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

**FULL PUBLIC REPORT**

**Sokalan HP 25**

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**Director  
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## **FULL PUBLIC REPORT**

<b>Sokalan HP 25</b>
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### **1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

BASF Australia Ltd (ABN 62 008 437 867)  
500 Princes Highway  
Noble Park VIC 3174

Agfa-Gevaert Limited (ABN 12 000 404 722)  
Bldg1, Greenwood Business Park, 301 Burwood Highway  
Burwood VIC 3125

NOTIFICATION CATEGORY

Limited-small volume: Polymer with NAMW < 1000 (1 tonne or less per year).

EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details claimed exempt from publication:

Chemical identity details  
Purity  
Polymer details

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

Variation to the schedule of data requirements is claimed as follows:

Melting Point  
Boiling Point  
Density  
Water Solubility  
Vapour Pressure  
Hydrolysis as a Function of pH  
Partition Coefficient  
Adsorption/Desorption  
Dissociation Constant  
Flammability Limits  
Autoignition Temperature

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None.

NOTIFICATION IN OTHER COUNTRIES

TSCA (USA 2000), DSL (Canada 1999)

### **2. IDENTITY OF CHEMICAL**

MARKETING NAME(S)

Polymer in EN 232, Sokalan HP 25 (ingredient in imported product)

SPECTRAL DATA

METHOD	IR, GPC
Remarks	Spectra were provided

### 3. COMPOSITION

DEGREE OF PURITY  
37%

### 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 developer solutions at less than 5%.

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>	< 1	< 1	< 1	< 1	< 1

USE

The polymer will be used as a dispersing agent in an aqueous developer solution for processing exposed aluminium printing plates for use in printing text and images on to paper surfaces.

### 5. PROCESS AND RELEASE INFORMATION

#### 5.1. Distribution, transport and storage

PORT OF ENTRY  
Melbourne

IDENTITY OF MANUFACTURER/RECIPIENTS

The main warehouse location for the storage of the developer solution containing the notified polymer will be Scoresby, Victoria. The end user sites will be primarily be located at Alexandria (NSW), North Richmond (NSW), Townsville (QLD), Warwick (OLD), Regency Park (SA), Richmond (VIC), Noble Park (VIC) and Osborne Park (WA).

TRANSPORTATION AND PACKAGING

The notified polymer will be imported by sea into Australia as a component of the developer solution in, for example, 10 or 20 L jerrycans in fibreboard containers as part of a mixed chemical load in a shipping container. It will be transported as such by road to the Agfa-Gevaert warehouse and then distributed to customers in the printing industry. Developers are to be stored and transported at ambient temperature and normal atmospheric pressure.

#### 5.2. Operation description

At the end-use sites, which may be print shops, forms printers and newspaper presses, the developer solution containing < 5% of the notified polymer will initially be stored in a warehouse area. Unopened containers will be moved by forklift or by hand to the pre-press department for use in processing analogue negative plates.. During use, the developer is kept in the processing bath. Developer lost because of carry-over into the washwater system is refilled. At the end of bath life (typically 2-8 weeks), the developer is disposed of to waste.

#### 5.3. Occupational exposure

*Number and Category of Workers*

<i>Category of Worker</i>	<i>Number</i>	<i>Exposure Duration</i>	<i>Exposure Frequency</i>
Removing trapped film from the developer tank	1	2 minutes/day	Every 2-8 weeks

Removing exhausted developer solution from the developer tank, replacing the fresh working developer, and transferring exhausted working developer to holding tanks for neutralisation and further dilution before disposal	1	45 minutes	Every 2-8 weeks
Mixing developer solution for the replenisher tank (No dilution occurred)	1	5 minutes	Every 2-8 weeks
End-user	2	8 hours per day	200 days/year

#### *Exposure Details*

Workers should not normally be exposed to the developer containing < 5% of the notified polymer during transport or storage, as the containers will be unopened. Exposure could occur if spillage or accidental breaching of the containers occurred.

At the end-use sites, workers who are processing printing plates could have dermal/ocular exposure to the developer containing the notified polymer at < 5%. The printing plates are automatically processed in developer machines. The developer solution is poured into the developer tank of the machine and the tank cover is closed. Development takes place automatically without the release of any aerosol particles or exposure to the developer machine operator. When the developer solution has been exhausted, it is released by tube into a container and sealed for disposal.

Dermal/ocular exposure of workers to the developer could occur during the following processes:

- Removing trapped film from the developer tank;
- Removing exhaust developer solution from the developer tank, replacing the fresh working developer, and transferring exhausted working developer to holding tanks for neutralisation and further dilution before disposal;
- Mixing developer solution for the replenisher tank; and
- Engineering service of the film processing equipment containing diluted solution.

Workers wear protective clothing, safety glasses with side-shields and gloves to prevent exposure.

## **5.4. Release**

### **RELEASE OF CHEMICAL AT SITE**

The notified polymer is manufactured overseas, and does not undergo any reformulation on arrival in Australia. It is expected to be imported in 10 and 20 L containers. Environmental release is only expected to arise from accidental releases due to spill during transportation and storage, and should account for <1% of the total annual import volume. Spilt notified polymer is expected to be physically contained, absorbed and disposed of to landfill.

### **RELEASE OF CHEMICAL FROM USE**

Apart from the very small quantity (<1% of the total annual import volume) residual notified polymer contained within the import containers, which will be disposed of to landfill, the majority (>98%) of notified polymer is expected to be disposed of after treatment as trade-waste to the sewer after use in batches with a typical life of 2-8 weeks. Treatment at waste treatment plants is expected to involve evaporation of the water content to the atmosphere, extraction of solids, neutralisation of pH and batch testing prior to release to the sewer. Extracted solids are disposed of to secure landfill.

## **5.5. Disposal**

It is expected that some of the total annual import volume will be disposed of to landfill. The remainder of the total annual import volume is expected to be disposed of as trade waste to the sewer.

## **5.6. Public exposure**

The notified polymer will only be used in an industrial process, and no exposure to the public through this use is expected. There is potential for public exposure in the case of an accident during transport.

## **6. PHYSICAL AND CHEMICAL PROPERTIES**

Physico-chemical data have not been generated for the notified polymer, as it is never isolated from solution. This is because the new polymer is never isolated from water. The physico-chemical data below have not been conducted under GLP.

<b>Appearance at 20°C and 101.3 kPa</b>	Yellowish liquid (polymer solution)
<b>Melting Point/Freezing Point</b>	Pour point -5°C
Remarks	Test carried out on polymer solution. Full test report not provided.
<b>Boiling Point</b>	100°C at 101.3 kPa
Remarks	Test carried out on polymer solution. Full test report not provided.
<b>Density</b>	1100 kg/m <sup>3</sup> at 23°C
Remarks	Test carried out on polymer solution. Full test report not provided.
<b>Vapour Pressure</b>	Expected to be similar to water
Remarks	Test carried out on polymer solution. Full test report not provided.
<b>Water Solubility</b>	The notified polymer is produced as a 45% aqueous solution.
Remarks	Test carried out on polymer solution. Full test report not provided.
<b>Hydrolysis as a Function of pH</b>	Not Tested
Remarks	The notifier has provided the following information: Polycarboxylate polymers are stable against hydrolysis. The carboxylate ester functions are expected to be stable within the pH range of 4-9. Hydrolysis may be expected to under strong alkaline conditions.
<b>Partition Coefficient (n-octanol/water)</b>	Not Tested
Remarks	The notifier has provided the following information: The polymer dissociates in water. The partition coefficient therefore cannot be determined. The notified polymer is expected to partition to the water phase.
<b>Adsorption/Desorption</b>	Not Tested
Remarks	The notifier has provided the following information: Because of the negative charge of the carboxyl groups, polycarboxylates have a strong tendency towards adsorption on solid surfaces. In the sewerage system, polycarboxylates are removed from water by physico-chemical processes, such as adsorption on to particulate matter and precipitation. Their potential to migrate in the soil with rain or irrigation water is very low. (ECETOC 1993)
<b>Dissociation Constant</b>	The notified polymer is a polyelectrolyte. A single dissociation constant therefore cannot be determined. The carboxylic functions are reacted with sodium hydroxide to form the sodium salt. The polymer therefore fully dissociates in water, with some free acid around pH 4.
<b>Particle Size</b>	Not applicable as the material is supplied in solution.
<b>Flash Point</b>	The flash point for the notified polymer has not been determined.
<b>Flammability Limits</b>	The notified polymer has not been assessed for

flammability properties.

**Autoignition Temperature**

The autoignition temperature of the notified polymer has not been determined.

**Explosive Properties**

Structure of the notified polymer does not indicate an explosion hazard.

**Reactivity**

The notified polymer is not considered reactive under normal conditions of use. The product does not degrade or decompose, provided it is handled correctly.

**Viscosity**

≈ 4500 mPa.s at 20°C (aqueous solution)

Remarks

Information provided on MSDS for polymer solution

**7. TOXICOLOGICAL INVESTIGATIONS**

<i>Endpoint and Result</i>	<i>Assessment Conclusion</i>
Rat, acute oral LD50 >2000 mg/kg bw	low toxicity
Rabbit, skin irritation	slightly irritating
Rabbit, eye irritation	severely irritating

**7.1. Acute toxicity – oral**

TEST SUBSTANCE	Notified polymer (45% in water)
METHOD	Single oral administration by gavage
Species/Strain	Rat/Wistar/Dr. Thomae
Vehicle	Aqua Dest
Remarks - Method	

**RESULTS**

<i>Group</i>	<i>Number and Sex of Animals</i>	<i>Dose mg/kg bw</i>	<i>Mortality</i>
1	5 Males	2000	0
2	5 Females	2000	0

LD50	> 2000 mg/kg bw (1% significance level)
Signs of Toxicity	None
Effects in Organs	No pathological findings noted.
Remarks - Results	No abnormalities

CONCLUSION	The notified polymer is of low toxicity via the oral route.
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TEST FACILITY	BASF (1989)
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**7.2. Irritation – skin**

TEST SUBSTANCE	Notified polymer (45% in water)
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METHOD	OECD TG 404 Acute Dermal Irritation/Corrosion.
Species/Strain	Rabbit/White Vienna
Number of Animals	3 Males
Observation Period	72 h
Type of Dressing	Semi-occlusive.



Remarks - Method

No significant protocol deviations.

## RESULTS

<i>Lesion</i>	<i>Mean Score*</i> <i>Animal No.</i>			<i>Maximum Value</i>	<i>Maximum Duration of Any Effect</i>	<i>Maximum Value at End of Observation Period</i>
	1	2	3			
<i>Erythema/Eschar</i>	0.3	0.3	0.3	1	24 h	0
<i>Oedema</i>	0.0	0.0	0.0	0	none	0

\*Calculated on the basis of the scores at 24, 48, and 72 hours for EACH animal.

Remarks - Results

All animals showed erythema and the symptoms disappeared after 24 hours.

CONCLUSION

The notified polymer is very slightly irritating to the skin.

TEST FACILITY

BASF (1989a)

### 7.3. Irritation – eye

TEST SUBSTANCE

Notified polymer (45% in water)

METHOD

OECD TG 405 Acute Eye Irritation/Corrosion.

Species/Strain

Rabbit/ White Vienna

Number of Animals

2 Males, 1 Female

Observation Period

8 d

Remarks - Method

No significant protocol deviations.

## RESULTS

<i>Lesion</i>	<i>Mean Score*</i> <i>Animal No.</i>			<i>Maximum Value</i>	<i>Maximum Duration of Any Effect</i>	<i>Maximum Value at End of Observation Period</i>
	1	2	3			
<i>Conjunctiva: redness</i>	2.3	2.7	2.0	3	> 8 d	3
<i>Conjunctiva: chemosis</i>	2.3	1.3	1.0	3	> 8 d	2
<i>Conjunctiva: discharge</i>	3.0	2.3	3.0	3	> 8 d	3
<i>Corneal opacity</i>	1.0	1.0	1.0	1	> 8 d	2
<i>Iridial inflammation</i>	0.3	0.0	0.0	1	> 8 d	1

\*Calculated on the basis of the scores at 24, 48, and 72 hours for EACH animal.

Remarks - Results

After 1 hour, animal 3 had loss of corneal tissue.

After 24 hours, animal 1 had pupil contracted and suppuration, animal 2 had pupil contracted and small retractions in the eyelids and animal 3 had pupil contracted and loss of corneal tissue.

After 48 hours, animal 1 had suppuration and irritation index could not be read because of suppuration, animal 2 had suppuration and small retractions in the eyelids and animal 3 had loss of corneal tissue, pupil contracted and discharge of blood.

After 72 hours, animal 1 had suppuration and irritation index could not be read because of suppuration, animal 2 had suppuration, small retractions in the eyelids and discharge of blood and animal 3 had pupil contracted and discharge of blood.

Study discontinued after 8 days because of severe irritation for all animals persisting throughout the study. All animals had loss of corneal tissue, marginal vascularisation of the cornea and pupil contracted. In addition, animal 1 had small retractions in the eyelids and pannus, animal 2 had small retractions in the eyelids and animal 3 had loss of hair at margins of eyelids and pannus.

CONCLUSION

The notified polymer is severely irritating to the eye.

TEST FACILITY

BASF (1989b)

## 8. ENVIRONMENT

### 8.1. Environmental fate

#### 8.1.1.a Inherent biodegradability

TEST SUBSTANCE	Notified polymer
METHOD	BASF method (based on Zahn-Wellens-Test OECD 302 B)
Inoculum	Activated sludge from BASF wastewater treatment plant
Exposure Period	48 h
Auxiliary Solvent	
Analytical Monitoring	
Remarks - Method	Measurement of the removal of Dissolved Organic Carbon (DOC) and bismute active substance (BiAS).  Test concentration: 180 mg/L (equivalent to 54 mg/L DOC) and 18.3 mg/L BiAS.
RESULTS	
Remarks - Results	DOC Elimination degree after 48 h: 82% BiAS elimination degree after 24 h: 98%  Based on a 2-page English summary of the original German report.
CONCLUSION	The report author claims that “the test substance may be well eliminated from water”.
TEST FACILITY	BASF Aktiengesellschaft (1989d)

#### 8.1.1.b Simulation Test

TEST SUBSTANCE	Notified polymer
METHOD	EEC-Directive 88/302/EWG OECD Test Guideline 303 A
Inoculum	Activated sludge from the municipal wastewater treatment plant of Lamsheim from 18/5/92.
Exposure Period	65 d
Auxiliary Solvent	Nil
Analytical Monitoring	
Remarks - Method	Test concentration: 36 mg/L (equivalent to 20 mg/L DOC)
RESULTS	
Remarks - Results	Mean value of DOC-elimination degree after 34 days: 71% Standard deviation of 95% confidence: 3.1 95% Confidence interval: 68-74% Based on a 10-page English summary of the original report German report. The presented graph shows wide variation over the 65 d test period (98% at Day 13; 32% at Day 31; 84% at Day 58; and 70% at Day 65), but within 60-88% after Day 35.
CONCLUSION	The report author claims that “the test substance is partly eliminated from water”.
TEST FACILITY	BASF Aktiengesellschaft (1992a)

### 8.2. Ecotoxicological investigations

### 8.2.1. Acute toxicity to fish

TEST SUBSTANCE	Notified polymer
METHOD	OECD TG 203 Fish, Acute Toxicity Test –Static System.
Species	<i>Brachydanio rerio</i> HAM. And BUCH. (Zebra Fish)
Exposure Period	96 h
Auxiliary Solvent	Nil
Water Hardness	250 mg CaCO <sub>3</sub> /L
Analytical Monitoring	pH, Oxygen mg/L, Temperature °C,
Remarks – Method	After the appropriate quantities of test material were added to the test water, fish were added within 20 minutes. The test concentrations were determined by Polyelectrolyte titration

#### RESULTS

Concentration mg/L		Number of Fish	Mortality				
Nominal	Actual 1-96 h		1 h	24 h	48 h	72 h	96 h
0	1-1	10	0	0	0	0	0
50	40-10	10	0	0	0	0	0
100	100-10	10	0	0	0	0	0
1000	1200-870	10	0	0	0	0	0
2150	2000-2000	10	10	10	10	10	10
4640	4300-	10	10	10	10	10	10

LC50	>870<2000 mg/L at 96 hours (measured).
NOEC	870 mg/L at 96 hours.
Remarks – Results	No explanation for the significant reduction in concentration of the nominal concentrations of 50 and 100 mg/L were provided.

CONCLUSION	The test substance was determined to be only very slightly harmful to fish.
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TEST FACILITY	BASF Aktiengesellschaft (1984)
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### 8.2.2. Chronic toxicity to aquatic invertebrates

TEST SUBSTANCE	Notified polymer
METHOD	EEC Guideline XI/681/86, Draft 4: “Prolonged toxicity study with <i>Daphnia magna</i> : Effects on reproduction” – 21 day semi-static.
Species	<i>Daphnia magna</i>
Exposure Period	21 days
Auxiliary Solvent	None
Water Hardness	270 mg CaCO <sub>3</sub> /L
Analytical Monitoring	Temperature °C, pH, Oxygen mg/L
Remarks - Method	The test solutions were replaced each Monday, Wednesday and Friday of the test period.
	For the statistical evaluation of the LOECD and NOEC, Duncan’s multiple range test was used.

#### RESULTS

Concentration mg/L		Number of <i>D. magna</i>	Number Immobilised	
Nominal	Actual		14 d	21 d
0		10	0	0
0.048		10	0	0
0.097		10	0	0
0.195		10	0	0

0.39	10	0	0
0.78	10	0	0
1.56	10	0	0
3.13	10	0	0
6.25	10	6	6
12.5	10	10	10
25	10	10	10

LC0 3.13 mg/L (nominal) at 21 days  
 NOEC 3.13 mg/L (nominal) at 21 days  
 LOEC 6.25 mg/L (nominal) at 21 days  
 Remarks - Results Concentration control analysis of samples taken at the start of the study prove that the concentrations of the test substance were  $\geq 80\%$  of the nominal concentrations. The same counts were observed for the 48/72 h samples not stocked with daphnids, but were wider (61-241%) for test solutions containing algae and daphnids. Therefore, the results of the study were related to nominal concentrations.

The validity criteria for the control were fulfilled by the test.

In the control the first young were observed at day 7. In the highest concentration tested, at which the daphnids produced young (6.25 mg/L), the first young were observed at day 8.

CONCLUSION The test substance was found to be very slightly toxic to daphnids.

TEST FACILITY BASF Aktiengesellschaft (1992b)

### 8.2.3. Algal growth inhibition test

TEST SUBSTANCE Notified polymer

METHOD EEC Guideline 79/831/EEC, Annexe V, part C: Methods for the determination of ecotoxicity, algae : Test of growth inhibition, May 1988, and on the general test conditions listed in the SOP.

Species *Scenedesmus subspicatus*

Exposure Period 72 hours

Concentration Range Nominal: 0, 0.78, 1.56, 3.13, 6.25, 12.5, 25, 50 & 100 mg/L

Auxiliary Solvent Nil

Analytical Monitoring pH

Remarks - Method Biomass was automatically determined by cell counting in all inoculated replicates using a Coulter Electronic Counter.

### RESULTS

<i>Biomass</i>		<i>Growth</i>
<i>EbL50</i>	<i>NOEC</i>	<i>ErL50</i>
mg/L at 72 h	mg/L	mg/L at 72 h
>100	6.25	>100

Remarks - Results The EC values were read off the concentration-response relationship (regressing curve) determined in semilogarithmic probit paper. The NOEC was determined by comparing the means of the fluorescence measurement of the various concentration levels with the control. The Duncan multiple range test was carried out at a 95% significance level.

The validity criteria were maintained, and the factor of cell division after 72 hours was 47.7.

CONCLUSION The test substance was found to be very slightly toxic to algae.

TEST FACILITY                      BASF Aktiengesellschaft (1992c)

#### 8.2.4.    Inhibition of microbial activity

TEST SUBSTANCE                      Notified polymer

METHOD                              DIN 38412 part 8.

    Inoculum                              *Pseudomonas putida* (DSM 50026)

    Exposure Period                      17 hours

    Concentration Range                      Nominal:     0, 9.77, 19.53, 39.06, 78.13, 156.25, 312.5, 625, 1250, 2500, 5000 & 10000 mg/L

    Remarks – Method                      The test system chosen is designed for dissolvable, uncoloured or low coloured samples. Solid agar stem culture media were inoculated weekly and maintained at 25°C. Preculturing occurred in 100 mL conical flasks with chicane at 25°C for 7±1 h. Test vessels were 10 mL Reagent tubes with flat bottoms.

#### RESULTS

    17 h IC50                              >10000 mg/L

    Remarks – Results                      Based upon a 4-page English summary of the original German report.

CONCLUSION                              The test substance was found not to be harmful to bacteria up to a concentration of 10000 mg/L

TEST FACILITY                      BASF Aktiengesellschaft (1998)

## 9. RISK ASSESSMENT

### 9.1. Environment

#### 9.1.1. Environment – exposure assessment

It is expected that <2% of the notified polymer will be disposed of to landfill. In landfill, it is expected that the notified polymer will associate with soil and sediment, due to the negative charge of the carboxyl groups. Over time, the notified polymer is expected to degrade by abiotic and biotic pathways to form simple organic compounds.

During its use as a developer, it appears little is reacted or sorbed to the plate. The majority (>98%) of the total annual import volume of notified polymer from spent processing bath is expected to be released to waste water treatment plants prior to entering the sewer as trade waste or being disposed of to secure landfill after extraction during treatment.

The notifier claims that the notified polymer will be removed with solid waste in sewerage treatment plants. There is also some evidence to support the claim that the notified polymer is eliminated or biodegraded, and thus a portion of the notified polymer that passes through the treatment plants is expected to be removed.

Since the majority ( up to 98%) of the total annual import volume of notified polymer will be released to waste water treatment plants from various sites from several small towns and cities, under a worst case scenario, with no removal of the notified polymer in the sewage treatment plant, the resultant Predicted Environmental Concentration (PEC) in sewage effluent on a nationwide basis, Predicted No-Effect Concentration (PNEC) and Risk Assessment (Q) are estimated as follows: An assessment factor of 100 has been used, despite the absence of an acute invertebrate test, as a chronic invertebrate test has been submitted. Further, environmental release are assumed to occur every 8 weeks (45.5 days).

Predicted Environmental Concentration (PEC)		
Annual quantity of chemical released to sewer	1,000	kg/year
Days per year where release occurs	45.5	days/year
Daily chemical release:	21.98	kg/day
Water use	200.0	L/person/day
Population of Australia (Millions)	20.496	million
Daily effluent production:	4,099	ML
Dilution Factor – River	1.0	
Dilution Factor – Ocean	10.0	
PEC - River:	5.36	µg/L
PEC - Ocean:	0.54	µg/L

#### 9.1.2. Environment – effects assessment

Predicted No-Effect Concentration (PNEC)		
Lowest NOEC (Daphnia)	3.13	mg/L
Assessment Factor	100.00	
PNEC:	31.30	µg/L

#### 9.1.3. Environment – risk characterisation

Risk Assessment	PEC µg/L	PNEC µg/L	Q
Q - River:	5.36	31.3	0.171
Q - Ocean:	0.54	31.3	0.017

As the PEC/PNEC ratio is less than 1 for both river and ocean, there should be an acceptable risk to aquatic organisms.

## **9.2. Human health**

### **9.2.1. Occupational health and safety – exposure assessment**

Exposure to the notified polymer is expected to be low due to expected limited contact and the low concentration (<5%) of the notified polymer in the imported product.

### **9.2.2. Public health – exposure assessment**

The developer solution is sold to professional customers only. Therefore, no exposure to the general public is expected.

### **9.2.3. Human health – effects assessment**

Based on available test results on a 45% solution of the notified polymer, it has a low acute oral toxicity and is a slight skin irritant and severe eye irritant. Toxicological data for other endpoints were not submitted.

There are no impurities or residual monomers present in the notified polymer above the cut off level for hazardous classification according to the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC 2004).

Based on the available data, the notified polymer is classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances* (NOHSC 2004). The following risk phases for the notified polymer are recommended:

Xi: Irritant

R41: Risk of serious damage to eyes

### **9.2.4. Occupational health and safety – risk characterisation**

Based on available data the notified polymer is a severe eye irritant.

It is imported and used at < 5% of a developer solution. Printing workers may have dermal/ocular exposure to the solution, however personal protective equipment is routinely worn to avoid exposure.

Based on the low concentration of the notified polymer to which workers are exposed, and the controls in place, the risk to worker is considered low.

### **9.2.5. Public health – risk characterisation**

No exposure to the general public is expected and therefore the risk to public health from the proposed use is expected to be negligible.

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

### **10.1. Hazard classification**

Based on the available data the notified polymer is classified as hazardous under the NOHSC *Approved Criteria for Classifying Hazardous Substances*. The classification and labelling details are:

Xi: Irritant

R41: Risk of serious damage to eyes

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S39: Wear eye/face protection

and

As a comparison only, the classification of notified polymer using the Globally Harmonised



System for the Classification and Labelling of Chemicals (GHS) (United Nations 2003) is presented below. This system is not mandated in Australia and carries no legal status but is presented for information purposes.

	<i>Hazard category</i>	<i>Hazard statement</i>
Serious eye damage/eye irritation	1*	Cause serious eye damage

\*A normal observation period is 21 days

## 10.2. Environmental risk assessment

On the basis of the PEC/PNEC ratio, the notified polymer 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 in the proposed manner.

## 11. MATERIAL SAFETY DATA SHEET

### 11.1. Material Safety Data Sheet

The MSDS of the notified polymer and a product containing the notified polymer provided by the notifier were in accordance with the NOHSC *National Code of Practice for the Preparation of Material Safety Data Sheets* (NOHSC 2003). They are 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 developer 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 1994). The accuracy of the information on the label remains the responsibility of the applicant.

## 12. RECOMMENDATIONS

### REGULATORY CONTROLS

#### Hazard Classification and Labelling

- The Office of the ASCC, Department of Employment and Workplace Relations (DEWR), should consider the following health hazard classification for the notified polymer:
  - Xi: Irritant
  - R41: Risk of serious damage to eyes
- The following risk phrases for the notified polymer are recommended:
  - S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
  - S39: Wear eye/face protection

### CONTROL MEASURES

#### Occupational Health and Safety

- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer as introduced in the developer solution:

- Avoid eye exposure
- Wash eye promptly if exposed
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer as introduced in the developer solution:
  - Suitable industrial clothing
  - Safety glasses with side-shields
  - Protective gloves

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.
- 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

- If a spill occurs in the workplace, the spill is contained with sand or earth. Entry of the product into drains or storm water channels is prevented. The contained spill can be pumped out and collected for appropriate disposal. Residual amounts, absorbed with sand or soil, can be disposed to approved landfill. Clean up personnel are to wear appropriate protective equipment to minimise skin and eye exposure.

### 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(1) of the Act; if
  - the importation volume exceeds one tonne per annum notified chemical;
 or
- (2) 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.

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