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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Fyrol PNX

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Street Address:	334 - 336 Illawarra Road MARRICKVILLE NSW 2204, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX	+ 61 2 8577 8888
Website:	www.nicnas.gov.au

Director
NICNAS

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FULL PUBLIC REPORT

Polymer in Fyrol PNX

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Swift and Company Ltd (ABN 44000005578)
Level 1
372 Wellington Rd
MULGRAVE VIC 3170

NOTIFICATION CATEGORY
Limited: Polymer with NAMW ≥ 1000 (greater than 1 tonne per year).

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication: Chemical name, CAS No., molecular and structural formulae, molecular weight, spectral data, constituents, purity, impurities, import volume, specific use and 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
None known.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Fyrol PNX

MOLECULAR WEIGHT

Number Average Molecular Weight (Mn)	> 1000
Weight Average Molecular Weight (Mw)	> 1000
% of Low MW Species < 1000	< 40
% of Low MW Species < 500	< 20

METHODS OF DETECTION AND DETERMINATION

METHOD	Infrared spectroscopy
Remarks	A reference spectrum was provided.

3. COMPOSITION

DEGREE OF PURITY
High.

HAZARDOUS IMPURITIES/RESIDUAL MONOMERS
None.

NON HAZARDOUS IMPURITIES/RESIDUAL MONOMERS (>1% by weight)

One impurity at < 5%.

ADDITIVES/ADJUVANTS
None.

4. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS
As the neat chemical in 200 L steel drums or Intermediate Bulk Containers.

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	1-10	10-50	200-500	200-500	200-500

USE
The polymer is an additive in rubber production.

5. PROCESS AND RELEASE INFORMATION

5.1. Distribution, transport and storage

PORT OF ENTRY
Melbourne

IDENTITY OF MANUFACTURER/RECIPIENTS
Polyurethane and rubber manufacturers located in metropolitan centres in Australia.

TRANSPORTATION AND PACKAGING
Fyrol PNX is not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail

Fyrol PNX at a high concentration will be imported, stored and transported in steel drums of 200 L capacity or intermediate bulk containers. Fyrol PNX imported in intermediate bulk containers will be drummed locally by a licensed contractor prior to storage. Transport is by road or rail.

5.2. Operation description

(a) Drumming

Fyrol PNX removed from intermediate bulk containers*	Fyrol PNX placed within steel drums*	Warehouse for distribution

*There is a potential for spillage of the notified polymer to occur at these points. Such a spill would be contained to the plant through existing bunding. Good work practices, however, minimise the probability of spillage occurring.

Drumming is performed by a licensed contractor and allows the polymer to be stored in 200L steel drums for further transportation and use. The drumming of the polymer is an automated process minimizing the risk of occupational exposure.

(b) Manufacture (Polyurethanes)

Fyrol PNX conveyed to premixing tank and added to solution.*	Fyrol PNX and other ingredients (isocyanates, solvent) conveyed to mixing tank *	High speed dispersing and blending in mixer *	Batch adjust and testing*	Warehouse for distribution

*There is a potential for spillage of the notified polymer to occur at these points. Such a spill would be contained to the plant through existing bunding. Good work practices, however, minimise the

probability of spillage occurring.

Polyurethanes are produced by mixing polyols with polyisocyanates in the required concentrations. Auxiliary materials, such as Fyrol PNX are added at the premixing station while the raw materials are being conveyed to the mixer. The raw material is conveyed using metering pumps to the mixing head. Following mixing at high or low pressure the reaction is completed and the polyurethane formed after 0.5 to 30 minutes, depending on the catalyst used. Final polyurethane properties are not achieved for 24 to 48 hours.

Finished products contain the polymer (Fyrol PNX) at less than 10% within a stable polyurethane rubber. Quality control and testing of polyurethanes are done by examining the flammability, strength and durability of the polyurethane. Elaborate control equipment and laboratory testing procedures are employed to test the finished products.

5.3. Occupational exposure

Number and Category of Workers

Category of Worker	*Number*	*Exposure Duration (hrs/day)*	*Exposure Frequency (days/yr)*
Import			
Unloading at Wharf	4	4	20
Delivery	4	4	20
Decanting			
Maintenance personnel	2	1-2	80-100
Storage and internal transport personnel	4	2-4	100-130
Transport	10	1-2	40-50
Application			
Application operators	30	1-2	40-50
Maintenance personnel	2	1-2	20
Laboratory personnel	5	1-2	20

Exposure Details

Import, transport and distribution

During transport and storage, workers are unlikely to be exposed to the notified polymer except when packaging is accidentally breached.

Polymer drumming

The polymer as imported at a high concentration will be drummed. This process is automated to minimize occupational exposure. There is the possibility of incidental dermal or ocular exposure resulting from spills or during cleaning. This will be minimised by the use of appropriate PPE (gloves, coveralls and glasses conforming to Australian Standards) and the small quantities involved.

Polyurethane manufacture

Fyrol PNX is automatically added to the raw materials whilst being conveyed to the mixer. The occupational exposure is expected to be low due to the automation of the process and the presence of engineering controls, including exhaust ventilation. There is the possibility of incidental dermal or ocular exposure resulting from spills or during cleaning. This will be minimized by the use of appropriate PPE (gloves, coveralls and glasses conforming to Australian Standards) during cleaning. Small quantities will be required for quality control testing however they will be within the polyurethane rubber matrix.

5.4. Release

RELEASE OF CHEMICAL AT SITE

The notified polymer will be imported to Australia to be used as an additive in rubber production. Drumming and manufacture of the polyurethanes will take place in polyurethane and rubber manufacture located in metropolitan centres in Australia.

Drumming will be performed by a licensed contractor to remove the notified polymer from

intermediate bulk containers in 200L steel drums for storage, transportation and use. The drumming of the polymer is an automated process. There is a potential for spillage of the notified polymer to occur at these points. Such a spill would be contained to the plant through existing bunding.

It is estimated that approximately 0.25% waste is generated by cleaning up minor spills, cleaning up drumming equipment and rinsing intermediate bulk containers. This waste will be disposed of through licensed waste disposal contractors. It is expected that the notified chemical will be disposed of by landfill or incineration.

Manufacture of the polyurethanes is done by adding the notified polymer and other materials. The raw materials are conveyed using metering pumps to the mixing head. Following mixing at high or low pressure the reaction is completed and the polyurethane formed after 0.5 to 30 minutes, depending on the catalyst used. There is a potential for spillage of the notified polymer to occur at these points. Such a spill would be contained to the plant through existing bunding.

Finished products contain the notified polymer (Fyrol PNX) within a stable polyurethane rubber.
It is estimated that approximately 0.5% waste is generated by cleaning up minor spills, cleaning out manufacturing equipment and rinsing drums during manufacture. It is expected that the notified chemical will be disposed of by landfill or incineration.

RELEASE OF CHEMICAL FROM USE
The final product will be distributed to companies in Australia for uses in different application. There is no release of the polymer to the environment and the ultimate fate of the notifier chemical will be that of the rubber at the end of its useful lives cycle. This is likely to be either placed into landfill or incinerated.

5.5. Disposal
Waste will be disposed of through licensed waste disposal contractors and incinerated.

5.6. Public exposure
Fyrol PNX is added to polyurethane reactors under controlled conditions in industrial plants. There is little likelihood of exposure to the public since the notified polymer forms is contained in a polyurethane rubber and is unavailable for exposure.

6. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20ºC and 101.3 kPa	Light amber liquid with apple odour.
Melting Point	Liquid at room temperature
Boiling Point	435°C (estimated); expected to boil at a range of temperatures and may decompose before boiling.
METHOD	EIPSuite estimation.
Remarks	The notified polymer has a high molecular weight distribution, therefore it can be expected not to have a discrete boiling temperature.
Density	1300 kg/m^3 at 25°C
Vapour Pressure	6.0 x 10^{-10} kPa
METHOD	EIPSuite estimation.
Remarks	The polymer has a relatively high molecular weight, therefore it is not likely to be volatile.
Water Solubility	33.33 g/L
METHOD	No guideline test provided. The water solubility is taken from the Acute toxicity to Daphnia (preparation of stock solution).

Remarks Accurately measured amount of 5 g notified polymer dissolved to 150 mL. The substance dissolved well under stirring at room temperature.
TEST FACILITY Akzo Nobel (2003)

Water Solubility 156 g/L – based on the log K_{ow} value
1000 g/L – based on fragment estimation

METHOD EPIWIN

Hydrolysis as a Function of pH Not tested. The linkages that form the side chains of the polymer are expected to be subject to hydrolysis under conditions of high pH (>9), but not under the pH conditions normally encountered in the environment.

Partition Coefficient (n-octanol/water) log Pow = -0.565

Remarks The notified polymer (0.072 g) was dissolved in 1-octanol (8.3 g) and mixed with water (10.2 g) for 2 hours in a 25 mL centrifuge tube. The emulsion was centrifuged for 6 minutes. The clear upper and lower phases were separated by pippeting and each was examined for total phosphate content by ICP spectroscopy.
TEST FACILITY Akzo Nobel (1997)

Partition Coefficient (n-octanol/water) log P_{ow} = -1.04

METHOD EPIWIN

Adsorption/Desorption log K_{oc} = 4.216
– screening test

METHOD EPIWIN
Remarks The notified polymer has high water solubility and a low logP_{ow} value, therefore it is likely to partition to the water column. While the polymer may adsorb through other mechanisms, the higher logK_{oc} obtained from EPIWIN is based on the smallest possible structure of the polymer and therefore does not truly represent the behaviour of the polymer.

Dissociation Constant Not determined

Particle Size Polymer is a liquid.

Flash Point >200°C (MSDS)

Flammability Limits Not determined to be flammable (MSDS).

Autoignition Temperature Not determined, > 200°C (see flash point).

Explosive Properties Not explosive (MSDS).

Reactivity The notified polymer is stable under normal environmental conditions.

7. TOXICOLOGICAL INVESTIGATIONS

The toxicology studies were conducted with E-95020T, a lower molecular weight (NAMW < 1000) form of the notified polymer.

Endpoint and Result	*Assessment Conclusion*
Rat, acute oral LD50 > 5000 mg/kg bw	low toxicity
Rabbit, acute dermal LD50 > 2000 mg/kg bw	low toxicity
Rabbit, skin irritation	slightly irritating
Rabbit, eye irritation	slightly irritating
Genotoxicity – bacterial reverse mutation	non mutagenic

7.1. Acute toxicity – oral

TEST SUBSTANCE E-95020T

METHOD

OECD TG 401 Acute Oral Toxicity – Limit Test.

Species/Strain	Rat/SD
Vehicle	None
Remarks - Method	No deviations from protocol identified.

RESULTS

Group	*Number and Sex of Animals*	*Dose mg/kg bw*	*Mortality*
1	5/sex	5000	0

LD50	> 5000 mg/kg bw
Signs of Toxicity	None
Effects in Organs	None
Remarks - Results	None

CONCLUSION E-95020T is of low toxicity via the oral route.

TEST FACILITY Covance Laboratories (1997a)

7.2. Acute toxicity – dermal

TEST SUBSTANCE E-95020T

METHOD

OECD TG 402 Acute Dermal Toxicity – Limit Test.

Species/Strain	Rabbit/NZW
Vehicle	None
Type of dressing	Occlusive.
Remarks - Method	No deviations from protocol identified.

RESULTS

Group	*Number and Sex of Animals*	*Dose mg/kg bw*	*Mortality*
1	5/sex	2000	0

LD50	> 2000 mg/kg bw
Signs of Toxicity - Local	Very slight irritation resolving by day 3.
Signs of Toxicity - Systemic	None
Effects in Organs	None

Remarks - Results	None

CONCLUSION E-95020T is of low toxicity via the dermal route.

TEST FACILITY Covance Laboratories (1997b)

7.3. Irritation – skin

TEST SUBSTANCE E-95020T

METHOD Not specifically stated but appears to be in accordance with: OECD TG 404 Acute Dermal Irritation/Corrosion.

Species/Strain	Rabbit/NZW
Number of Animals	6
Vehicle	None
Observation Period	72 hours
Type of Dressing	Semi-occlusive.
Remarks - Method	No deviations from protocol identified.

RESULTS

Lesion	*Mean Score**	*Maximum Value*	*Maximum Duration of Any Effect*	*Maximum Value at End of Observation Period*
Erythema/Eschar	0.17	1	48 hours	0
Oedema	0	1	4 hours	0

*Calculated on the basis of the scores at 24, 48, and 72 hours for ALL animals.

Remarks - Results	None

CONCLUSION E-95020T is slightly irritating to the skin.

TEST FACILITY Covance Laboratories (1997c)

7.4. Irritation – eye

TEST SUBSTANCE E-95020T

METHOD Not specifically stated but appears to be in accordance with: OECD TG 405 Acute Eye Irritation/Corrosion.

Species/Strain	Rabbit/NZW
Number of Animals	6
Observation Period	96 hours
Remarks - Method	No deviations from protocol identified.

RESULTS

Lesion	*Mean Score**	*Maximum Value*	*Maximum Duration of Any Effect (hrs)*	*Maximum Value at End of Observation Period*
Conjunctiva: redness	0.7	2	72	0
Conjunctiva: chemosis	0.1	1	48	0
Conjunctiva: discharge	0	3	1	0
Corneal opacity	0	0		0
Iridial inflammation	0	0		0

*Calculated on the basis of the scores at 24, 48, and 72 hours for ALL animals.

Remarks - Results	None

CONCLUSION E-95020T is slightly irritating to the eye.

TEST FACILITY	Covance Laboratories (1997d)

7.5. Genotoxicity – bacteria

TEST SUBSTANCE	E-95020T
METHOD	Ames *et al.* (1975) and Green and Muriel (1976). Plate incorporation procedure
Species/Strain	*S. typhimurium*: TA1535, TA1537, TA98, TA100 *E. coli*: WP2*uvr*A
Metabolic Activation System	S9 fraction from Aroclor 1254-induced rat liver.
Concentration Range in Main Test	a) With metabolic activation: 100 - 5000 µg/plate b) Without metabolic activation: 100 - 5000 µg/plate
Vehicle	DMSO
Remarks - Method	No protocol deviations noted.
RESULTS	No cytotoxicity or precipitation of E-95020T was noted in either the preliminary tests or the main tests and no increase in revertant numbers was noted in any test.
Remarks - Results	Negative controls were within historical limits and positive controls demonstrated the sensitivity of the test system.
CONCLUSION	E-95020T was not mutagenic to bacteria under the conditions of the test.
TEST FACILITY	Covance Laboratories (1997e)

8. ENVIRONMENT

8.1. Environmental fate

8.1.1. Ready biodegradability

TEST SUBSTANCE

METHOD	OECD TG 301 D Ready Biodegradability: Closed Bottle Test.
Inoculum	Secondary activated sludge
Exposure Period	28 days
Auxiliary Solvent	None
Remarks - Method	The concentrations of the notified polymer in the test bottle and control were 4 and 6.7 mg/L respectively. Two deviations from the OECD guideline occurred: o The COD of the notified polymer turned out to be low and increasing the initial test concentration from 2 to 4 mg/L improved accuracy of the test. o The test was prolonged by measuring the concentration of oxygen in the bottles day 28 using a special funnel, which fitted exactly on the bottle. When the oxygen electrode was inserted in the BOD bottle to measure oxygen concentration, the medium dissipated by the electrode was collected in the funnel. After withdrawal of the oxygen electrode the medium collected flowed back into the BOD bottle, followed by the removal of the funnel and closing of the BOD bottle.

RESULTS

Test substance		*Sodium Acetate*	
Day	*% Degradation*	*Day*	*% Degradation*
0	0	0	0
7	0	7	61
14	0	14	80
21	0		
28	0		
56	0		
84	0		
140	2		

Remarks - Results

The report states inhibition of microorganisms by the test compound in the close bottle test was not determined because possible toxicity of the notified polymer to microorganisms degrading sodium acetate is not relevant. Inhibition of endogenous respiration of the inoculum by the notified polymer was not detected. As this test was not conducted and the polymer has high percentage low molecular weigh species the toxicity to microorganisms cannot be ruled out.

CONCLUSION

The notified polymer is not classified as ready biodegradable under the test conditions.

TEST FACILITY

Akzo Nobel (2001)

8.2. Ecotoxicological investigations

8.2.2. Acute/chronic toxicity to aquatic invertebrates

TEST SUBSTANCE

Notified polymer

METHOD

EC Directive 92/69/EEC C.2 Acute Toxicity for Daphnia – static conditions

Species: *Daphnia magna*
Exposure Period: 48 hours
Auxiliary Solvent: None
Water Hardness: Not described
Analytical Monitoring: Not described
Remarks - Method: Accurately measure amount of 5 g notified chemical and dissolved to 150 mL. The substance dissolved well under stirring at room temperature. The pH of the solution was measured to be 2.3 and adjusted to 6.5 with 1M NaOH and the volume make up to 500 mL. A homogeneous, clear solution was obtained.

Chemical analysis was performed by taking 5 mL from 62.5, 250 and 1000 mg/L. The samples were taken before distribution of test solution and the addition of animal and at the end of the test. The chemical analysis was based on measurement of the liberated phosphate after hydrolysis of the notified chemical, by the reaction of phosphate ion with molibdate and antimony to an molibdate-phosphate-antimony complex.

RESULTS

Concentration mg/L		*Number of D. magna*	*Number Immobilised*	
Nominal	*Actual*		*24 h*	*48 h*
Control	-	20	0	0
62.5	57	20	0	1
125	-	20	0	0
250	245	20	0	13
500	-	20	3	15

1000	997	20	5	15

LC_{50}	224 mg/L at 24 hours
LC_{100}	1000 mg/L at 24 hours
NOEC (or LOEC)	125 mg/L at 48 hours
Remarks - Results	Chemical analysis results show that the notified polymer is not hydrolysed to phosphate during the test and that the measured concentrations were higher than 92% of the nominal concentration. Sublethal effects were not observed in the test concentrations where no immobility was observed.
CONCLUSION	The notified polymer is toxic to *Daphnia magna* under the tested conditions.
TEST FACILITY	Akzo Nobel (2003)

9. RISK ASSESSMENT

9.1. Environment

9.1.1. Environment – exposure assessment

The drumming and manufacture of the polyurethanes will take place in polyurethane and rubber manufacturing facilities located in metropolitan centres in Australia.

Approximately 0.25% waste is generated by cleaning up minor spills, cleaning up drumming equipment and rinsing intermediate bulk containers during drumming process. This waste will be disposed of through licensed waste disposal contractors, expected to be mainly to landfill although incineration of the waste may also occurs.

Approximately 0.5% waste is generated by cleaning up minor spills, cleaning out manufacturing equipment and rinsing drums during manufacture of the polyurethanes. This waste will also be disposed of through licensed waste disposal contractors, expected to be mainly to landfill although incineration of the waste may also occurs.

The final notified polymer ultimate fate will be that of the polyurethanes rubber at the end of their useful lives cycle, and these are likely to be either recycling, incineration or to landfill.

9.1.2. Environment – effects assessment

Only ecotoxicological data for daphnia was available for the notified polymer. Since there is only data for 1 trophic level a safety factor of 1000 is used to calculate a PNEC with the LC_{50} for fish of 224 mg/L. PNEC is 0.224 mg/L.

9.1.3. Environment – risk characterisation

The risk quotient calculations are based on a worst case scenario, where the total waste produced (0.75%) during drumming and manufacture is released to the STP. The predicted environmental concentration (PEC) values are estimated for either discharging into a large sewage treatment works or into a small sewage treatment works, assuming no partitioning to sludge within the sewage treatment works.

Process or Dilution Factor	Large STP	Small STP
Typical notified chemical waste expected per year	3750 kg	3750 kg
Typical notified chemical waste expected per day	14.42 kg	14.42 kg
STP daily Volume	100 ML	4 ML
Concentration in effluent from sewage treatment plant	144.2 µg/L	3606 µg/L

Predicted environmental concentrations (PECs) in receiving waters		
Ocean (Dilution Factor 1:10)		
PEC	14.42 µg/L	361 µg/L
River (Dilution Factor 1:1)		
PEC	144.2 µg/L	3606 µg/L

The low Koc value and the inherent biodegradability test results indicate that the test substance is not likely to adsorb to sludge. Therefore, the notified chemical will remain in the water column and no further mitigation is possible.

The potential for bioaccumulation is low due to the very high water solubility, large molecular weight and low log Kow of the notified chemical.

The Risk Quotient (PEC/PNEC).

	Location	PEC* µg/L	PNEC µg/L	Risk Quotient (RQ)*
Large STP	Ocean outfall	14.42	224	0.064
	Inland River	144.2	224	0.644
small STP	Ocean outfall	361	224	1.610
	Inland River	3606	224	16.097

The resulting risk quotient (RQ = PEC/PNEC) values for the aquatic environment, assuming that the chemical is not removed in the communal STP, are all below 1 for both freshwater and marine water for a discharge into a large STP. However, the RQ values indicate concern if the notified polymer is discharge to a small STP.

Under normal use there will be no release into the aquatic environment. The above estimation were done based on a worse case scenario to see what would happen if the notified polymer is released to the water column. The notified chemical is not expected to pose any significant hazard to the environment.

9.2. Human health

9.2.1. Occupational health and safety – exposure assessment

Import, transport and distribution

During transport and storage, workers are unlikely to be exposed to the notified polymer except when packaging is accidentally breached.

Polymer drumming

Polymer drumming is automated to minimize occupational exposure. Incidental dermal or ocular exposure resulting from spills or during cleaning will be minimised by the use of appropriate PPE (gloves, coveralls and glasses conforming to Australian Standards) and the small quantities involved and should therefore be low and infrequent.

Polyurethane manufacture

Fyrol PNX is automatically added to the raw materials whilst being conveyed to the mixer. The occupational exposure is expected to be low due to the automation of the process and the presence of engineering controls, including exhaust ventilation. There is the possibility of incidental dermal or ocular exposure resulting from spills or during cleaning. This will be minimized by the use of appropriate PPE (gloves, coveralls and glasses conforming to Australian Standards) during cleaning and should therefore be low and infrequent. Small quantities will be required for quality control testing however they will be within the polyurethane rubber matrix and will not be bioavailable.

9.2.2. Public health – exposure assessment

There is little likelihood of exposure to the public since the notified polymer is contained within a polyurethane rubber and is unavailable for exposure.

9.2.3. Human health – effects assessment

Based on available toxicological data on a lower molecular weight form of the notified polymer, it can be predicted to be of low acute toxicity, a slight irritant and non genotoxic. However, as not all endpoints were tested and the polymer contains high levels of low molecular weight species, the possibility of other adverse health effects cannot be discounted.

Based on the available data, the notified chemical is not classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC, 2004).

9.2.4. Occupational health and safety – risk characterisation

The toxicological data supplied suggest the notified polymer is unlikely to be acutely toxic, irritating or genotoxic. However, there is some uncertainty in the overall toxicological profile since not all endpoints were tested and the polymer contains high levels of low molecular weight species. Overall exposure to workers involved in transport, storage, polyurethane manufacture, use and disposal of the notified polymer either as such or compounded into polyurethane rubber is proposed to be low and infrequent. The notified polymer is imported in a high concentration so that exposure is possible while drumming but is controlled by the use of gloves, goggles and overalls. After automatic addition during polyurethane rubber manufacture the notified polymer is at a low concentration. Repeated or prolonged exposure is unlikely to occur, so adverse health effects in the occupational settings described would be unlikely.

9.2.5. Public health – risk characterisation

The public are only likely to be exposed to the notified polymer when compounded into polyurethane rubber where it is not bioavailable. Therefore, the public health risk from introduction of the notified polymer into Australia can be considered to be negligible.

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

10.1. Hazard classification

Based on the available data on a low molecular weight form of the notified polymer it is not classified as hazardous under the NOHSC *Approved Criteria for Classifying Hazardous Substances*. However, the polymer contains high levels of low molecular weight species which may display adverse health effects.

10.2. Environmental risk assessment

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

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 Negligible Concern to public health when used as described.

11. MATERIAL SAFETY DATA SHEET

11.1. Material Safety Data Sheet

The MSDS of the notified chemical provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Preparation of Material Safety Data Sheets* (NOHSC, 2003). 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 notified chemical provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Labelling of Workplace Substances* (NOHSC, 1994). The accuracy of the information on the label remains the responsibility of the applicant.

12. RECOMMENDATIONS

CONTROL MEASURES
Occupational Health and Safety

- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified chemical 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 chemical should be disposed to approved landfill and in accord with regulations.

Emergency procedures

- Minor spills normally do not need any clean up measurements. Major spills, prevent spills from entering the water courses. Avoid using any sawdust or combustible material. After spills, wash area preventing runoff from entering drains. Is a significant quantity enters drain, advise emergency services

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 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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