Australian Government
Department of Health and Aged Care
Australian Industrial Chemicals Introduction Scheme

D-Glucopyranose, oligomeric, citrates, C_{10-16}-alkyl glycosides, sodium salts

Assessment statement (CA09777)

9 April 2025

Table of contents

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AICIS assessment (CA09777)

Chemical in this assessment

Name	CAS registry number
D-Glucopyranose, oligomeric, citrates, C_{10-16}-alkyl glycosides, sodium salts	1693733-02-6

Reason for the assessment

An application for an assessment certificate under section 31 of the *Industrial Chemicals Act 2019* (the Act).

Certificate Application type

AICIS received the application in an Environment Focus type.

Defined scope of assessment

The chemical has been assessed as:

- a soil conditioning agent
- imported into Australia at up to 15 tonnes/year
- imported in a formulation at up to 21.2% concentration for reformulation into a soil conditioning product at up to 1.1% concentration for use by professional workers
- imported within an end-use soil conditioning product at up to 1.1% concentration for use by professional workers
- having a maximum end-use application dose to soil of 48.8 g/hectare.

Summary of assessment

Summary of introduction, use and end use

The assessed chemical will not be manufactured in Australia. It will be imported in a formulation, in 1,000 L intermediate bulk containers at up to 21.2% concentration. The imported formulation will be reformulated for use as an industrial soil conditioning product containing the assessed chemical at up to 1.1% concentration. The assessed chemical will also be imported as a component of an end-use soil conditioning product at up to 1.1% concentration.

There will be no consumer use of the formulation or end use product containing the assessed chemical.

Prior to application of the end use product to soil, the product containing the assessed chemical (at up to 1.1% concentration) will be diluted by professional end use workers (farmers) to a final concentration of up to 0.01%. The diluted product will be applied by professional workers (farmers) via spray boom or drip irrigation.

Human health

Summary of health hazards

The submitted toxicological data on the introduced product containing the assessed chemical (see **Supporting information**) indicate that the assessed chemical as introduced (at 15 – 21% concentration) is:

- of low acute oral toxicity (LD50 > 5,000 mg/kg bw in rats)
- not irritating to the skin
- slightly irritating to the eye
- not a skin sensitiser
- not genotoxic

The submitted toxicological data on a separate product containing an analogue chemical (see **Supporting information**) indicate that the assessed chemical at up to 26.5% concentration:

- is of low acute dermal toxicity (LD50 > 4,000 mg/kg bw in rats)
- is not expected to cause systemic effects from repeated oral exposure (No Observed Adverse Effects Level (NOAEL) being 1,000 mg/kg bw/day in a 28-day combined repeated dose toxicity and reproductive/developmental screening study in rats)
- not mutagenic in an *in vitro* mammalian cell gene mutation assay

Hazard classifications relevant for worker health and safety

Based on the data provided by the applicant on products containing the assessed chemical or analogues, the assessed chemical as introduced (up to 15 – 21% concentration) does not satisfy the criteria for classification according to the *Globally Harmonized System of Classification and Labelling of Chemicals* (GHS) (UNECE 2017) for hazard classes relevant for worker health and safety as adopted for industrial chemicals in Australia.

Summary of health risk

Public

The imported formulation or end-use industrial soil conditioning product containing the assessed chemical will not be available for use by the public. When introduced and used in the proposed manner, it is unlikely that the public will be exposed to the assessed chemical.

This assessment does not identify any risks to public health that require specific risk management measures.

Workers

Workers may experience dermal, inhalation and ocular exposure to the assessed chemical at up to 21.2% concentration during initial reformulation of the liquid formulation containing the assessed chemical.

Professional end-use workers may experience dermal, inhalation and ocular exposure to the assessed chemical at up to 1.1% concentration when diluting the reformulated end-use industrial soil conditioning product immediately prior to end-use. These workers may also experience dermal and inhalation exposure to the assessed chemical at up to 0.01%

concentration during end-use application of the soil conditioning product containing the assessed chemical.

The introduced product containing the assessed chemical is a slight eye irritant. To mitigate the risks to workers during formulation of end use products, control measures would be required to minimise ocular exposure to the assessed chemical (see **Means for managing risk** section). Due to the low concentrations of the assessed chemical during product dilution prior to end use and during end use, minimal exposure is expected to workers conducting these processes.

Environment

Summary of environmental hazard characteristics

According to the *Australian Environmental Criteria for Persistent, Bioaccumulative and/or Toxic Chemicals* (DCCEEW, 2022) and based on the available data the assessed chemical is:

- Not persistent (Not P)
- Not bioaccumulative (Not B)
- Not Toxic (Not T)

Environmental hazard classification

The assessed chemical satisfies the criteria for classification according to the *Globally Harmonized System of Classification and Labelling of Chemicals* (GHS) (UNECE, 2017) as Acute Category 2 (H401) based on the toxicity data for algae of the assessed chemical. Considerations were also made for the rapid degradation of the assessed chemical.

Environmental Hazard	Hazard Category	Hazard Statement
Hazardous to the aquatic environment (acute / short-term)	Aquatic Acute 2	H401: Toxic to aquatic life

Summary of environmental risk

The assessed chemical will be imported into Australia as a component of an aqueous product which is used as a soil conditioning agent. The product containing the assessed chemical will be used at farms across Australia. The product containing the assessed chemical will be applied to topsoil and is expected to mainly remain in soil. It may reach aquatic environments from run-off.

The assessed chemical is readily biodegradable and is not persistent. The assessed chemical is categorised as not bioaccumulative and is not toxic to aquatic organisms.

The assessed chemical is not PBT and is hence unlikely to have unpredictable long-term effects. Its risk may be estimated by the risk quotient method (RQ = PEC ÷ PNEC). Based on calculated RQ values < 1 for the river and ocean compartments, and no expected harmful effects to terrestrial organisms, the environmental risk from the introduction of the assessed chemical can be managed.

Means for managing risk

Workers

Information relating to safe introduction and use

The information in this statement should be used by a person conducting a business or undertaking at a workplace (such as an employer) to determine the appropriate controls under the relevant jurisdiction Work Health and Safety laws.

The following control measures could be implemented to manage the risk arising from exposure to the assessed chemical during formulation of end use products:

- Use of safe work practices to
  - Avoid contact with eyes

Conclusions

The Executive Director is satisfied that the risks to human health or the environment associated with the introduction and use of the industrial chemical can be managed.

Note:

1. Obligations to report additional information about hazards under s 100 of the *Industrial Chemicals Act 2019* apply.
2. You should be aware of your obligations under environmental, workplace health and safety and poisons legislation as adopted by the relevant state or territory.

Supporting information

Chemical identity

Chemical name	D-Glucopyranose, oligomeric, citrates, C_{10-16}-alkyl glycosides, sodium salts
CAS No.	1693733-02-6
Molecular formula	Unspecified

Additional chemical identity information

The assessed chemical is present at a concentration of up to 21.2% w/w in an aqueous solution.

Relevant physical and chemical properties

The test substance for the associated physical/chemical studies is the introduced product containing the assessed chemical at 15.9 - 21.2% in aqueous solution, unless otherwise specified.

Physical form	Clear liquid	
Melting point	7.27	°C
Boiling point *	100	°C
Relative Density	1.07	20°C
Vapour pressure **	3.4	kPa at 20 °C
Water solubility	> 1,000	mg/L
Surface Tension	0.0263	N/m
Viscosity (dynamic)	1,680	cP
Flash Point	> 150	°C
Ionisable in the environment	Yes	
pK_a	The carboxylic sodium moieties of the assessed chemical will be completely dissociated in environmental pH range of 4-9, while the glucose units and the long-chain aliphatic alcohols of the assessed chemical will not be dissociated in environmental pH range of 4-9.	
log K_{ow} **	< -2.8	at 20 °C

* Initial boiling point

** Read-across test substance (Analogue 1): D-Glucopyranose, oligomeric, 6-(hydrogen 2-sulfobutanedioate), coco alkyl glycosides, sodium salts (CAS No. 151911-53-4). Tested at 23.9% concentration in aqueous solution.

Health hazard information

Toxicological data for human health hazard endpoints were provided for the introduced product containing the assessed chemical at 15.9 - 21.2% or 14.8 – 17% concentration in aqueous solution, and for a separate product containing an analogue chemical (Analogue 2) at 26.5% concentration in aqueous solution.

Analogue 2 was used as a read-across substance for the assessed chemical:

D-Glucopyranose, oligomeric, maleates, C_{9-11}-branched and linear alkyl glycosides, sulfonated, sodium salts (CAS No. 1228577-41-0)

Acute toxicity

Oral

In an acute oral toxicity study conducted on the introduced product containing the assessed chemical at 15.9 - 21.2% concentration, the test substance was administered to male and female Wistar rats (n = 5/sex) at a single dose of 5,000 mg/kg bw via oral gavage. No OECD TG was referenced in the study report, but the study appears in accordance with OECD TG 420 (1992). All animals survived the 14-day observation period. Slight piloerection was observed in 2/5 male rats (from Day 1 till the end of observation period) and in 1/5 female rats (from Day 1 to Day 5 of observation period). All animals showed expected body weight gains. At necropsy, slight mucosal enteritis was observed in the two male rats that displayed slight piloerection throughout the observation period. No gross pathologies were reported during necropsy of the female rats. The acute oral median lethal dose (LD50) of the test substance (containing the assessed chemical at 15.9 - 21.2% concentration) was determined to be > 5,000 mg/kg bw.

Dermal

In an acute dermal toxicity study (OECD TG 402, 1987) conducted on a product containing Analogue 2 at 26.5% concentration, the test substance was dermally administered to male and female Wistar rats (n = 5/sex) at a single dose of 4,000 mg/kg bw. All animals survived the 14-day observation period. Desquamation was observed in 1/5 female rats, eschar was observed in all male rats and in 4/5 female rats, and scratches were observed in 3/5 male rats. All signs of irritation were reversible within the observation period, and no other signs of toxicity were observed. All animals showed expected body weight gains. No gross pathologies were reported during necropsy. The acute dermal median lethal dose (LD50) of the test substance (containing Analogue 2 at 26.5% concentration) was determined to be > 4,000 mg/kg bw.

Corrosion/Irritation

Skin irritation

A skin irritation study was conducted on the introduced product containing the assessed chemical at 15.9 - 21.2% concentration. No OECD TG was referenced in the study report, but the study appears in accordance with OECD TG 404 (1992). The test was conducted in three male New Zealand white rabbits. After 4 hours exposure to the test substance, the patches were removed. Sites were evaluated for irritation immediately after patch removal and 24 hours, 48 hours, 74 hours, 5 days and 7 days after patch removal. No signs of irritation were observed. Based on the results, the test substance (containing the assessed chemical at 15.9 - 21.2% concentration) is not irritating to the skin.

Eye irritation

An eye irritation study was conducted on the introduced product containing the assessed chemical at 15.9 - 21.2% concentration. No OECD TG was referenced in the study report, but the study appears in accordance with OECD TG 405 (1987). The test was conducted in 3 male New Zealand white rabbits. Ocular irritation was evaluated after exposure at 1, 24, 48 and 72 hours, and 7 days. Conjunctival redness and corneal opacity were observed in all rabbits 1 hour after treatment. Conjunctival redness persisted in 1/3 rabbits 24 hours after treatment. Another rabbit displayed conjunctival redness at 48 hours after treatment despite this effect not being observed at 24 hours after treatment. Corneal opacity persisted in 1/3 rabbits 24 hours after treatment. All observed effects had completely reversed by 72 hours after treatment. The mean individual conjunctivae redness scores from gradings at 24, 48 and 72 hours after treatment were 0.00, 0.33, 0.33, respectively. The mean individual corneal opacity scores from gradings at 24, 48 and 72 hours after treatment were 0.00, 0.33, 0.00, respectively. No chemosis or effects on the iris were observed. Based on the results, the test substance (containing the assessed chemical at 15.9 - 21.2% concentration) is considered to be slightly irritating to the eyes. Data on the neat chemical is not provided to consider classification using the GHS criteria.

Sensitisation

Skin sensitisation

A skin sensitisation study was conducted on the product to be introduced containing the assessed chemical at 15.9 - 21.2% concentration. No OECD TG was referenced in the study report, but the study appears in accordance with OECD TG 406 (1992) – Guinea Pig Maximisation Test (GPMT). In the study, Hartley albino guinea pigs (15 females: 10 treated, 5 negative control (deionised water)) were subject to an induction phase consisting of (i) intradermal injection (0.1 mL) of the test substance or negative control at day 0 (ii) topical application of sodium lauryl sulphate (0.5 mL, 10% concentration) at day 6 and (iii) occluded topical application of test substance or negative control at day 7 for 48 hours. On day 21 all guinea pigs were challenged by occluded topical application of the test substance (0.5 mL) on one side and negative control on the other side simultaneously. No dermal reaction was observed in either test or control animals at 48 and 72 hours after challenge application of the test substance. Based on these results, the test substance (containing the assessed chemical at 15.9 - 21.2% concentration) is not a skin sensitiser.

Repeat dose toxicity

Oral

In a combined repeat dose and reproductive/developmental screening oral toxicity study (OECD TG 422), a product containing Analogue 2 at 26.5% concentration was administered to Wistar rats (n = 10/sex/dose) via oral gavage for a maximum of 54 days at 0, 40 (low dose = LD), 200 (medium dose = MD), and 1,000 mg/kg bw/day (high dose = HD). No clinical signs of toxicity, difference in food consumption, or changes in haematology/coagulation parameters, organ weights, and gross and microscopic examination of the tissues were observed throughout the treatment period at all tested concentrations of the test substance. Increased mean body weight gains were reported in males in the HD group (increase of 36.6% compared to control animals of the same sex), resulting in an overall increase in body weight for the HD group overall. However, as no signs of toxicity were noted in the HD group, the increase is not considered to be adverse. Mortality in two females - one in LD group and one in MD group - was reported on post-natal day 0 and mating day 1, respectively. However, based on the histopathological analysis, the mortality was not considered to be treatment related. All other animals survived to the scheduled necropsy.

No treatment-related or adverse changes in mean body weight gain, macroscopic findings, mean foetal body weight, total number of pups born, pup sex ratio, live pups on PND 0 and PND 4, fertility index and viability index, pup survival or pup external findings were found.

Under the conditions of this study the NOAEL for systemic, reproductive and developmental toxicity was established for the test substance as 1,000 mg/kg bw/day.

Genotoxicity

A study was performed to evaluate the potential of the introduced product containing the assessed chemical at 15.9 - 21.2% concentration to cause point mutations in a bacterial reverse mutation assay using *Salmonella typhimurium* strains TA98, TA100, TA1535 and TA1537 and TA102. (OECD TG 471). Two independent experiments were performed. The first experiment was performed using the plate incorporation assay with and without metabolic activation (S9-mix), while the second experiment was performed using the plate incorporation assay without metabolic activation and the pre incubation method with metabolic activation. No significant increases in the frequency of revertant colonies were recorded for any of the bacterial strains, with any tested dose, either with or without metabolic activation. Under the conditions of this study, the test substance (containing the assessed chemical at 15.9 - 21.2% concentration) is not considered to cause point mutations.

A product containing Analogue 2 at 26.5% concentration was tested for its potential to induce mutations at the thymidine kinase locus in mouse lymphoma L5178Y cells (OECD TG 476). A correction factor of 2 was used for test doses to account for the water content, hence Analogue 2 was evaluated at 53% concentration. Mutant frequencies obtained during this study were compared with the Global Evaluation Factor (GEF); this is the mean of the negative/vehicle mutant frequency of the mouse lymphoma assay (obtained from ten laboratories), plus one standard deviation.

In the first main experiment, cells were treated with the test substance with and without metabolic activation, for 4 hours. There was no biologically relevant increase in mutation frequency after treatment without metabolic activation. With metabolic activation, increased mutation frequencies were detected which was reported by the study authors as being dose dependent and statistically significant. However, the biological significance of this result was

unclear due to the limited magnitude of the effect. In addition, the GEF was not exceeded at any dose, with or without metabolic activation. Therefore, a second experiment was conducted to confirm the finding.

In the second experiment, cells were treated with the test substance with metabolic activation for 4 hours and without metabolic activation for 24 hours. The outcome of the second experiment did not confirm the mutagenic effect of the test substance in the presence of metabolic activation as was seen in the first experiment. Furthermore, the GEF was not exceeded at any dose with or without metabolic activation. In addition, colony sizing showed no clastogenic effects were induced by the test substance, with or without metabolic activation, in both experiments.

Analogue 2 at 53% concentration was therefore considered to be non-mutagenic under the conditions of the study.

The introduced product containing the assessed chemical at 14.8 – 17% concentration was also found to be non clastogenic in an *in vitro* Mammalian Chromosomal Aberration test using Chinese hamster V79 lung cells, with or without metabolic activation (S9) (OECD TG 473). No statistically significant increases in the frequency of cells with aberrations were observed after the 4-hour exposure period at any evaluated concentration with or without metabolic activation. Furthermore, no statistically significant increases in the frequency of cells with aberrations were observed after 20 hours exposure period at any evaluated concentration, without metabolic activation.

Based on the data provided by the applicant, the assessed chemical as introduced is not genotoxic.

Environmental exposure

The assessed chemical will be imported into Australia as a component of aqueous products, either fully formulated or as a concentrate for reformulation which is used for soil conditioning. Significant release of the product containing the assessed chemical to the environment is not expected during transport and storage. The products containing the assessed chemical will be used as a soil conditioning agent at farms across Australia. Depending on different factors, the soil may typically be treated once every two months.

Reformulation of the concentrate product will involve pumping the product from Intermediate Bulk Container into an enclosed blending vessel. Once completed, the reformulated product will be transferred via enclosed line to a filling machine and filled into smaller containers for distribution to end-users. The reformulated product containing the assessed chemical will be further diluted before applying to soil. The diluted solution will be applied to soil using spray booms or by drip irrigation. Release of the product containing the assessed chemical to the environment due to accidental spills is expected to be absorbed on suitable materials, and disposed of in accordance with relevant Local, State, Territory and Federal regulations. Any unused product containing the assessed chemical is expected to be disposed of in accordance with relevant Local, State, Territory and Federal regulations.

The product containing the assessed chemical will be applied directly to topsoil and expected to be mainly remain in the applied soil. It may reach aquatic environments from run-off. However, efficient and economic use of the product, in addition to good farming practices, are expected to minimise loss of the assessed chemical to the aquatic environment.

Environmental fate

Partitioning

Based on very low log K_{ow} of < -2.8, the assessed chemical is expected to have very high mobility in soil and sediment compartments.

The assessed chemical is readily soluble in water (water solubility > 1,000 mg/L). If the assessed chemical is released to surface water, the assessed chemical is expected to mainly remain in water compartment based on its ready solubility in water and very low log K_{ow}.

Degradation

Based on measured degradation in water, the assessed chemical is considered not persistent.

In a supplied OECD 301B ready biodegradation screening test conducted in water, the assessed chemical showed 79% degradation after 28 days, and the 10-day-window criterion was satisfied. Therefore, the assessed chemical is readily biodegradable.

The assessed chemical is also biodegradable in seawater as it achieved 62% degradation after 29 days in a provided OECD 306 biodegradation in seawater test.

Bioaccumulation

Based on measured log K_{ow} of an acceptable read across chemical (Analogue 1), the assessed chemical is considered not bioaccumulative.

No bioaccumulation information was provided for the assessed chemical. The measured log K_{ow} of Analogue 1 is < -2.8 which is below the domestic bioaccumulation threshold of log K_{ow} = 4.2 (EPHC, 2009). Therefore, the assessed chemical is considered not bioaccumulative.

Predicted environmental concentration (PEC)

The Predicted Environmental Concentration (PEC) of the assessed chemical in soil and water compartments are estimated below.

In soil compartment

According to the applicant, the maximum application dose for the assessed chemical is 48.8 g/hectare.

In water compartment

The assessed chemical may reach aquatic environments from run-off. The worst-case edge-of-field scenario may be considered assuming a 100 mm rainfall event with 20% of that water running off, resulting in 200 m^3 run-off water per hectare. The run-off water is assumed to carry 5% of the assessed chemical. This does not consider the uptake by plants, and degradation of the assessed chemical. The PEC_{runoff} from a run-off event right after an application is 12.2 µg/L {[48.8g/ha × 0.05] ÷ 200 m^3}.

Environmental effects

Effects on aquatic Life

Acute toxicity

The following measured median lethal concentration (LC50), median effective concentration (EC50) and median inhibition concentration (IC50) values for model organisms were supplied for the products containing the assessed chemical and two read across chemicals (Analogue 1 and Analogue 2). As these products also contain other components, the toxicity values have been adjusted for the concentration of the assessed chemical or analogue chemicals in the products. The toxicity values therefore represent a worst case with the assumption that there is no contribution to toxicity from the other components present in the products.

Taxon	Endpoint	Method
Fish	Analogue 1: 96 h LC50 = 7.95 mg/L	*Oncorhynchus mykiss* (Rainbow trout) Mortality OECD TG 203 Flow-through conditions Measured concentration
Invertebrate	Analogue 1: 48 h EC50 = 24.38 mg/L	*Daphnia magna* (Water flea) Immobility OECD TG 202 Flow-through conditions Measured concentration
Freshwater algae	Analogue 1: 96 h ErC50 = 8.957 mg/L	*Selenastrum capricornutum* (Green algae) Growth rate inhibition OECD TG 201 Static conditions Measured concentration
Marine algae	Assessed chemical: 72 h ErC50 = 2.279 mg/L WAF*	*Skeletonema sp.* (Diatom) Growth rate inhibition OECD TG 201 Static conditions Nominal concentration
Microorganisms	Analogue 2: 3 h IC50 > 530 mg/L	*Activated sludge from a STP* OECD TG 209 Respiration inhibition Static conditions Nominal concentration

*WAF: Water Accommodated Fraction

Chronic toxicity

The following measured no effect concentration (NOEC) and 10th percentile effective concentration (EC10) values for model organisms were supplied for the assessed chemical and Analogue 1.

Taxon	Endpoint	Method
Freshwater algae	Analogue 1: 96h NOEC = 1.563 mg/L	*Selenastrum capricornutum* (Green algae) Growth rate inhibition OECD TG 201 Static conditions Measured concentration
Marine algae	Assessed chemical: 72h ErC10 = 1.272 mg/L WAF	*Skeletonema sp.* (Diatom) Growth rate inhibition OECD TG 201 Static conditions Nominal concentration

Effects on terrestrial Life

The following measured no-observed-effect concentration (NOEC) value was supplied for a read across chemical (Analogue 3):

Analogue 3: D-Glucopyranose, oligomeric, $C_{10\text{-}16}$-alkyl glycosides (CAS No. 110615-47-9)

Taxon	Endpoint	Method
Earthworms	14 d NOEC = 654 mg/kg soil*	*Eisenia sp.* (Earthworm) Mortality OECD TG 207 Laboratory/artificial soil conditions Nominal concentration
Plants	14 d NOEC = 654 mg/kg soil*	Seed from *Avena sativa* (Oat), *Brassica rapa* (Turnip) and *Lycopersicon esculentum* (Tomato) Growth OECD TG 208 Laboratory/artificial soil conditions Nominal concentration

* No effects observed at the highest test concentration

Predicted no-effect concentration (PNEC)

A predicted no-effect concentration (PNEC) of 22.79 µg/L was calculated for the assessed chemical in the aquatic environment. This value was derived using the most sensitive acute endpoint value, which is for algae (72 h ErC50 = 2.279 mg/L). An assessment factor of 100 was applied to this endpoint as acute toxicity data are available for three tropic levels and chronic toxicity data are available for one trophic level (EPHC, 2009). The acute endpoint was selected, over the algal chronic endpoint, in the absence of additional chronic endpoints to support the algal growth rate ErC10 and NOEC (ECHA 2008).

The assessed chemical is considered not practically toxic to earthworms and plants based on the terrestrial toxicity data for Analogue 3, therefore, a PNEC for the terrestrial compartment was not calculated.

Categorisation of environmental hazard

The categorisation of the environmental hazards of the assessed chemical according to the *Australian Environmental Criteria for Persistent, Bioaccumulative and/or Toxic Chemicals* (DCCEEW, 2022) is presented below.

Persistence

Not Persistent (Not P). Based on measured degradation data in water, the assessed chemical is categorised as Not Persistent.

Bioaccumulation

Not Bioaccumulative (Not B). Based on low measured log K_{ow} of an acceptable read across chemical, the assessed chemical is categorised as Not Bioaccumulative.

Toxicity

Not Toxic (Not T). Based on available ecotoxicity values above 1 mg/L, the assessed chemical is categorised as not Toxic.

Environmental risk characterisation

The assessed chemical is not PBT and is hence unlikely to have unpredictable long-term effects (EPHC 2009). An estimate of risk may therefore be determined using the risk quotient method.

Based on the PEC and PNEC values determined above, Risk Quotients (RQ = PEC ÷ PNEC) have been calculated for release of the assessed chemical to water:

Compartment	PEC	PNEC	RQ
River	12.2 µg/L	22.79 µg/L	0.535
Ocean	1.22 µg/L	22.79 µg/L	0.054

For the river and ocean compartments, an RQ less than 1 indicates that introduction of the assessed chemical, in line with the defined scope of assessment, is not expected to pose a significant risk to the environment. The assessed chemical is considered not practically toxic to earthworms and terrestrial plants based on the available terrestrial toxicity data. As such, the risk from the assessed chemical can be managed, based on consideration of the environmental hazard characteristics and estimated releases.

References

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