Date SDS established: 24.01.2020
Revision number: 2.0

1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product name: OPR I

Catalogue number: MD71130; MD70130

1.2 Relevant identified uses of the substances or mixture:

In vitro diagnostic use & research use

uses adviced against: In vivo use

1.3 Details of the supplier of the safety data sheet:

magtivio B.V.
Daelderweg 9
6361 HK Nuth (The Netherlands)
Tel: +31-(0)45-208 4810
Fax: +31-(0)45-208 4817
E-mail: info@magtivio.com

1.4 Emergency telephone number

Call your local emergency center.

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP):
Flam. Liq. 2, H225
Acute Tox. Oral 4, H302
Acute Tox. Dermal 4, H312
Acute Tox. Inhalation 4, H332
Eye Irrit. 2, H319

P statements:
P210
P302 + P352
P305 + P351 + P338
P403 + P235

2.2 Label elements

Danger

2.3 Other hazards

None.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature: mixture of organic compounds.

3.1 Substance

Not applicable

3.2 Mixture

Hazardous ingredient	Identification	Classification	Concentration
Acetonitrile	Index: 608-001-00-3 EC nr. 200-835-2 CAS nr. 75-05-8 REACH: 01-2119471307-38-XXXX	Flam. Liq. 2, H225 Acute Tox. Oral 4, H302 Acute Tox. Dermal 4, H312 Acute Tox. Inhalation 4, H332 Eye Irrit. 2, H319	22.5-100%
Formic acid	Index: 607-001-00-0 EC nr. 200-579-1 CAS nr. 64-18-6 REACH: 01-2119491174-37-XXXX	Flam. Liq. 3, H226 Acute Tox. Oral 4, H302 Acute Tox. Inhalation 3, H331 Skin corr. 1A, H314	<1%

4 FIRST AID MEASURES

4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact: take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects, nausea, vomiting, convulsions, shortness of breath, unconsciousness, respiratory arrest, cardiac arrest. May cause headache and dizziness.
The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

5 FIRE FIGHTING MEASURES

5.1 Fire extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2), foam, dry powder.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of: nitrogen oxides, hydrogen cyanide (hydrocyanic acid).

5.3 Advice for firefighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains. Risk of explosion.

6.3 Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment: see section 13.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols. Observe label precautions.

Advice on protection against fire and explosion: Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygienic measures: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: see product label.

7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

8 EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters:

acetonitrile (76-05-8)

Basis	Value	Threshold limits	Remarks
EU ELV	Skin designation:		Can be absorbed through the skin.
	Time Weighted Average (TWA):	40 ppm 70 mg/m^3	
MAC (NL)	Time Weighted Average (TWA):	34 mg/m^3	
NL OEL	Time Weighted Average (TGG):	34 mg/m^3	

Derived No Effect level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	68 mg/m^3
Worker DNEL, acute	Local effects	inhalation	68 mg/m^3
Worker DNEL, longterm	Systemic effects	dermal	32.2 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	68 mg/m^3
Worker DNEL, longterm	Local effects	inhalation	68 mg/m^3

Recommended monitoring procedures: methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

Predicted No Effect Concentration (PNEC):

PNEC Fresh water	10 mg/l
PNEC Marine water	1 mg/l
PNEC Aquatic intermittent release	10 mg/l
PNEC Sewage treatment plant	32 mg/l
PNEC Soil	3.02 mg/kg
PNEC Fresh water sediment	45 mg/kg
PNEC Marine sediment	4.5 mg/kg

formic acid (64-18-6)

Derived No Effect level (DNEL)

Worker DNEL, longterm	Systemic effects	inhalation	9.5 mg/m³
Worker DNEL, longterm	Local effects	inhalation	9.5 mg/m³
Consumer DNEL, acute	Systemic effects	inhalation	9.5 mg/m³
Consumer DNEL, acute	Local effects	inhalation	9.5 mg/m³
Consumer DNEL, longterm	Systemic effects	inhalation	3 mg/m³
Consumer DNEL, longterm	Local effects	inhalation	3 mg/m³

Predicted No Effect Concentration (PNEC):

PNEC Fresh water	2 mg/l
PNEC Marine water	0.2 mg/l
PNEC Sewage treatment plant	7.2 mg/l
PNEC Soil	1.5 mg/kg
PNEC Fresh water sediment	13.4 mg/kg
PNEC Marine sediment	1.34 mg/kg

8.2 Exposure controls

Engineering measures: technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures: protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection: safety glasses

Hand protection:

full contact:	Glove material:	Butyl-rubber
	Glove thickness:	0.7 mm
	Break through time:	>480 min
splash contact:	Glove material:	polychloroprene
	Glove thickness:	0.65 mm
	Break through time:	>30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 720 Camapren® (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment: flame retardant anti-static protective clothing.

Respiratory protection: required when vapors/aerosols are generated.
Recommended Filter type: Filter A (according to DIN 3181) for vapors of organic compounds.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls: do not empty into drains. Risk of explosion.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Small volume (100 ml) liquids.

9.2 Other Information

No data available.

10 STABILITY AND REACTIVITY

10.1 Reactivity

Vapors may form explosive mixture with air.

10.2 Chemical stability

Heat-sensitive. Distillable in an undecomposed state at normal pressure.

10.3 Possibility of hazardous reactions

Violent reactions possible with: strong bases, strong reducing agents.
Risk of explosion with: nitrates, perchlorates, perchloric acid, concentrated sulfuric acid.
Risk of ignition or formation of inflammable gases or vapors with: oxidizing agents, nitric acid, nitrogen dioxide, with, catalyst.
Generates dangerous gases or fumes in contact with: acids.

10.4 Conditions to avoid

Warming.

10.5 Incompatible Materials

Rubber, various plastics.

10.6 Hazardous decomposition products

In the event of fire: see section 5.

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute oral toxicity
Acute toxicity estimate: 623.23 mg/kg
Calculation method
Symptoms: nausea, vomiting
absorption

Acute inhalation toxicity
Acute toxicity estimate: 11.09 mg/L; 4h; vapour
Calculation method
Symptoms: possible damages; mucsal irritations
absorption

Acute dermal toxicity
Acute toxicity estimate: 1111 mg/kg
Calculation method
absorption

Skin irritation
This information is not available.

Eye irritation
Mixture causes serious eye irritation.

Sensitation
This information is not available.

Germ cell mutagenicity
This information is not available.

Carcinogenicity
This information is not available.

Reproductive toxicity
This information is not available.

Teratogenicity
This information is not available.

Specific target organ toxicity - single exposure
This information is not available.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

Components

Acetonitrile

Acute oral toxicity: LD50 Mouse: 617 mg/kg; OECD Test Guideline 401
absorption
Symptoms: nausea, vomiting.

Acute inhalation toxicity: LC50 Mouse: 6.022 mg/l; 4 h ; vapour; OECD Test Guideline 403
absorption
Symptoms: possible damages:, mucosal irritations.

Acute dermal toxicity: LD50 Rabbit: > 2,000 mg/kg; OECD Test Guideline 402 (Regulation (EC) No 1272/2008, Annex VI)
absorption

Skin irritation: rabbit: result: no skin irritation; OECD Test Guideline 404

Eye irritation: rabbit: result: eye irritation; OECD Test Guideline 405
Causes serious eye irritation.

Sensitisation
Buehler test Guinea pig: result: negative; method: OECD Test Guideline 406

Germ cell mutagenicity
Genotoxicity in vivo micronucleus test; mouse male and female i.p.
Result: negative; method: OECD Test Guideline 474

Genotoxicity in vitro
Ames test; Salmonella typhimurium
Result: negative (external MSDS)
Mutagenicity (mammal cell test): mouse lymphoma test
Result: negative; method: OECD Test Guideline 476

Carcinogenicity: this information is not available.

Reproductive toxicity: this information is not available.

Teratogenicity: this information is not available.

CMR effects
Carcinogenicity: based on available data the classification criteria are not met.
Mutagenicity: based on available data the classification criteria are not met.
Teratogenicity: based on available data the classification criteria are not met.
Reproductive toxicity: based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity rat; male and female
Inhalation vapour: 91 d; NOAEL: 0.681 mg/l (external MSDS)

Aspiration hazard
This information is not available.

Formic acid

Acute oral toxicity: LD50 Rat: 730 mg/kg; OECD Test Guideline 401

Acute inhalation toxicity: LC50 Rat: 7.4 mg/L; 4h; vapour; OECD Test Guideline 403

Skin irritation: rabbit: result: causes burns; OECD Test Guideline 404

Sensitation: Buehler test guinea pig: result: negative; OECD Test Guideline 406

Germ cell mutagenicity:
Genotoxicity in vivo: Ames test, Salmonella typhimurium
result: negative (Lit.)

Carcinogenicity: did not show carcinogenic effects in animal experiments. (IUCLID)

Reproductive toxicityL no impairment of reproductive performance in animal experiments. (IUCLID)

11.2 Further information

After absorption: systemic effects: shortness of breath, headache, dizziness, nausea, convulsions, unconsciousness, respiratory arrest, cardiac arrest.
Symptoms may be delayed.
The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.
Handle in accordance with good industrial hygiene and safety practice.

12 ECOLOGICAL INFORMATION

Mixture

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential
No information available.

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.6 Other adverse effects
Discharge into the environment must be avoided.

Components

Acetonitrile

Toxicity to fish:
semi-static test LC50 Oryzias latipes (Orange-red killifish): > 100 mg/l; 96 h
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
semi-static test EC50 Daphnia magna (Water flea): > 1,000 mg/l; 48 h
OECD Test Guideline 202
semi-static test NOEC Daphnia magna (Water flea): 960 mg/l; 21 d
OECD Test Guideline 202

Toxicity to algae:
static test EC50 Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l; 72 h
OECD Test Guideline 201
static test NOEC Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l; 72 h
OECD Test Guideline 201
IC5 Scenedesmus quadricauda (Green algae): 7,300 mg/l; 8 d (IUCLID) (maximum permissible toxic concentration)

Toxicity to bacteria:
EC5 Pseudomonas putida: 680 mg/l; 16 h (IUCLID) (maximum permissible toxic concentration)

Persistence and degradability
Biodegradability: 70%; 21d. OECD Test Guideline 310. Readily biodegradable.

Bioaccumulative potential
Partition coefficient: n-octanol/water: log Pow: -0.34 (IUCLID).
Bioaccumulation is not expected.

Bioaccumulation
Bioconcentration factor (BCF): 0.3
Lepomis macrochirus (Bluegill sunfish)
Does not significantly accumulate in organisms.

Mobility in soil
Distribution among environmental compartments
Adsorption/Soil: log Koc: 1.21; Mobile in soils (lit.)

Results of PBT and vPvB assessment
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Other adverse effects
Stability in water
DT50 > 9,999 d at pH: 7 (calculated). Hydrolyses slowly.

Additional ecological information
Biological effects: hazard for drinking water supplies.
Further information on ecology: discharge into the environment must be avoided.

Formic acid

Toxicity to fish:
LD50 Leuciscus idus (Golden orfe): 46-100 mg/L; 96h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates:
EC50 Daphnia magna (Water flea): 34.2 mg/l; 48 h (IUCLID)
semi-static test NOEC Daphnia magna (Water flea): >= 100 mg/l; 21 d;
OECD Test Guideline 211

Toxicity to algae:
IC50 Desmodesmus subspicatus (green algae): 27 mg/L; 72h (Lit.)

Toxicity to bacteria:
EC10 activated sludge: 72 mg/L; 13d (external MSDS)
EC50 Pseudomonas putida: 47 mg/L; 71h (IUCLID)

Biodegradability: 98%; 14d; OECD Test Guideline 301E. Neutral. Readily biodegradable.

Bioaccumulation: Does not significantly accumulate in organisms.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14 TRANSPORT INFORMATION

OPR I	Land transport (ADR/ RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	UN 1648		
14.2 Proper shipping name	OPR I		
14.3 Class	3		
14.4 Packing group	II		
14.5 Environmentally hazardous	-		
14.6 Special precautions for user	yes	no	yes
	Tunnel restriction: D/ E	-	EmS: F-E, S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant.

15 REGULATORY INFORMATION

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

ISDR A:
No data available.

ISDR B:
EU Regulations
Major accident hazard: SEVESO III
Legislation: Flammable liquids; Pc5; Quantity 1: 5000t; Quantity 2: 50000t
Occupational restrictions: Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: not regulated.
Regulation (EC) No 580/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC: not regulated.
Substances of very high concern (SVHC): This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Acticle 57 above the respective regulatory concentration limit of >=0.1% (w/w).

National legislation
Storage class 3.

15.2 Chemical Safety Assessment

For these products a chemical safety assessment was not carried out.

16 OTHER INFORMATION

Risk phrases, Safety phrases, Hazard statements and Precautionary statements referred elsewhere in the safety data sheet.

Full text of H-Statements referred to under sections 2 and 3:
H225: Highly flammable liquid and vapour.
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe burns and eye damage.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H332: Harmful if inhaled.

Full text of P-Statements referred to under sections 2 and 3:
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/…/ equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: wash with plenty o fsoap and water.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338: : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

Procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008: Calculation method.

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.
It remains the user's own responsibility to make sure that the information is appropriate and complete for his specific use of this product. The user is also responsible for observing any laws and applicable guidelines.

Changes to previous version of the SDS:
-Addition of formic acid.
-Changed address

EXPOSURE SCENARIO (Professional use)

1. Professional use (Solvent, Chemical for synthesis)

Sectors of end-use
SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category
PC21 Laboratory chemicals

Process categories
PROC15 Use as laboratory reagent

Environmental Release Categories
ERC2 Formulation of preparations
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b Industrial use of reactive processing aids

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2
Amount used: annual amount per site 5t.

Other given operational conditions affecting environmental exposure

Number of emission days per year	20
Emission or Release Factor: Air	2.5%
Emission or Release Factor: Water	2%
Emission or Release Factor: Soil	0.01%

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2,000 m3/d
Sludge treatment	Spreading as a worst case scenario

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used: annual amount per site 1000t.

Other given operational conditions affecting environmental exposure

Number of emission days per year	100
Emission or Release Factor: Air	5%
Emission or Release Factor: Water	2%
Emission or Release Factor: Soil	0.10%

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2,000 m3/d
Sludge Treatment	Spreading as a worst case scenario

2.3 Contributing scenario controlling environmental exposure for: ERC6b

Amount used: annual amount per site 1000t.

Other given operational conditions affecting environmental exposure

Number of emission days per year	100
Emission or Release Factor: Air	0.10%
Emission or Release Factor: Water	5%
Emission or Release Factor: Soil	0.025%

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	2,000 m3/d
Sludge Treatment	Spreading as a worst case scenario

2.4 Contributing scenario controlling environmental exposure for: PROC15

Product characteristics
Concentration of the substance in mixture/article: covers the percentage of the substance in the product up to 100%.
Physical form (at time of use): medium volatile liquid.
Process temperature: <20°C.

Frequency and duration of use
Frequency of use: 8 hours/day.

Other operational conditions affecting workers exposure
Outdoor / Indoor: Indoor without local exhaust ventilation (LEV).

Technical conditions and measures
Provide a good standard of general ventilation.

Organizational measures to prevent /limit releases, dispersion and exposure
Covers daily exposures up to 8 hours.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374.

Additional good practice advice beyond the REACH Chemical Safety Assessment
Additional good practice advice: use suitable eye protection. Wear suitable coveralls to prevent exposure to skin.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	Fresh water	< 0.01	EUSES
		Fresh water sediment	< 0.01	EUSES
		Marine water	< 0.01	EUSES
		Marine Sediment	< 0.01	EUSES
		Soil	< 0.01	EUSES
		Sewage treatment plant	< 0.01	EUSES

2.2	ERC6a	Fresh water	0.12	EUSES
		Fresh water sediment	0.12	EUSES
		Marine water	0.12	EUSES
		Marine Sediment	0.12	EUSES
		Soil	0.66	EUSES
		Sewage treatment plant	0.39	EUSES
2.3	ERC6b	Fresh water	0.30	EUSES
		Fresh water sediment	0.30	EUSES
		Marine water	0.30	EUSES
		Marine Sediment	0.30	EUSES
		Soil	0.16	EUSES
		Sewage treatment plant	0.97	EUSES

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.4	PROC15	longterm, inhalative, systemic	0.25	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	0.25	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

4. Guidance to downstream user to evaluate whether he works inside the boundaries set by the exposure scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merck-chemicals.com.

Changes to previous version of the SDS : Rev. 2.0: Address change