

**tuhamij**

SDS = Safety Data Sheet

according to Regulation (EC) No (EG) Nummer 1907/2006 as amended from time to time.

Fluorescerende stof / Fluorescent substance

versie 8.0

Date of issue: 20-02-2020

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Visible spray pattern in professional horticulture.

1.3. Details of the supplier of the safety data sheet

Tuhamij BV
Woutersweg 10
P.O. Box 2
2691 PR 's Gravenzande - Nederland
T +31 (0) 174 446 100
SDS@brinkman.nl

1.4. Emergency telephone number

International emergency number: Telephone: +49 180 2273-112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Dam./Irrit. 2
H319

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:



Signal Word:

Warning

Hazard Statement: H319 Causes serious eye irritation.

Precautionary Statements (Prevention): Wear eye/face protection.

P280

P264

Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response): IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P305 + P351 + P338

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P337 + P311

If eye irritation persists: Call a POISON CENTER or doctor/physician.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

Derivative based on: distyryl biphenyl compound, anionic

This product contains (a) substance(s) included on the candidate list according to article 59 (1,10) of regulation EC No. 1907/2006 ('REACH') in a concentration equal or above 0.1% w/w: N,N-dimethylformamide; dimethyl formamide

Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)

Content (W/W): $\geq 75\%$ - $< 100\%$

CAS Number: 27344-41-8

EC-Number: 248-421-0

REACH registration number: 01-2119533064-49

Eye Dam./Irrit. 2
H319

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:

: Keep patient calm, remove to fresh air, seek medical attention.

First-aid measures after skin contact

: Wash skin with soap and plenty of warm water.

First-aid measures after eye contact

: Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

First-aid measures after ingestion

: Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote..

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : dry powder, foam.

Unsuitable extinguishing media : carbon dioxide

5.2. Special hazards arising from the substance or mixture

harmful vapours, carbon oxides, sulfur oxides

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for firefighters

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures see, section 8.

6.2. Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with suitable appliance and dispose of.

For large amounts: Contain with dust binding material and dispose of.

Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:

Avoid dust formation. Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

68-12-2: N,N-dimethylformamide; dimethyl formamide

STEL value 30 mg/m³ ; 10 ppm (WEL/EH 40 (UK))

Skin Designation (WEL/EH 40 (UK))

The substance can be absorbed through the skin.

TWA value 15 mg/m³ ; 5 ppm (WEL/EH 40 (UK))

Skin Designation (OEL (EU))

The substance can be absorbed through the skin.

STEL value 30 mg/m³ ; 10 ppm (OEL (EU))

Indicative

TWA value 15 mg/m³ ; 5 ppm (OEL (EU))

indicative

Components with PNEC

27344-41-8: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivynylene)bis(benzenesulphonate)

freshwater: 0.0625 mg/l

marine water: 0.00625 mg/l

intermittent release: 0.1028 mg/l

STP: 100 mg/l

sediment (freshwater): 198000 mg/kg

sediment (marine water): 19800 mg/kg

soil: 1 mg/kg

Components with DNEL

27344-41-8: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivynylene)bis(benzenesulphonate)

worker: Long-term exposure- systemic effects, dermal: 53 mg/kg

consumer: Long-term exposure- systemic effects, dermal: 19

mg/kg

consumer: Long-term exposure- systemic effects, oral: 1.9 mg/kg

worker: Long-term exposure- systemic effects, Inhalation: 20.5
mg/m³

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Manufacturer's directions for use should be observed because of great diversity of types.

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Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Wearing of closed work clothing is recommended. No eating, drinking, smoking or tobacco use at the place of work. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

For information regarding environmental exposure controls, see Section 6.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	: granules
Colour	: yellow-green
Odour	: characteristic
Odour threshold	: not applicable
pH value:	: 7 - 8.5 (1 g/l)
Melting point:	: 9300 °C (OECD Guideline 102)
Boiling point:	: not applicable
Flash point	: not applicable
Flammability	: not readily ignited
Ignition temperature	: 580 °C (BAM) > 500 °C (VDI 2263, sheet 1, 2.6)
Vapour pressure	: not applicable
Density	: 1.49 g/cm ³ (22 °C) (Directive 92/69/EEC, A.3)
Solubility in water	: 25 g/l (30 °C)
Partitioning coefficient n-octanol/water (log K _{ow})	: -2.32 (OECD Guideline 107)
(25 °C; pH value: 6.8)	
Self ignition	: not self-igniting
Thermal decomposition	: 350 °C
Viscosity, dynamic	: Viscosity, dynamic
Explosion hazard	: not explosive
Fire promoting properties	: not fire-propagating

9.2. Other information

Bulk density: 550 - 670 g/l

pK_A: approx. -3 - -2.5

Hygroscopy: The product has not been tested.

Surface tension: approx. 59.9 mN/m (20 °C; 1.0 g/l)

Grain size distribution: No data available.

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

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SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

The product may contain explosive fine dust or such dust may be produced by abrasion during transport or product transfer.

10.4. Conditions to avoid

Avoid extreme temperatures. Avoid dust formation. Avoid deposition of dust.

10.5. Incompatible materials

Substances to avoid:

strong oxidizing agents, strong bases, strong acids, reactive chemicals

10.6. Hazardous decomposition products

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Assessment of acute toxicity:
Virtually nontoxic after a single ingestion.

Acute toxicity (dermal) : Virtually nontoxic after a single skin contact.

Experimental/calculated data:	
LD50 oral rat	> 2,000 mg/kg (OECD Guideline 401)
LD50 dermal rat	> 2,000 mg/kg (OECD Guideline 402)

Skin corrosion/irritation rabbit : non-irritant (other)
Serious eye damage/irritation rabbit : Irritant. (OECD Guideline 405)
Respiratory or skin sensitisation : Skin sensitizing effects were not observed in animal studies.
Germ cell mutagenicity : No mutagenic effect was found in various tests with bacteria and mammals.
Carcinogenicity : Based on available Data, the classification criteria are not met.
Reproductive toxicity : Based on available Data, the classification criteria are not met.

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Information on: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)

Assessment of reproduction toxicity:

Repeated oral uptake of the substance did not cause damage to the reproductive organs.

Information on: N,N-dimethylformamide; dimethyl formamide

Assessment of reproduction toxicity:

Animal studies gave no indication of a fertility impairing effect at doses which were not toxic to the parental animals.

Developmental toxicity

Assessment of teratogenicity:

Based on the ingredients, there is a suspicion of a teratogenic effect. Based on available Data, the classification criteria are not met.

Information on: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)

Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Information on: N,N-dimethylformamide; dimethyl formamide

Assessment of teratogenicity:

The substance caused malformations/developmental toxicity in laboratory animals. Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Information on: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)

Assessment of repeated dose toxicity:

The substance may cause damage to the liver after repeated ingestion of high doses, as shown in animal studies.

Information on: N,N-dimethylformamide; dimethyl formamide

Assessment of repeated dose toxicity:

The substance may cause damage to the liver after repeated inhalation. The substance may cause damage to the liver after repeated ingestion.

Aspiration hazard

No aspiration hazard expected.

Other relevant toxicity information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: There is a high probability that the product is not acutely harmful to aquatic organisms
Toxicity to fish	: LC50 (96 h) > 10 - < 100 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 84/449/EEC, C.1)
Aquatic invertebrates	: EC50 (24 h) > 1,000 mg/l, Daphnia magna (OECD Guideline 202, part 1)
Aquatic plants	: EC50 (72 h) > 10 - < 100 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201) acute Effect No observed effect concentration (72 h) > 1 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201) long-term effect
Microorganisms/Effect on activated sludge	: EC50 (3 h) > 100 mg/l, activated sludge (OECD Guideline 209)
Chronic toxicity to fish	: No data available.
Chronic toxicity to aquatic invertebrates	: No observed effect concentration (21 d) > 1 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
Assessment of terrestrial toxicity	: No toxic effects have been observed in studies with soil living organisms.

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Soil living organisms : LC50 (14 d) > 5,000 mg/kg, Eisenia foetida (OECD Guideline 207)

12.2. Persistence and degradability

Elimination information: > 70 % (28 d) (OECD Guideline 301 F) Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

Assessment bioaccumulation potential: Does not significantly accumulate in organisms.

12.4. Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will not evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is expected.

Information on: *Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivinylene)bis(benzenesulphonate)*

Assessment transport between environmental compartments:

Volatility: The substance will not evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Other adverse effects

The product does not contain substances that are listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information

Sum parameter

Chemical oxygen demand (COD): 1,507 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: 0 mg/g

Adsorbable organically-bound halogen (AOX): 0 %

Add. remarks environm. fate & pathway:

Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other ecotoxicological advice:

The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Contaminated packaging:

Uncontaminated packaging can be re-used.

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

SECTION 14: Transport information

- Land transport

ADR Not classified as a dangerous good under transport regulations

UN number: Not applicable

UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable

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Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

- Rail transport

RID	Not classified as a dangerous good under transport regulations
UN number	Not applicable
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Packing group	Not applicable
Environmental hazards	Not applicable
Special precautions for user	None known
UN number	: Not applicable

- Inland waterway transport

ADN	: Not classified as a dangerous good under transport regulations
UN number	: Not applicable
UN proper shipping name	: Not applicable
Transport hazard class(es)	: Not applicable
Packing group	: Not applicable
Environmental hazards	: Not applicable
Special precautions for user	: None known

Transport in inland waterway vessel	: Not evaluated
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- Transport by sea

IMDG	: Not classified as a dangerous good under transport regulations
UN number	: Not applicable
UN proper shipping name	: Not applicable
Transport hazard class(es)	: Not applicable
Packing group	: Not applicable
Environmental hazards	: Not applicable
Special precautions for user	: None known

- Air transport

IATA/ICAO	: Not classified as a dangerous good under transport regulations
UN number	: Not applicable
UN proper shipping name	: Not applicable
Transport hazard class(es)	: Not applicable
Packing group	: Not applicable
Environmental hazards	: Not applicable
Special precautions for user	: None known

14.1. UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Packing group

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Transport hazard class(es)

See corresponding entries for "Packing group" for the respective regulations in the tables above.

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14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 30

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

Chemical Safety Assessment performed

SECTION 16: Other information

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use. This includes the mentioned and recommended usage. Any other intended applications should be discussed with the manufacturer. In particular this concerns the application for products that are the object of special standards and regulations.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Eye Dam./Irrit.	Serious eye damage/eye irritation
Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Repr.	Reproductive toxicity
H319	Causes serious eye irritation.
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H360D	May damage the unborn child.

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If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: SDS@brinkman.nl

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

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Titles Exposure scenario

Table of contents:

1. Exposure scenario (ES) 1: Spray pattern professional horticulture.

Heading 1. Title ES 1 Visualisation of spray patterns in professional horticulture

ES 2	: Visibility of spray patterns in professional horticulture.
Usage sector	: SU 1. Agriculture, Forestry and Fisheries.
Process category	: PROC 11 : Non industrial spraying.
PROC 05	: Mixing or blending in batch process.
Environment	: ERC 8b. Widespread indoor use of reactive substances in open systems.

Heading 2. Environment

2.1 Control of exposure to the environment

2.1.1 Product characteristics

See attached safety data sheet.

2.1.2 Technical and organizational conditions and measures

Do not allow polluted water to end up in sewerage/surface water/ground water. Collect small spills with suitable equipment and dispose of them as waste. Absorb large spills with dust-binding material and dispose of as waste. Dispose of the collected material in accordance with applicable regulations.

2.1.3 Conditions and measures related to waste disposal

Packaging that is not contaminated can be reused. Uncleanable packagings and the contents of packagings must be disposed of in accordance with local regulations, e.g. to a suitable landfill or incineration plant.

Heading 2. Employee

3.1 Operational conditions

PROC 11

Physical state	: Liquid.
Dust concentration	: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyl)divinylene) bis(benzene sulphonate) content (W/W): 0.05%.
Liquid (vaporization)	: Neglectible.
Duration of use	: 1 - <4 hours
Frequency of use	: ≤ 2 times a year.
Indoor/outdoor use	: Indoor
Exposed skin surface	: Both palms and forearms (1500 cm ²)

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PROC 5

Physical state	: Solid.
Substance concentration	: Disodium 2,2'-([1,1'-biphenyl]-4,4'-diyldivynylene) bis(benzene sulphonate) content (W/W): $\geq 75\% \leq 100\%$. content (W/W): 0.05%.
Dust/dustiness	: High
Duration of use	: 15 min \leq 1 hour
Frequency of use	: ≤ 2 times a year.
Indoor/outdoor use	: Indoor
Exposed skin surface	: Both palms of the hands (480 cm ²)

3.2 Risk management measures

3.2.1 Technical and organisational measures

- Prevent dust from forming.
- Take measures against discharges of static electricity.
- Ensure that the correct extinguishing agents are available, see section 5.

3.2.2 Measures and conditions for personal protection

- Clean material and workshop after use.
- Use appropriate eye protection.
- Use suitable face protection.
- Use appropriate respiratory protection.
- Use appropriate hand protection.
- When handling this product, observe precautions for handling chemicals. Wearing closed work clothing is recommended.
- For specifications of appropriate protection, see section 8.2.

3.3 Estimated worker exposure

PROC 11

Route of exposure	Estimated exposure (source)	RCR
Inhalational, systemic, long-term	0.21 mg/m ³ (ECETOC TRA Worker 3.0)	0.01
Dermal, systemic, long term	1.07 mg/kg bw/day (ECETOC TRA Worker 3.0)	0.02
Combined routes systemic, long term		0.03
Inhaled, systemic, short term	1.4 mg/m ³ (ECETOC TRA Worker 3.0)	0.07

PROC 05

Route of exposure	Estimated exposure (source)	RCR
Inhalational, systemic, long-term	0.35 mg/m ³ (ECETOC TRA Worker 3.0)	0.02
Dermal, systemic, long-term	0.54 mg/kg bw/day (ECETOC TRA Worker 3.0)	0.01
Combined routes, systemic, long term		0.03
Inhaled, systemic, short term	mg/m ³ (ECETOC TRA Worker 3.0)	0.34