated process. Lids will be removed from the import containers, and transfer of the product to a hopper will be performed using either a drum pump or a drum lift. The product containing the notified polymer at < 50% will then be extruded into one section of two-compartment plastic applicator tubes. The tube compartment containing the notified polymer will then be manually joined to the other compartment and packaged prior to distribution to customers.

End-use
At the application site, trained personnel will mix the two portions of the sealant in the applicator tube and apply it to the interior surface of aircraft integral fuel tanks using a spray application gun. Compressed air will be used to power the spray. The application gun and the static mix tube of the system are designed to ensure correct material blending. When mixed, the reactive material will be quickly applied to the interior of fuel tanks. Once the sealant is cured, the notified polymer will be bound into the matrix of the sealant coating.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

6.1.1. Occupational Exposure

CATEGORY OF WORKERS

Category of Worker	*Exposure Duration (hours/day)*	*Exposure Frequency (days/year)*
Repackaging sealant components	0.5	100
Spray application	6	100

EXPOSURE DETAILS

Repackaging

Workers carrying out repackaging may have potential dermal or ocular exposure to the notified polymer during transfer, filling and cleaning operations. Inhalation exposure would be limited as the automated processes are not likely to generate aerosols and the vapour pressure of the notified polymer (NAMW > 1,000) is expected to be low. However the polymer has a moderate proportion of low molecular weight species (< 1,000) that may be more volatile. Repackaging workers wear coveralls, gloves and goggles, and local exhaust ventilation is used in the filling area.

End-use

During spray application of the sealant to aircraft fuel tanks, there is potential for dermal, ocular and inhalation exposure of workers to the notified polymer. All workers involved in the application of the sealant wear appropriate personal protective equipment (PPE) including powered air purifying respirator (PAPR) hood, full body protective suit, chemical boots and covers, nitrile disposable gloves and face shields. During the application, the spray area is restricted to trained personnel who are wearing adequate PPE.

Once the sealant containing the notified polymer is cured, the polymer will be bound into the matrix of the finished sealant coating and will not be bioavailable.

6.1.2. Public Exposure

The notified polymer will be used in industrial settings and will not be available to the public. It will be applied as a part of the sealant on the interior surface of the aircraft fuel tanks. Based on this pattern of use public exposure to the notified polymer is not expected.

6.2. Human Health Effects Assessment

The results from toxicological investigations conducted on the product containing < 30% notified polymer are summarised in the following table.

Endpoint	*Result and Assessment Conclusion*
Rat, acute oral toxicity	LD50 > 2, 000 mg/kg bw; low toxicity
Mouse, skin sensitisation – Local lymph node assay	Evidence of sensitisation
Mutagenicity – bacterial reverse mutation	Non mutagenic
Genotoxicity – *in vitro* chromosomal aberration	Clastogenic in the absence of metabolic activation
Genotoxicity – *in vivo* micronucleus test	Non clastogenic

Based on the studies submitted, a product containing < 30% of the notified polymer exhibits low acute oral toxicity (LD50 > 2,000 mg/kg) and is a weak sensitizer (EC3 = 63.8%). The product tested positive in an *in vitro* chromosomal aberration test but was found to be non-clastogenic based on an *in vivo* mouse micronucleus test and is non-mutagenic based on an Ames test.

As the substance tested contains a low proportion of the notified polymer (< 30%), the toxicological effects seen may not be due to the polymer itself. It is noted that the notified polymer contains an impurity which has been classified as a skin sensitiser. However the sensitisation potential of the notified polymer cannot be ruled out.

Health hazard classification

As only limited toxicity data were provided, the notified polymer cannot be classified according to the *Globally Harmonised System for the Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia, or the *Approved Criteria for Classifying Hazardous Substances* (NOHSC, 2004).

6.3. Human Health Risk Characterisation

6.3.1. Occupational Health and Safety

The sensitisation potential of the notified polymer cannot be ruled out. The polymer also contains a hazardous impurity which may cause skin sensitisation.

The notified polymer is to be used as a component of aerospace sprayable sealant. The polymer will be repackaged and applied in well-controlled industrial settings by trained personnel. The potential for dermal, ocular and inhalation exposure to the notified polymer during repackaging and application is expected to be

minimised by the use of PPE including powered air purifying respirator (PAPR) hood as respiratory protection. Safe work practices such as restricted entry to application areas and avoiding contact with the product will further reduce the exposure.

Provided that adequate workplace control measures are in place to reduce the potential for exposure to the notified polymer during the operations, the risk to workers is not considered to be unreasonable.

6.3.2. Public Health

The notified polymer is intended for industrial use only and the public is not expected to be exposed to the polymer. Therefore, the risk to public health is not considered to be unreasonable.

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 into Australia and will be used as a component of a sprayable sealant for aircraft. Therefore, no release of the notified polymer to the environment is expected from the manufacturing process.

At the repackaging site, the notified polymer will be transferred from the import containers to dual connecting cartridges in an automated process. Therefore, release of the notified polymer to the environment during repacking may occur only in the event of an accident. Any spilt notified polymer is expected to be contained and collected for reuse or disposal to landfill.

RELEASE OF CHEMICAL FROM USE

The spray application of the sealant to aircraft fuel tanks will be applied in an industrial environment only by trained professional operators. Therefore, no significant release is expected from the application. Once the sealant containing the notified polymer is cured, the polymer will be bound into the matrix of the finished sealant coating and will not be available to 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 be incorporated in an inert polymer matrix adhering to the aircraft fuel tanks after application. It is expected to share the fate of the tank substrates to which it is applied and be disposed of to landfill or be subjected to metal recycling processes at the end of the tanks' useful life. Residual notified polymer in empty containers is expected to be disposed of to landfill with the containers.

7.1.2. Environmental Fate

No environmental fate data were submitted. The majority of the notified polymer is expected to be irreversibly cured into an inert polymer matrix as part of its use pattern and is therefore not expected to be mobile, bioavailable nor readily biodegradable in this form. The notified polymer disposed of to landfill is not expected to be mobile given the majority is expected to cure readily after application to form insoluble cured polymeric masses. Bioaccumulation of the notified polymer is unlikely as it is not expected to cross biological membranes due to its high molecular weight and limited potential for aquatic exposure. The notified polymer will eventually degrade in landfill or by thermal decomposition during metal reclamation processes, to form water and oxides of carbon, nitrogen, and sulphur.

7.1.3. Predicted Environmental Concentration (PEC)

A predicted environmental concentration (PEC) was not determined because the notified polymer is not expected to be released to aquatic compartment at significant level based on its proposed use pattern. Further, the notified polymer will be cured to form insoluble, non-bioavailable, high molecular weight solids after application.

7.2. Environmental Effects Assessment

The notifier has provided studies for fish, daphnids, and algae based on a product containing < 30% of the notified polymer and significant amount of unreacted low molecular weight species. These results do not adequately represent the ecotoxicity of the notified polymer to aquatic organisms, and are hence not

summarised.

Polymers without significant ionic functionality are generally of low concern to the aquatic environment. In addition, significant exposure of the notified polymer to aquatic organisms is unlikely based on the reported use pattern (as a component of a sprayable sealant for aircraft). Furthermore, the majority of the notified polymer will be bound within the inert matrix of cured sealant after application and is not expected to be bioavailable.

7.2.1. Predicted No-Effect Concentration

The predicted no-effect concentration (PNEC) for the notified polymer has not been calculated as no reliable ecotoxicological data for the polymer were submitted and the notified polymer is not expected to be significantly exposed to the aquatic environment.

7.3. Environmental Risk Assessment

The risk quotient (Q = PEC/PNEC) for the notified polymer has not been calculated as release to the aquatic environment is not expected based on its reported use pattern as a component of sealants. The majority of the notified polymer will be eventually disposed of to landfill as cured sealant. In the cured sealant, the notified polymer will be irreversibly bound in an inert polymer matrix, and is unlikely to be bioavailable or mobile in this form. Therefore, based on the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

APPENDIX A: PHYSICAL AND CHEMICAL PROPERTIES

Vapour Pressure Vapour Pressure < 7.90×10^{-3} Pa (7.90×10^{-6} kPa) at 20°C for the test substance containing < 30% the notified polymer

Method OECD TG104 Vapour Pressure

Remarks Isothermal thermogravimetric effusion method was used, which was validated in the range of 10^{-8} - 10^{3} Pa using a set of reference chemicals with known vapour pressures. The evaporation rates of the notified polymer at defined isothermal temperature were determined from the weight loss of the sample over appropriate periods of time. Linear regression analysis was performed using a least squares method. The vapour pressure at 20°C was determined to be 7.9×10^{-3} Pa. It is noted that the test substance contained significant amount of low molecular weight (unreacted) species and only < 30% of the notified polymer. Therefore, the vapour pressure of the notified polymer is expected to be lower than the determined value.

Test Facility NOTOX B. V. (2011)

Water Extractivity 55.6 mg/g at 20 °C for the test substance containing < 30% the notified polymer

Method OECD TG 120 Solution/Extraction Behaviour of Polymer in Water.
EC Council Regulation No 440/2008 A.20 Solution/Extraction Behaviour of Polymer in Water.

Remarks Flask Method was used. The samples for extractivity analysis were prepared by agitation of the notified polymer/water mixtures (10 g/L) for 24 hours at 20°C, followed by centrifugation. The analysis was conducted using HPLC-UV method after dilution in 50/50 (v/v) THF/water. The analysed mean concentration was 572 mg/L. Therefore, the extractivity was determined to be 55.6 mg/g initial polymer sample at measured value of 11.2. It is noted that the test substance contained significant amount of low molecular weight (unreacted) species and only < 30% of the notified polymer. Therefore, these results do not adequately represent the water solubility/extractivity of the notified polymer. The notified polymer is expected to be at least water dispersible based on the presence of hydrophilic moieties in the chemical structure.

Test Facility NOTOX B. V (2009)

Hydrolysis as a Function of pH $t_{½}$ = 85 days at pH 4, > 1 year at pH 7 and 9 at 25°C for the test substance containing < 30% the notified polymer

Method OECD TG 111 Hydrolysis as a Function of pH.
EC Council Regulation No 440/2008 C.7 Degradation: Abiotic Degradation: Hydrolysis as a Function of pH.

pH	*T (°C)*	$t_{½}$
4	25	85 days
7	25	> 1 year
9	25	> 1 year

Remarks Following a preliminary test, the main test was conducted at 20°C, 50°C and 60°C at each pH value of 4, 7 and 9 for up to 31 days. The solutions of nominal concentration 100 mg/L were prepared by using stock solution of the notified polymer in THF. The mean recovery for each of the pH level 4, 7 and 9 was determined to be 93%, 98%, and 103%, respectively. Based on the determined data, the half-life of the notified polymer at different pH and temperature was determined and converted to the equivalent half-life for a temperature of 25°C. It is noted that the test substance contained significant amount of low molecular weight (unreacted) species and only < 30% of the notified polymer. Therefore, these results do not adequately represent the hydrolysis property of the notified polymer. The notified polymer does not contain hydrolysable functional groups, and therefore, is not expected to hydrolyse in the environmental pH range of 4 - 9.

Test Facility NOTOX B. V (2011)

Partition Coefficient (n-octanol/water) log Pow = 2.38 at 20 °C for the test substance containing < 30% the notified polymer

Method OECD TG 117 Partition Coefficient (n-octanol/water).
EC Council Regulation No 440/2008 A.8 Partition Coefficient.

Remarks Estimation Method was used. The solubility of the notified polymer in octanol and water were determined using HPLC-UV (after dilution in 50/50 (v/v) THF/water) to be 150 and 6.4 g/L, respectively. The solutions for solubility analyses were prepared by agitation of the notified polymer/octanol or water mixtures for up to 72 hours at 20°C, followed by centrifugation. The log Pow is therefore estimated to be 2.38. It is noted that the test substance contained significant amount of low molecular weight (unreacted) species and only < 30% of the notified polymer. Therefore, these results do not adequately represent the partition property of the notified polymer. The notified polymer is expected to have potential to partition to water phase based on the presence of hydrophilic moieties in the chemical structure.

Test Facility NOTOX B. V (2009)

Adsorption/Desorption – screening test log K_{oc} = 2.68 for the test substance containing < 30% the notified polymer

Method OECD TG 121 Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC).
European Community (EC), EC no. 440/2008, Guideline C.19: "Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC).

Remarks Solutions of reference substances with known log Koc values based on soil adsorption data and the test substance were analysed. A 1.12 g/l stock solution of formamide in methanol was used. The stock solution was diluted to obtain an end solution of 55/45 (v/v) methanol/water. The HPLC analysis was performed at neutral pH with a column temperature of 35°C. The capacity factor (k') of each compound was calculated from its retention time. Linear regression analysis was performed using the least squares method. The log Koc value for the test substance was calculated to be 2.68 by substituting its mean log k' in the calibration curve. It is noted that the test substance contained significant amount of low molecular weight (unreacted) species and only < 30% of the notified polymer. Therefore, these results do not adequately represent the adsorption property of the notified polymer. The notified polymer is not expected to have strong adsorption to sediment soil from water phase based on the presence of hydrophilic moieties in the chemical structure.

Test Facility NOTOX B. V. (2011)

Dissociation Constant Not determined

Method OECD TG 112 Dissociation Constants in Water.

Remarks Based on the water solubility of the test substance the titration method (with aqueous hydrochloric acid) was used for the determination of its pKa values. With the titration method no pKa values for the polymeric part of the test substance were obtained. The notifier provided calculated pKa values of 5.3 and 4.7 for $RC_6H_4NH_3^+$ using the Perrin calculation method. However, the notified polymer is not considered to contain any readily dissociable functional groups. Therefore, it is not considered to be ionised in the environment.

Test Facility NOTOX B. V. (2011)

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