Human and Environmental Risk Assessment on ingredients of Household Cleaning Products

Substance: Sodium sulfate (CAS# 7757-82-6)

- Edition 1.0 -
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Table of Contents

1. The OECD/ICCA work on Sodium sulfate / HERA´s conclusion

The member countries of the Organisation for Economic Co-operation and Development (OECD) systematically investigate High Production Volume (HPV) chemicals in order to determine the need for further work on these chemicals. The set of minimum data elements that must be available to draw recommendations is known as the 'Screening Information Data Set' or SIDS. A SIDS Initial Assessment Report (SIAR) for sodium sulfate was presented at SIDS Initial Assessment Meeting (SIAM) 20 in April 2005 and its status was determined to be "currently of low priority for further work"

This Initial Assessment Report (SIAR) will be available[1] and accessible at the following address: http://www.chem.unep.ch/irptc/sids/oecdsids/indexcasnumb.htm .
HERA is determined to avoid any duplication of effort and to discourage effort for the sake of only marginal improvements. However, HERA believes that HERA Risk Assessments should be carried out where significant additional risk information can be obtained, and where a refinement of the existing assessments would yield new or significantly different conclusions in particular for the detergent use scenario. A decision which option should be selected has to be taken on a case by case basis. In this case, a brief summary of the SIDS dossier has been the preferred option, complemented by an environmental exposure assessment. Any unreferenced statements in this HERA document originate from the full OECD SIDS dossier, which should be checked for references.

2. Substance information

CAS Number

This summary covers Sodium sulfate 7757-82-6. Most of the data presented in this monograph are probably applicable to sulfate ions in general, irrespective of the source. However, care should be taken in extrapolating to other sulfates. The physico-chemical properties and the toxicity of other sulfates are to a large extent dependent on the counter-ion (e.g. metals other than sodium or organic compounds) and should be assessed separately..

Physical Properties

Sodium sulfate is an inorganic salt with a melting point of approximately 884 °C., a relative density of 2.7 g/cm^3 at 20°C and a water solubility of 161 g/l at 20°C . In the dry state it exists a white powder or white crystals; it has a bitter saline taste.

[1] Currently only as available as a draft subject to changes recommended at SIAM 20; Approval expected at SIAM 21.

Occurrence

Sodium sulfate is widely distributed in nature; it occurs as mineral salts (e.g. thenardite, mirabilite), it s present in almost all fresh and salt waters and sulfate as such is normally present in almost all natural foodstuffs.
Both sodium and sulfate ions are among the most common ions found in all living organisms. In mammals, sulfate is an normal metabolite of sulfur-containing amino-acids, it is normally incorporated in a variety of body compounds and it plays an important role in detoxification/ excretion processes due to sulfoconjugation.

Production and Use

Sodium sulfate has been produced for many years in high volumes for use in detergents, glass and paper manufacture and a variety of smaller industrial uses. About 50% of all production is as a by-product of various chemical processes (e.g. production of viscose rayon fibres). The principle of the production process is neutralisation of sulfuric acid with sodium hydroxide.

World-wide, an estimated amount of 1.058000 tons went into detergents (SSPA, 2003); In Europe, this was about 652000 tons. Based on data from SSPA members, it is assumed that this amount is around 65% of the world total production, but this should be used with caution since data from manufacture dedicated to the glass industry are not easily available.

Sodium sulfate concentrations in household detergents used for textile laundering (powders and tablets) vary widely, ranging from 0 to 56.7 % with an average of 20.8% (SSPA 2003) .

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3. Human health

Consumer exposure

As demonstrated in Annex 1, even under worst-case conditions, consumer exposure to sodium sulfate from detergents leads to an estimated uptake of 0.1mg/kg/d, which compared to the normal daily intake of 7.5 mg/kg day is negligible.

The available data confirm the low acute and (sub)chronic toxicity profile of sodium sulfate. Acute toxicity effects seen in humans were limited to diarrhoea after a single dose in excess of 300 mg/kg, presumably due to hygroscopic action of non-absorbed sodium sulfate in the gut Taken over an entire day in drinking water, doses of up to 1200 mg/kg were tolerated without any effect in humans?? [couldn't find this data on the SIDS summary, where is this coming from?]. Tentatively, a NOAEL for repeated dose toxicity (for rats) has been established at 320 mg/kg/d (i.e. the top dose in a 44 week study with limited validity); pathology at higher levels in shorter studies in various species was mainly related to dehydration. Sodium sulfate is not suspected of being a carcinogen nor a reprotoxic or teratogenic agent. It is not mutagenic in vitro and in vivo, and it does not seem to have a sensitising potential

Conclusion (human health)

Sodium sulfate is ubiquitous in nature, it is naturally present in common foodstuffs, has wide dispersive use and is added to processed food and beverages. Potential consumer exposure to sodium sulfate as a consequence of its presence in household laundry & cleaning products is expected to be several orders of magnitude below the rat's NOAEL and of little significance when compared with the normal dietary intake. The available information is judged to be adequate for concluding that the use of sodium sulfate in household laundry and cleaning products raises no safety concerns for consumers.

Other mammals.

Apparently, in ruminant animals there is a specific risk of sulfide formation from sulfate ingestion. This is due to anaerobic bacterial action in the rumen, which may lead to the formation of highly toxic sulfides. In bovine animals, high amounts of sulfides may cause toxic poli-encephalomalacia. Although the dose-effect relationship has not been fully clarified, drinking water concentrations below 500 ppm are recommended to prevent this disease, as well as overfeeding with plants with a high natural sulfate content (e.g. corn). Obviously this effect is irrelevant for humans and other non-ruminant mammals.

4. Environment:

Sodium sulfate is a substance with a favourable ecological profile. Due to the low aquatic toxicity and the natural recycling that occurs in the sulfur cycle, wide dispersive use of sodium sulfate does not present a major hazard to the environment although locally, peak concentrations may be damaging to un-adapted flora and fauna.

Environmental fate

Sodium sulfate is not biodegradable in the legal sense of the word, but it takes part in the sulfur cycle, in which sulfate is either incorporated into living organisms or reduced to sulfides by anaerobic bacteria, deposited as sulfur, or re-oxidised in the atmosphere and oceans to sulfur dioxide and sulfate. It has been estimated that the amount of sulfur globally contributed to the atmosphere from all natural and man-made sources is about 100 to 200 million tons. If all sulfur from above mentioned sodium sulfate production were to go into the atmosphere, it would contribute less than 0.25% to the world's total.

Environmental concentrations

Concentrations of sulfate in sea water are around 2700 ppm (mg/l). Freshwater concentrations range from a few ppm to thousands of ppm in some lakes, but are commonly around 20 to 50 ppm in rivers. Most of this sulfate derives from natural sources.

A worst case estimate of the environmental contribution from sodium sulfate use in detergents to these concentrations can be deduced by applying EUSES and its defaults to the available information (see annex 2: EUSES V. 2.03 output.) on the production figures of sodium sulfate. Conservatively assuming full production tonnage into detergent use, zero elimination in Waste Water Treatment Plants and no degradation in surface waters, the regional contribution to the sodium sulfate concentration in surface waters of about 9 mg/l (i.e. around 7 mg/l of sulfate) can be calculated. This figure corresponds reasonably well to reported increases in concentrations due to human

activities, but it should be borne in mind that this is not only from detergent use. Also, this calculation does not take sulfate incorporation and sulfide formation into account.

Aquatic toxicity

In freshwater, sodium sulfate appears to be of low acute toxicity to fish, daphnia and algae, with consistent LC50/EC50 values far above 1000 milligrams per litre. The lowest value found is 1900 mg/l for algae. Toxicity for micro-organisms in activated sludge is given as 8 grams/l or above, and limited data on sediment-dwelling organisms indicate a similar tolerance.

Environmental risk assessment

A Predicted Environmental Concentration of total around 27 - 57mg/l of sulfate in "normal" surface waters has been been calculated by adding the EUSES calculated values to the natural background concentrations (see "Environmental concentrations"). In a risk assessment based on the principles of the EU, a PNEC should be derived from the available acute toxicity data of sodium sulfate on fish, daphnia and algae, since no chronic data are available other than the algae studies. Using the default assessment factor of 1000 for substances with acute data for species from each of three trophic levels, a PNEC of 1.9 mg/l should be used. Obviously, this default should be considered within the context of the natural background concentrations (generally around 20-50 mg/l) and it would appear that in this case this default PNEC is not applicable..

Conclusion (environment)

In practice, it can be assumed that locally, sulfate concentrations may occasionally peak to levels that are too high for un-adapted organisms. At a regional or continental scale, the estimated and measured total concentrations are basically within the statistical error range of the natural background concentration range and far below levels that would cause acute toxicity. Therefore the available information is judged to be adequate for concluding that the use of sodium sulfate in household laundry and cleaning products raises no safety concerns for the environment.

5. THE SIDS INITIAL ASSESSMENT PROFILE

CAS No. 7757-82-6
Chemical Name Sodium Sulfate

RECOMMENDATIONS

The chemical is currently of low priority for further work.

SUMMARY CONCLUSIONS OF THE SIAR [2]

Human Health

Sulfate (and sodium) ions are important constituents of the mammalian body and of natural foodstuffs and there is a considerable daily turnover of both ions (several grams/day expressed as sodium sulfate). Near-complete absorption of dietary sulfates may occur at low concentration, depending on the counter-ion, but absorption capacity can be saturated at higher artificial dosages resulting in cathartic effects. Absorption through skin can probably be ignored since sodium sulfate is fully ionised in solution. One source suggests that very high levels of sulfate in urine may occur due to absorption from dust inhalation. At dietary levels, excretion is mainly in the urine. Sulfates are found in all body cells, with highest concentrations in connective tissues, bone and cartilage. Sulfates play a role in several important metabolic pathways, including those involved in detoxification processes.

The acute toxicity (LD_{50}) of sodium sulfate has not been reliably established but is probably far in excess of 5000 mg/kg. In an inhalation study with an aerosol, no adverse effects were found at 10 mg/m^3. Also human data indicate a very low acute toxicity of sodium sulfate. Human clinical experience indicates that very high oral doses of sodium sulfate, 300 mg/kg bw up to 20 grams for an adult, are well tolerated, except from (intentionally) causing severe diarrhoea. WHO/FAO did not set an ADI for sodium sulfate. There is no data on acute dermal toxicity, but this is probably of no concern because of total ionisation in solution.

Sodium sulfate is not irritating to the skin and slightly irritating to the eyes. Respiratory irritation has never been reported. Based on wide practical experience with sodium sulfate, in combination with the natural occurrence of sulfate in the body, sensitising effects are highly unlikely.

No suitable dermal and inhalation repeated-dose toxicity studies are available. Oral repeated dose studies in rats with limited validity suggest a tentative long-term NOAEL of 320 mg/kg/d. Oral repeated dose toxicity studies with 21, 28 and 35 day studies in hens and pigs are available. Toxicity was confined to changes in bodyweight, water and feed intake and diarrhoea. These changes occurred only at very high doses of sodium sulfate. In ruminants, high concentrations of sulfate in food may result in the

[2] These summary concentrations have been slightly modified after SIAM 20 due to comments from OECD member states and need confirmation from SIAM 21.

formation of toxic amounts of sulfides by bacterial reduction the rumen, leading to poly-encephalomalacia. Based on available consumer data, a daily dose of around 25 mg/kg/day is well tolerated by humans and from a small but well-controlled study it appears that 63 mg/kg/d for a short period has no effect at all.

There are no data on in-vitro and in-vivo genotoxicity, apart from a negative Ames test. There is no valid oral carcinogenicity study. Limited data from experimental studies support the notion that a substance that is abundantly present in and essential to the body is unlikely to be carcinogenic.

Limited data of poor validity did not provide an indication of toxicity to reproduction or development.

There are considerable data gaps and the data that are available are not all of standard quality or from animals commonly used for toxicity testing. Nevertheless the weight of evidence, combined with previous assessments of both the sodium ion and sulfic ions lead to the conclusion that the identified data gaps need not necessarily be filled.

Environment

Sodium sulfate is a solid inorganic salt well soluble in water (161-190 g/l at 20 ^{o}C) with a melting point of 884 ^{o}C and density of 2.7 g/cm^{3}. In water solutions it is fully dissociated to sodium and sulfate ions.

In water sodium sulfate completely dissociates into sodium and sulfate ions. The ions cannot hydrolyse. In anaerobic environments sulfate is biologically reduced to (hydrogen) sulphide by sulfate reducing bacteria, or incorporated into living organisms as source of sulphur, and thereby included in the sulphur cycle. Sodium sulfate is not reactive in aqueous solution at room temperature. Sodium sulfate will completely dissolve, ionise and distribute across the entire planetary "aquasphere". Some sulfates may eventually be deposited, the majority of sulfates participate in the sulphur cycle in which natural and industrial sodium sulfate are not distinguishable

Algae were shown to be the most sensitive to sodium sulfate; EC_{50} 120h = 1,900 mg/l. For invertebrates *(Daphnia magna)* the EC_{50} 48h = 4,580 mg/l and fish appeared to be the least sensitive with a LC_{50} 96h = 7,960 mg/l for *Pimephales promelas*. Activated sludge showed a very low sensitivity to sodium sulfate. There was no effect up to 8 g/l. Sodium sulfate is not very toxic to terrestrial plants. *Picea banksiana* was the most sensitive species, an effect was seen at 1.4 g/l. Sediment dwelling organisms were not very sensitive either, with an LC_{50} 96h = 660 mg/l for *Trycorythus sp*. Overall it can be concluded that sodium sulfate has no acute adverse effect on aquatic and sediment dwelling organisms. Toxicity to terrestrial plants is also low.

No data were found for long term toxicity. The acute studies all show a toxicity of sodium sulfate higher than 100 mg/l, no bioaccumulation is expected, therefore it can be considered that no further chronic studies are required.

Exposure

Production: production of sodium sulfate is 4.6 million tonnes/year (1999), of which approximately 50% a by-product of the chemical industry and the remainder is extracted from natural deposits.
Use: The main uses are manufacturing of glass and detergents. Other users are from a wide range of industries, including dyeing technology, electrochemical metal treatment, (animal) feeds, pharmaceuticals, textile, semi-conductors, intermediates, agriculture.
Release: Releases to water come from natural sources as well as from detergents and nearly all industrial sources listed above.
Occupational exposure: Exposure to sodium sulfate-containing dusts or aerosols is possible
Consumer products: Exposure to sodium sulfate occurs via drinking water and through naturally occurring or added amounts in foodstuffs. The maximum acceptable concentration for drinking water is 200 – 500 mg/l sulfate, and is based on taste rather than toxicity.

The BCF of sodium sulfate is very low and therefore significant bioconcentration is not expected. Sodium and sulfate ions are essential to all living organisms and their intracellular and extracellular concentrations are actively regulated. However some plants (e.g. corn and *Kochia Scoparia*), are capable of accumulating sulfate to concentrations that are potentially toxic to ruminants.

For details on consumer exposure to sulfate derived from its presence in household cleaning products see Annex 1, below.

NATURE OF FURTHER WORK RECOMMENDED

No further work recommended.

6. References

OECD SIDS, SIAM 20, 2005, UNEP Publications, SIAR Sodium sulfate.
http://www.chem.unep.ch/irptc/sids/oecdsids/indexcasnumb.htm .

SSPA (2003) Internal statistics. SSPA, CEFIC, 2003

EUSES output.

7. Contributors

This dossier has been prepared by Akzo Nobel RTC-CER on behalf of SSPA, the Sodium Sulfate Producers Association and its member companies.
Additional input was provided by experts of the HERA (Environment and Human Health) Task Forces.

Annex 1: Consumer contact scenarios for sodium sulfate in detergents

In line with the HERA general principles, this exposure assessment is limited to the use of household cleaning products by consumers and the general population. For these categories, exposure is primarily dermal and, to a much lesser degree, oral or inhalation.

Primary exposure to detergents is dermal and can occur during hand-washing of laundry and during loading of washing machines. Inhalation of dust may occur, when powdered preparations are used. These preparations have been known to contain up to 56% of sodium sulfate, although modern compact powders contain considerably less.

Another type of primary exposure is also dermal, although at much lower concentrations/skin loads. This occurs through contact with laundered clothing during operations such as transferring the wet laundry to a tumble dryer or clothes line plus unloading, ironing and/or folding of the dried items. However, this can be ignored since full body contact for 24 hrs/d is assumed in the next scenario as a worse case.

More importantly, skin contact with the laundered items in use affects all persons wearing cloths treated with detergents during the washing process. For the purpose of this assessment, full body contact for 24 hrs/d is assumed with bed linen, pyjamas and regular clothing items

Secondary or indirect exposure is oral and occurs through drinking water and eating food items, contaminated through leaf contact with water or through root uptake. This scenaria has not been further developed since an initial EUSES exposure assessment indicates that the contribution of sulfate from detergents remains within the normal variablity of backgroud concentrations.

Finally, oral exposure is also possible in accidents or suicide attempts.

Skin absorption in humans
Various scenarios for skin exposure and absorption have been described above and are quantitatively elaborated below. The default parameter values used in below calculations were taken from the HERA table of exposure values[3].

EXP dermal hand-wash = F1 x C' x Sder x n x F2 x F3 x F4 / BW, where **C' = C x Tder**

F1 Percentage (%) weight fraction of substance in product (57%)
C' Product load in mg/cm^2
Sder Surface area of exposed skin (1980 cm2 for hands and forearms)
n Exposure frequency (1 events per day)
F2 Percentage (%) of transfer of substance from solution to skin (100%)
F3 Percentage (%) of substance remaining on skin (100%)

[3] HERA guidance document Februari 2005, http://www.heraproject.com/Library.cfm

F4 Percentage (%) of substance absorbed via the skin (2% default for ionic substances)
BW Body weight (60 kg)
C Product concentration (1% solution = 1**0**mg/cm3)
Tder Thickness of product layer in contact with skin (0.01 cm)
C' = C x Tder = **10** mg/cm3 x 0.01 cm = **0.1** mg/cm2

EXP Dermal hand-treatment = (57/100) x (**0.1** mg/cm2) x (1980 cm2) x (1 events/day) x (100/100) x (100/100) x (2/100) / 60 kg

EXP Dermal hand-wash = 0.037 mg/kg/day

Direct skin contact resulting from fabric wearing

EXP dermal fabric wearing$_t$ = F_1 x C' x S_{der} x n x F_2 x F_3 x F4 / BW, where **C' = (M x F' x FD)/w1**

F_1 Percentage (%) weight fraction of substance in product (57 %)
C' Product load in mg/cm^2
Sder Surface area of exposed skin (17600 cm2 for whole body)
n Exposure frequency (1 events per day)
F_2 Percentage (%) of transfer of substance from fabric to skin (1%) ref?
F_3 Percentage (%) of substance remaining on skin (100%)
F4 Percentage (%) of substance absorbed via the skin (2%, see 5.3.1.1. section)
BW Body weight (60 kg)
M Amount of undiluted product used (90,000 mg)
F' Percentage (%) weight fraction of substance deposited on fabric (100%)
FD Fabric density (20 mg/cm2)
W1 Total weight of fabric (1 kg)

C' = (M x F'xFD)/w1 = [90,000 mg x (100/100) x 20 mg/cm2] / 1000,000 mg = 0.9 mg/cm2

EXP Dermal = (23/100) x (0.9 mg/cm2) x (17600 cm2) x (1 events/day) x (1/100) x (100/100) x (2/100) / 60 kg

EXP Dermal $_{\text{fabric wearing}}$ = 0.06 mg/kg/day

Inhalation of laundry powder dust.
During filling of a washing machine, some deterfent powder may get airborne. The amount has been estimated as 0.27 µg per cup of product. In a worst-case scenario, all this powder is inhaled, which for 57% sodium sulfate content, a default task frequency of 2.6 machine fillings per day, 100% uptake and 60 kg default body weight would result in
EXPinhalation= (C1 * Tf * C2) / BW, where
C1= amount in air per task (0.27 µg)
Tf=task frequency (2.6 times/d)
C2=concentration in product (57/100)
BW = body weight (60 kg)

EXP inhalation $_{\text{machine filling}}$ = 0.007 µg/kg/d

Systemic Oral uptake in humans.

Normal human uptake of sulfates from food and drinking water is around 453 mg/person/d. The additional uptake due to release of sodium sulfate from detergents into the environment is considered to be within the normal variability.
Total exposure in humans
Based on the above, the “reasonable worst case” human uptake is:

Systemic exposure (mg/kg/day)

Source	**Amount (mg/kg/day)**
Skin uptake from hand-wash	0.037
Skin uptake from fabric wear	0.06
Inhalatory uptake from machine filling	0.000007
Total:	**0.097 or, rounded off upwards, 0.1 mg.kg.d**

For the systemic exposure quantitative risk assessment, **0.1 mg/kg/day** will be used as the reasonable worst case total uptake. Without getting into numerical detail, it is obvious that the total contribution from detergents to the dietary daily sulfate uptake of around 7.5 mg/kg/d is negligible.

Accidental or incidental over-exposure
Household products may contain up to 57% of sodium sulfate. The acute minimum lethal dose has not been reliably determined; in humans a single dose of 300 mg/k may produce rather dramatic diarrhoea but no other adverse effects. A 10 kg child would have to swallow around 5 grams of detergent powder to obtain a non-fatal "serious nuisance" level. An adult considering suicide would have to swallow considerably more than 35 grams, without any guarantee even of coming close to a lethal dose. Therefore, these scenarios are considered highly unlikely. No single report of a fatality to oral uptake of laundry powders has been reported.

Annex 2 : Euses Output.

STUDY
STUDY IDENTIFICATION

Study name	Sodium Sulphate		S
Study description	HERA assessment		S
Author	Marc Geurts		S
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Calculations checksum	38BF4789		S

DEFAULTS
DEFAULT IDENTIFICATION

General name	EUSES defaults		S
Description	spreadsheet Geert Boeije - P&G	S	

CHARACTERISTICS OF COMPARTMENTS
GENERAL

Density of solid phase	2.5	[kg.l-1]	D
Density of water phase	1	[kg.l-1]	D
Density of air phase	1.3E-03	[kg.l-1]	D
Environmental temperature	12	[oC]	S
Standard temperature for Vp and Sol	25	[oC]	D
Constant of Junge equation	0.01	[Pa.m]	D
Surface area of aerosol particles	0.01	[m2.m-3]	D
Gas constant (8.314)	8.314	[Pa.m3.mol-1.K-1]	D

SUSPENDED MATTER

Volume fraction solids in suspended matter	0.1	[m3.m-3]	D
Volume fraction water in suspended matter	0.9	[m3.m-3]	D
Weight fraction of organic carbon in suspended matter	0.1	[kg.kg-1]	D
Bulk density of suspended matter	1.15E+03	[kgwwt.m-3]	O
Conversion factor wet-dry suspened matter	4.6	[kgwwt.kgdwt-1]	O

SEDIMENT

Volume fraction solids in sediment	0.2	[m3.m-3]	D
Volume fraction water in sediment	0.8	[m3.m-3]	D
Weight fraction of organic carbon in sediment	0.05	[kg.kg-1]	D

SOIL

Volume fraction solids in soil	0.6	[m3.m-3]	D
Volume fraction water in soil	0.2	[m3.m-3]	D
Volume fraction air in soil	0.2	[m3.m-3]	D
Weight fraction of organic carbon in soil	0.02	[kg.kg-1]	D
Weight fraction of organic matter in soil	0.034	[kg.kg-1]	O
Bulk density of soil	1.7E+03	[kgwwt.m-3]	O
Conversion factor wet-dry soil	1.13	[kgwwt.kgdwt-1]	O

STP SLUDGE

Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D

DEGRADATION AND TRANSFORMATION RATES

Rate constant for abiotic degradation in STP	0	[d-1]	D
Rate constant for abiotic degradation in bulk sediment	0	[d-1] (12[oC])	D
Rate constant for anaerobic biodegradation in sediment	0	[d-1] (12[oC])	D
Fraction of sediment compartment that is aerated	0.1	[m3.m-3]	D
Concentration of OH-radicals in atmosphere	5E+05	[molec.cm-3]	D
Rate constant for abiotic degradation in bulk soil	0	[d-1] (12[oC])	D

RELEASE ESTIMATION

Fraction of EU production volume for region	0.065	[-]	S
Fraction of EU tonnage for region (private use)	10	[%]	D
Fraction connected to sewer systems	0.8	[-]	S

SEWAGE TREATMENT
GENERAL

Number of inhabitants feeding one STP	1E+04	[eq]	S
Sewage flow	200	[l.eq-1.d-1]	S
Effluent discharge rate of local STP	2E+03	[m3.d-1]	O
Temperature dependency correction	No		S
Temperature of air above aeration tank	15	[oC]	D
Temperature of water in aeration tank	15	[oC]	D
Height of air column above STP	10	[m]	D
Number of inhabitants of region	2E+07	[eq]	S
Number of inhabitants of continental system	3.5E+08	[eq]	S
Windspeed in the system	3	[m.s-1]	D

RAW SEWAGE			
Mass of O2 binding material per person per day	54	[g.eq-1.d-1]	D
Dry weight solids produced per person per day	0.09	[kg.eq-1.d-1]	D
Density solids in raw sewage	1.5	[kg.l-1]	D
Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D
PRIMARY SETTLER			
Depth of primary settler	4	[m]	D
Hydraulic retention time of primary settler	2	[hr]	D
Density suspended and settled solids in primary settler	1.5	[kg.l-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
ACTIVATED SLUDGE TANK			
Depth of aeration tank	3	[m]	D
Density solids of activated sludge	1.3	[kg.l-1]	D
Concentration solids of activated sludge	4	[kg.m-3]	D
Steady state O2 concentration in activated sludge	2E-03	[kg.m-3]	D
Mode of aeration	Surface		S
Aeration rate of bubble aeration	1.31E-05	[m3.s-1.eq-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Sludge loading rate	0.15	[kg.kg-1.d-1]	D
Hydraulic retention time in aerator (9-box STP)	6.9	[hr]	O
Hydraulic retention time in aerator (6-box STP)	10.8	[hr]	O
Sludge retention time of aeration tank	9.2	[d]	O
SOLIDS-LIQUIDS SEPARATOR			
Depth of solids-liquid separator	3	[m]	D
Density suspended and settled solids in solids-liquid separator		1.3	[kg.l-1] D
Concentration solids in effluent	30	[mg.l-1]	D
Hydraulic retention time of solids-liquid separator	6	[hr]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D
LOCAL DISTRIBUTION			
AIR AND SURFACE WATER			
Concentration in air at source strength 1 [kg.d-1]	2.78E-04	[mg.m-3]	D
Standard deposition flux of aerosol-bound compounds	0.01	[mg.m-2.d-1]	D
Standard deposition flux of gaseous compounds	5E-04	[mg.m-2.d-1]	O
Suspended solids concentration in STP effluent water	15	[mg.l-1]	D
Dilution factor (rivers)	10	[-]	S
Flow rate of the river	1.8E+04	[m3.d-1]	D
Calculate dilution from river flow rate	No		S
Dilution factor (coastal areas)	100	[-]	D
SOIL			
Mixing depth of grassland soil	0.1	[m]	D
Dry sludge application rate on agricultural soil	5E+03	[kg.ha-1.yr-1]	S
Dry sludge application rate on grassland	1000	[kg.ha-1.yr-1]	S
Averaging time soil (for terrestrial ecosystem)	30	[d]	D
Averaging time agricultural soil	180	[d]	D
Averaging time grassland	180	[d]	D
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Mixing depth agricultural soil	0.2	[m]	D
Fraction of rain water infiltrating soil	0.25	[-]	D
Average annual precipitation	700.07	[mm.yr-1]	S

REGIONAL AND CONTINENTAL DISTRIBUTION
CONFIGURATION

Fraction of direct regional emissions to sea water	1	[%]	D
Fraction of direct continental emissions to sea water	0	[%]	D
Fraction of regional STP effluent to sea water	0	[%]	D
Fraction of continental STP effluent to sea water	0	[%]	D
Fraction of flow from continental rivers to regional rivers	0.034	[-]	D
Fraction of flow from continental rivers to regional sea	0	[-]	D
Fraction of flow from continental rivers to continental sea	0.966	[-]	O
Number of inhabitants of region	2E+07	[eq]	S
Number of inhabitants in the EU	3.7E+08	[eq]	S
Number of inhabitants of continental system	3.5E+08	[eq]	S

AREAS
REGIONAL

Area (land+rivers) of regional system	4E+04	[km2]	S
Area fraction of fresh water, region (excl. sea)	0.03	[-]	S
Area fraction of natural soil, region (excl. sea)	0.6	[-]	S
Area fraction of agricultural soil, region (excl. sea)	0.27	[-]	S
Area fraction of industrial/urban soil, region (excl. sea)	0.1	[-]	S
Length of regional sea water	40	[km]	D
Width of regional sea water	10	[km]	D
Area of regional sea water	400	[km2]	O
Area (land+rivers+sea) of regional system	4.04E+04	[km2]	O
Area fraction of fresh water, region (total)	0.0297	[-]	O
Area fraction of sea water, region (total)	9.9E-03	[-]	O
Area fraction of natural soil, region (total)	0.594	[-]	O
Area fraction of agricultural soil, region (total)	0.267	[-]	O
Area fraction of industrial/urban soil, region (total)	0.099	[-]	O

CONTINENTAL

Total area of EU (continent+region, incl. sea)	3.56E+06	[km2]	S
Area (land+rivers+sea) of continental system	3.52E+06	[km2]	O
Area (land+rivers) of continental system	3.52E+06	[km2]	S
Area fraction of fresh water, continent (excl. sea)	0.03	[-]	S
Area fraction of natural soil, continent (excl. sea)	0.6	[-]	S
Area fraction of agricultural soil, continent (excl. sea)	0.27	[-]	S
Area fraction of industrial/urban soil, continent (excl. sea)	0.1	[-]	S
Area fraction of fresh water, continent (total)	0.015	[-]	O
Area fraction of sea water, continent (total)	0.5	[-]	D
Area fraction of natural soil, continent (total)	0.3	[-]	O
Area fraction of agricultural soil, continent (total)	0.135	[-]	O
Area fraction of industrial/urban soil, continent (total)	0.05	[-]	O

MODERATE

Area of moderate system (incl.continent,region)	8.5E+07	[km2]	D
Area of moderate system (excl.continent, region)	8.14E+07	[km2]	O
Area fraction of water, moderate system	0.5	[-]	D

ARCTIC

Area of arctic system	4.25E+07	[km2]	D
Area fraction of water, arctic system	0.6	[-]	D

TROPIC

Area of tropic system	1.275E+08	[km2]	D
Area fraction of water, tropic system	0.7	[-]	D

TEMPERATURE

Environmental temperature, regional scale	12	[oC]	D
Environmental temperature, continental scale	12	[oC]	D
Environmental temperature, moderate scale	12	[oC]	D
Environmental temperature, arctic scale	-10	[oC]	D
Environmental temperature, tropic scale	25	[oC]	D
Enthalpy of vaporisation	50	[kJ.mol-1]	D
Enthalpy of solution	10	[kJ.mol-1]	D

MASS TRANSFER			
Air-film PMTC (air-water interface)	4.51E-03	[m.s-1]	O
Water-film PMTC (air-water interface)	5.24E-06	[m.s-1]	O
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
PMTC, soil side of air-soil interface	2.66E-08	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Water-film PMTC (sediment-water interface)	2.78E-06	[m.s-1]	D
Pore water PMTC (sediment-water interface)	2.78E-08	[m.s-1]	D
AIR			
GENERAL			
Atmospheric mixing height	1000	[m]	D
Windspeed in the system	3	[m.s-1]	D
Aerosol deposition velocity	1E-03	[m.s-1]	D
Aerosol collection efficiency	2E+05	[-]	D
RAIN			
Average precipitation, regional system	700	[mm.yr-1]	D
Average precipitation, continental system	700	[mm.yr-1]	D
Average precipitation, moderate system	700	[mm.yr-1]	D
Average precipitation, arctic system	250	[mm.yr-1]	D
Average precipitation, tropic system	1.3E+03	[mm.yr-1]	D
RESIDENCE TIMES			
Residence time of air, regional	0.687	[d]	O
Residence time of air, continental	6.41	[d]	O
Residence time of air, moderate	30.9	[d]	O
Residence time of air, arctic	22.3	[d]	O
Residence time of air, tropic	38.6	[d]	O
WATER			
DEPTH			
Water depth of fresh water, regional system	3	[m]	D
Water depth of sea water, regional system	10	[m]	D
Water depth of fresh water, continental system	3	[m]	D
Water depth of sea water, continental system	200	[m]	D
Water depth, moderate system	1000	[m]	D
Water depth, arctic system	1000	[m]	D
Water depth, tropic system	1000	[m]	D
SUSPENDED SOLIDS			
Suspended solids conc. fresh water, regional	15	[mg.l-1]	D
Suspended solids conc. sea water, regional	5	[mg.l-1]	D
Suspended solids conc. fresh water, continental	15	[mg.l-1]	D
Suspended solids conc. sea water, continental	5	[mg.l-1]	D
Suspended solids conc. sea water, moderate	5	[mg.l-1]	D
Suspended solids conc. sea water, arctic	5	[mg.l-1]	D
Suspended solids conc. sea water, tropic	5	[mg.l-1]	D
Concentration solids in effluent, regional	30	[mg.l-1]	D
Concentration solids in effluent, continental	30	[mg.l-1]	D
Concentration biota	1	[mgwwt.l-1]	D
RESIDENCE TIMES			
Residence time of fresh water, regional	69	[d]	O
Residence time of sea water, regional	4.82	[d]	O
Residence time of fresh water, continental	172	[d]	O
Residence time of sea water, continental	1.5E+03	[d]	O
Residence time of water, moderate	3.19E+03	[d]	O
Residence time of water, arctic	5.84E+03	[d]	O
Residence time of water, tropic	1.09E+04	[d]	O
SEDIMENT			
DEPTH			
Sediment mixing depth	0.03	[m]	D

SUSPENDED SOLIDS			
(Biogenic) prod. susp. solids in fresh water, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in sea water, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in fresh water, cont	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in sea water, cont	5	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, moderate	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, arctic	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, tropic	1	[g.m-2.yr-1]	D
SEDIMENTATION RATES			
Settling velocity of suspended solids	2.5	[m.d-1]	D
Net sedimentation rate, fresh water, regional	2.8	[mm.yr-1]	O
Net sedimentation rate, sea water, regional	0.965	[mm.yr-1]	O
Net sedimentation rate, fresh water, continental	2.76	[mm.yr-1]	O
Net sedimentation rate, sea water, continental	6.69E-03	[mm.yr-1]	O
Net sedimentation rate, moderate	2.39E-03	[mm.yr-1]	O
Net sedimentation rate, arctic	2E-03	[mm.yr-1]	O
Net sedimentation rate, tropic	2E-03	[mm.yr-1]	O
SOIL			
GENERAL			
Fraction of rain water infiltrating soil	0.25	[-]	D
Fraction of rain water running off soil	0.25	[-]	D
DEPTH			
Chemical-dependent soil depth	No		D
Mixing depth natural soil	0.05	[m]	D
Mixing depth agricultural soil	0.2	[m]	D
Mixing depth industrial/urban soil	0.05	[m]	D
Mixing depth of soil, moderate system	0.05	[m]	D
Mixing depth of soil, arctic system	0.05	[m]	D
Mixing depth of soil, tropic system	0.05	[m]	D
EROSION			
Soil erosion rate, regional system	0.03	[mm.yr-1]	D
Soil erosion rate, continental system	0.03	[mm.yr-1]	D
Soil erosion rate, moderate system	0.03	[mm.yr-1]	D
Soil erosion rate, arctic system	0.03	[mm.yr-1]	D
Soil erosion rate, tropic system	0.03	[mm.yr-1]	D
CHARACTERISTICS OF PLANTS, WORMS AND CATTLE			
PLANTS			
Volume fraction of water in plant tissue	0.65	[m3.m-3]	D
Volume fraction of lipids in plant tissue	0.01	[m3.m-3]	D
Volume fraction of air in plant tissue	0.3	[m3.m-3]	D
Correction for differences between plant lipids and octanol	0.95	[-]	D
Bulk density of plant tissue (wet weight)	0.7	[kg.l-1]	D
Rate constant for metabolism in plants	0	[d-1]	D
Rate constant for photolysis in plants	0	[d-1]	D
Leaf surface area	5	[m2]	D
Conductance	1E-03	[m.s-1]	D
Shoot volume	2	[l]	D
Rate constant for dilution by growth	0.035	[d-1]	D
Transpiration stream	1	[l.d-1]	D
WORMS			
Volume fraction of water inside a worm	0.84	[m3.m-3]	D
Volume fraction of lipids inside a worm	0.012	[m3.m-3]	D
Density of earthworms	1	[kgwwt.l-1]	D
Fraction of gut loading in worm	0.1	[kg.kg-1]	D
CATTLE			
Daily intake for cattle of grass (dryweight)	16.9	[kg.d-1]	D
Conversion factor grass from dryweight to wetweight	4	[kg.kg-1]	D
Daily intake of soil (dryweight)	0.41	[kg.d-1]	D
Daily inhalation rate for cattle	122	[m3.d-1]	D
Daily intake of drinking water for cattle	55	[l.d-1]	D

CHARACTERISTICS OF HUMANS			
Daily intake of drinking water	2	[l.d-1]	D
Daily intake of fish	0.115	[kg.d-1]	D
Daily intake of leaf crops (incl. fruit and cereals)	1.2	[kg.d-1]	D
Daily intake of root crops	0.384	[kg.d-1]	D
Daily intake of meat	0.301	[kg.d-1]	D
Daily intake of dairy products	0.561	[kg.d-1]	D
Inhalation rate for humans (consumers, environment)	0.833333	[m3.hr-1]	D
Inhalation rate for humans (worker exposure)	1.5	[m3.hr-1]	D
Bodyweight of the human considered	70	[kg]	D
Correction factor for duration and frequency of exposure	2.8	[-]	D
EXPOSURE VARIABLES CONSUMERS			
Respirable fraction of inhaled substance	1	[-]	D

SUBSTANCE
SUBSTANCE IDENTIFICATION

General name	OECD SIAR		S
Description	Sodium Sulphate		S
CAS-No	7757-82-6		S
EC-notification no.	0		S
EINECS no.	0		S

PHYSICO-CHEMICAL PROPERTIES

Molecular weight	142.04	[g.mol-1]	S
Melting point	884	[oC]	S
Boiling point	>884	[oC]	S
Vapour pressure at test temperature	1E-06	[Pa]	S
Temperature at which vapour pressure was measured	25	[oC]	D
Vapour pressure at 25 [oC]	6E-20	[kPa]	S
Octanol-water partition coefficient	-3	[log10]	S
Water solubility at test temperature	1.61E+05	[mg.l-1]	S
Temperature at which solubility was measured	20	[oC]	S
Water solubility at 25 [oC]	1.72E+05	[mg.l-1]	O

PARTITION COEFFICIENTS AND BIOCONCENTRATION FACTORS
SOLIDS-WATER

Chemical class for Koc-QSAR	Non-hydrophobics (default QSAR)	S	
Organic carbon-water partition coefficient	0.288	[l.kg-1]	O
Solids-water partition coefficient in soil	5.77E-03	[l.kg-1]	O
Solids-water partition coefficient in sediment	0.0144	[l.kg-1]	O
Solids-water partition coefficient suspended matter	0.0288	[l.kg-1]	O
Solids-water partition coefficient in raw sewage sludge	0.0865	[l.kg-1]	O
Solids-water partition coefficient in settled sewage sludge	0.0865	[l.kg-1]	O
Solids-water partition coefficient in activated sewage sludge	0.107	[l.kg-1]	O
Solids-water partition coefficient in effluent sewage sludge	0.107	[l.kg-1]	O
Soil-water partition coefficient	0.209	[m3.m-3]	O
Suspended matter-water partition coefficient	0.907	[m3.m-3]	O
Sediment-water partition coefficient	0.807	[m3.m-3]	O

AIR-WATER

Sub-cooled liquid vapour pressure	6.32E-08	[Pa]	O
Fraction of chemical associated with aerosol particles	0.999	[-]	O
Henry's law constant	4.94E-20	[Pa.m3.mol-1]	O
Air-water partitioning coefficient	2.09E-23	[m3.m-3]	O

BIOCONCENTRATION FACTORS
PREDATOR EXPOSURE

Bioconcentration factor for earthworms	2.5	[l.kgwwt-1]	S

HUMAN AND PREDATOR EXPOSURE

Bioconcentration factor for fish	13	[l.kgwwt-1]	S
QSAR valid for calculation of BCF-Fish	Yes		O
Biomagnification factor in fish	1	[-]	O
Biomagnification factor in predator	1	[-]	O

HUMAN EXPOSURE

Partition coefficient between leaves and air	3.12E+22	[m3.m-3]	O
Partition coefficient between plant tissue and water	0.65	[m3.m-3]	O
Transpiration-stream concentration factor	6.72E-05	[-]	O
Bioaccumulation factor for meat	7.94E-07	[d.kg-1]	O
Bioaccumulation factor for milk	7.94E-06	[d.kg-1]	O
Purification factor for surface water	1	[-]	O

BIOTA-WATER
FOR REGIONAL/CONTINENTAL DISTRIBUTION

Bioconcentration factor for aquatic biota	70.79	[l.kgwwt-1]	S

DEGRADATION AND TRANSFORMATION RATES
CHARACTARIZATION

Characterization of biodegradability	Not biodegradable		S

STP

Degradation calculation method in STP	First order, standard OECD/EU tests	S	
Rate constant for biodegradation in STP	0	[d-1]	O
Total rate constant for degradation in STP	0	[d-1]	O
Maximum growth rate of specific microorganisms	2	[d-1]	D
Half saturation concentration	0.5	[g.m-3]	D

WATER/SEDIMENT

WATER

Rate constant for hydrolysis in surface water	6.93E-07	[d-1] (12[oC])	O
Rate constant for photolysis in surface water	6.93E-07	[d-1]	O
Rate constant for biodegradation in surface water	0	[d-1] (20[oC])	O
Total rate constant for degradation in bulk surface water	5E+05	[d] (DT50,12[oC])	O

SEDIMENT

Rate constant for biodegradation in aerated sediment	1E+06	[d] (DT50,12[oC])	O
Total rate constant for degradation in bulk sediment	1E+07	[d] (DT50,12[oC])	O

AIR

Specific degradation rate constant with OH-radicals	0	[cm3.molec-1.s-1]	D
Rate constant for degradation in air	1E+40	[d] (DT50)	O

SOIL

Rate constant for biodegradation in bulk soil	1E+06	[d] (DT50,12[oC])	O
Total rate constant for degradation in bulk soil	1E+06	[d] (DT50,12[oC])	O

REMOVAL RATE CONSTANTS SOIL

Total rate constant for degradation in bulk soil	1E+06	[d] (DT50,12[oC])	O
Rate constant for volatilisation from agricultural soil	4.52E-20	[d-1]	O
Rate constant for volatilisation from grassland soil	9.05E-20	[d-1]	O
Rate constant for leaching from agricultural soil	0.0115	[d-1]	O
Rate constant for leaching from grassland soil	0.023	[d-1]	O
Total rate constant for removal from agricultural top soil	60.3	[d] (DT50)	O
Total rate constant for removal from grassland top soil	30.2	[d] (DT50)	O

RELEASE ESTIMATION
CHARACTERIZATION AND TONNAGE

High Production Volume Chemical	Yes		S
Production volume of chemical in EU	1.3E+06	[tonnes.yr-1]	S
Fraction of EU production volume for region	0.065	[-]	S
Regional production volume of substance	8.45E+04	[tonnes.yr-1]	O
Continental production volume of substance	1.22E+06	[tonnes.yr-1]	O
Volume of chemical imported to EU	0	[tonnes.yr-1]	S
Volume of chemical exported from EU	0	[tonnes.yr-1]	S
Tonnage of substance in Europe	1.3E+06	[tonnes.yr-1]	O

USE PATTERNS
PRODUCTION STEPS
OTHER LIFE CYCLE STEPS
EMISSION INPUT DATA

Usage/production title			D

USE PATTERN

Industry category	5 Personal / domestic use		S
Use category	9 Cleaning/washing agents and additives	S	
Extra details on use category	Unknown type		D
Extra details on use category	No extra details necessary		S

PRIVATE USE

Use specific emission scenario	No		D
Emission scenario	Emission fractions, fraction-main-source	S	

TONNAGE

Fraction of tonnage for application	1	[-]	O
Fraction of chemical in formulation	1	[-]	D
Tonnage of formulated product	8.45E+04	[tonnes.yr-1]	O
Relevant tonnage for application	1.3E+06	[tonnes.yr-1]	O
Regional tonnage of substance	8.45E+04	[tonnes.yr-1]	O
Tonnage of formulated product	8.45E+04	[tonnes.yr-1]	O
Regional tonnage of substance (private use step)	1.3E+05	[tonnes.yr-1]	O
Continental tonnage of substance (private use step)	1.17E+06	[tonnes.yr-1]	O
Total of fractions for all applications	1	[-]	O

INTERMEDIATE RESULTS
USE PATTERN 1
RELEASE FRACTIONS AND EMISSION DAYS
PRIVATE USE

Emission tables	A4.1 (specific uses), B4.# (specific uses)	S	

RELEASE FRACTIONS

Fraction of tonnage released to air	0	[-]	S
Fraction of tonnage released to waste water	1	[-]	S
Fraction of tonnage released to surfacewater	0	[-]	S
Fraction of tonnage released to industrial soil	0	[-]	S
Fraction of tonnage released to agricultural soil	0	[-]	O
Emission fractions determined by special scenario	No		O

EMISSION DAYS

Fraction of the main local source	7.5E-04	[-]	S
Number of emission days per year	365	[-]	S
Emission day determined by special scenario	No		O

REGIONAL AND CONTINENTAL RELEASES
PRIVATE USE
REGIONAL

Regional release to air	0	[kg.d-1]	O
Regional release to waste water	3.56E+05	[kg.d-1]	O
Regional release to surface water	0	[kg.d-1]	O
Regional release to industrial soil	0	[kg.d-1]	O
Regional release to agricultural soil	0	[kg.d-1]	O

CONTINENTAL			
Continental release to air	0	[kg.d-1]	O
Continental release to waste water	3.21E+06	[kg.d-1]	O
Continental release to surface water	0	[kg.d-1]	O
Continental release to industrial soil	0	[kg.d-1]	O
Continental release to agricultural soil	0	[kg.d-1]	O
REGIONAL AND CONTINENTAL TOTAL EMISSIONS			
Total regional emission to air	0	[kg.d-1]	O
Total regional emission to wastewater	2.85E+05	[kg.d-1]	O
Total regional emission to surface water	7.12E+04	[kg.d-1]	O
Total regional emission to industrial soil	0	[kg.d-1]	O
Total regional emission to agricultural soil	0	[kg.d-1]	O
Total continental emission to air	0	[kg.d-1]	O
Total continental emission to wastewater	2.56E+06	[kg.d-1]	O
Total continental emission to surface water	6.41E+05	[kg.d-1]	O
Total continental emission to industrial soil	0	[kg.d-1]	O
Total continental emission to agricultural soil	0	[kg.d-1]	O
LOCAL			
[PRIVATE USE]			
Local emission to air during episode	0	[kg.d-1]	O
Emission to air calculated by special scenario	No		O
Local emission to wastewater during episode	267	[kg.d-1]	O
Emission to water calculated by special scenario	No		O
Show this step in further calculations	Yes		S
Intermittent release	No		S

DISTRIBUTION
SEWAGE TREATMENT
CONTINENTAL

Fraction of emission directed to air	-1.35E-15	[-]	O
Fraction of emission directed to water	1	[-]	O
Fraction of emission directed to sludge	3.61E-05	[-]	O
Fraction of the emission degraded	0	[-]	O
Total of fractions	1	[-]	O
Indirect emission to air	-3.45E-09	[kg.d-1]	O
Indirect emission to surface water	2.56E+06	[kg.d-1]	O
Indirect emission to agricultural soil	92.5	[kg.d-1]	O

REGIONAL

Fraction of emission directed to air	-7.53E-15	[-]	O
Fraction of emission directed to water	1	[-]	O
Fraction of emission directed to sludge	3.61E-05	[-]	O
Fraction of the emission degraded	0	[-]	O
Total of fractions	1	[-]	O
Indirect emission to air	-2.15E-09	[kg.d-1]	O
Indirect emission to surface water	2.85E+05	[kg.d-1]	O
Indirect emission to agricultural soil	10.3	[kg.d-1]	O

LOCAL
[PRIVATE USE]
INPUT AND CONFIGURATION [PRIVATE USE]
INPUT

Use or bypass STP (local fresh water assessment)	Use STP		S
Use or bypass STP (local marine assessment)	Bypass STP		D
Local emission to wastewater during episode	267	[kg.d-1]	O
Concentration in untreated wastewater	134	[mg.l-1]	O
Local emission entering the STP	267	[kg.d-1]	O

CONFIGURATION

Type of local STP	With primary settler (9-box)		S
Number of inhabitants feeding this STP	1E+04	[eq]	O
Effluent discharge rate of this STP	2E+03	[m3.d-1]	O
Calculate dilution from river flow rate	No		S
Flow rate of the river	1.8E+04	[m3.d-1]	O
Dilution factor (rivers)	10	[-]	S
Dilution factor (coastal areas)	100	[-]	O

OUTPUT [PRIVATE USE]

Fraction of emission directed to air by STP	9.89E-22	[-]	O
Fraction of emission directed to water by STP	1	[-]	O
Fraction of emission directed to sludge by STP	3.61E-05	[-]	O
Fraction of the emission degraded in STP	0	[-]	O
Total of fractions	1	[-]	O
Local indirect emission to air from STP during episode	2.64E-19	[kg.d-1]	O
Concentration in untreated wastewater	134	[mg.l-1]	O
Concentration of chemical (total) in the STP-effluent	134	[mg.l-1]	O
Concentration in effluent exceeds solubility	No		S
Concentration in dry sewage sludge	12.2	[mg.kg-1]	O
PEC for micro-organisms in the STP	134	[mg.l-1]	O

REGIONAL, CONTINENTAL AND GLOBAL DISTRIBUTION
PECS
REGIONAL

Regional PEC in surface water (total)	8.9	[mg.l-1]	O
Regional PEC in sea water (total)	0.583	[mg.l-1]	O
Regional PEC in surface water (dissolved)	8.9	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Regional PEC in sea water (dissolved)	0.583	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Regional PEC in air (total)	-1.1E-30	[mg.m-3]	O
Regional PEC in agricultural soil (total)	1.22E-04	[mg.kgwwt-1]	O
Regional PEC in pore water of agricultural soils	9.93E-04	[mg.l-1]	O
Regional PEC in natural soil (total)	-6.8E-15	[mg.kgwwt-1]	O
Regional PEC in industrial soil (total)	-6.8E-15	[mg.kgwwt-1]	O
Regional PEC in sediment (total)	6.09	[mg.kgwwt-1]	O
Regional PEC in sea water sediment (total)	0.406	[mg.kgwwt-1]	O

CONTINENTAL

Continental PEC in surface water (total)	3.48	[mg.l-1]	O
Continental PEC in sea water (total)	0.0249	[mg.l-1]	O
Continental PEC in surface water (dissolved)	3.48	[mg.l-1]	O
Continental PEC in sea water (dissolved)	0.0249	[mg.l-1]	O
Continental PEC in air (total)	-9.45E-33	[mg.m-3]	O
Continental PEC in agricultural soil (total)	2.49E-05	[mg.kgwwt-1]	O
Continental PEC in pore water of agricultural soils	2.03E-04	[mg.l-1]	O
Continental PEC in natural soil (total)	-1.79E-16	[mg.kgwwt-1]	O
Continental PEC in industrial soil (total)	-1.93E-16	[mg.kgwwt-1]	O
Continental PEC in sediment (total)	2.39	[mg.kgwwt-1]	O
Continental PEC in sea water sediment (total)	0.0173	[mg.kgwwt-1]	O

GLOBAL: MODERATE

Moderate PEC in water (total)	9.89E-03	[mg.l-1]	O
Moderate PEC in water (dissolved)	9.89E-03	[mg.l-1]	O
Moderate PEC in air (total)	2.59E-33	[mg.m-3]	O
Moderate PEC in soil (total)	-2.36E-17	[mg.kgwwt-1]	O
Moderate PEC in sediment (total)	6.89E-03	[mg.kgwwt-1]	O

GLOBAL: ARCTIC

Arctic PEC in water (total)	9.88E-03	[mg.l-1]	O
Arctic PEC in water (dissolved)	9.88E-03	[mg.l-1]	O
Arctic PEC in air (total)	5.42E-38	[mg.m-3]	O
Arctic PEC in soil (total)	2.18E-21	[mg.kgwwt-1]	O
Arctic PEC in sediment (total)	6.87E-03	[mg.kgwwt-1]	O

GLOBAL: TROPIC

Tropic PEC in water (total)	9.54E-03	[mg.l-1]	O
Tropic PEC in water (dissolved)	9.54E-03	[mg.l-1]	O
Tropic PEC in air (total)	1.53E-36	[mg.m-3]	O
Tropic PEC in soil (total)	3.57E-21	[mg.kgwwt-1]	O
Tropic PEC in sediment (total)	6.64E-03	[mg.kgwwt-1]	O

STEADY-STATE FRACTIONS
REGIONAL

Steady-state mass fraction in regional fresh water	2.11E-03	[%]	O
Steady-state mass fraction in regional sea water	1.54E-04	[%]	O
Steady-state mass fraction in regional air	-2.93E-33	[%]	O
Steady-state mass fraction in regional agricultural soil	2.95E-08	[%]	O
Steady-state mass fraction in regional natural soil	-9.15E-19	[%]	O
Steady-state mass fraction in regional industrial soil	-1.53E-19	[%]	O
Steady-state mass fraction in regional fresh water sediment	1.66E-05	[%]	O
Steady-state mass fraction in regional sea water sediment	3.7E-07	[%]	O

CONTINENTAL			
Steady-state mass fraction in continental fresh water	0.0364	[%]	O
Steady-state mass fraction in continental sea water	0.578	[%]	O
Steady-state mass fraction in continental air	-2.19E-33	[%]	O
Steady-state mass fraction in continental agricultural soil	2.66E-07	[%]	O
Steady-state mass fraction in continental natural soil	-1.06E-18	[%]	O
Steady-state mass fraction in continental industrial soil	-1.9E-19	[%]	O
Steady-state mass fraction in continental fresh water sediment		2.87E-04	[%] O
Steady-state mass fraction in continental sea water sediment	6.94E-05	[%]	O
GLOBAL: MODERATE			
Steady-state mass fraction in moderate water	26.6	[%]	O
Steady-state mass fraction in moderate air	1.39E-32	[%]	O
Steady-state mass fraction in moderate soil	-5.39E-18	[%]	O
Steady-state mass fraction in moderate sediment	6.38E-04	[%]	O
GLOBAL: ARCTIC			
Steady-state mass fraction in arctic water	16.6	[%]	O
Steady-state mass fraction in arctic air	1.52E-37	[%]	O
Steady-state mass fraction in arctic soil	2.08E-22	[%]	O
Steady-state mass fraction in arctic sediment	3.99E-04	[%]	O
GLOBAL: TROPIC			
Steady-state mass fraction in tropic water	56.2	[%]	O
Steady-state mass fraction in tropic air	1.29E-35	[%]	O
Steady-state mass fraction in tropic soil	7.66E-22	[%]	O
Steady-state mass fraction in tropic sediment	1.35E-03	[%]	O
STEADY-STATE MASSES			
REGIONAL			
Steady-state mass in regional fresh water	3.2E+07	[kg]	O
Steady-state mass in regional sea water	2.33E+06	[kg]	O
Steady-state mass in regional air	-4.44E-23	[kg]	O
Steady-state mass in regional agricultural soil	447	[kg]	O
Steady-state mass in regional natural soil	-1.39E-08	[kg]	O
Steady-state mass in regional industrial soil	-2.31E-09	[kg]	O
Steady-state mass in regional fresh water sediment	2.52E+05	[kg]	O
Steady-state mass in regional sea water sediment	5.6E+03	[kg]	O
CONTINENTAL			
Steady-state mass in continental fresh water	5.52E+08	[kg]	O
Steady-state mass in continental sea water	8.76E+09	[kg]	O
Steady-state mass in continental air	-3.33E-23	[kg]	O
Steady-state mass in continental agricultural soil	4.03E+03	[kg]	O
Steady-state mass in continental natural soil	-1.61E-08	[kg]	O
Steady-state mass in continental industrial soil	-2.88E-09	[kg]	O
Steady-state mass in continental fresh water sediment	4.34E+06	[kg]	O
Steady-state mass in continental sea water sediment	1.05E+06	[kg]	O
GLOBAL: MODERATE			
Steady-state mass in moderate water	4.03E+11	[kg]	O
Steady-state mass in moderate air	2.11E-22	[kg]	O
Steady-state mass in moderate soil	-8.17E-08	[kg]	O
Steady-state mass in moderate sediment	9.67E+06	[kg]	O
GLOBAL: ARCTIC			
Steady-state mass in arctic water	2.52E+11	[kg]	O
Steady-state mass in arctic air	2.3E-27	[kg]	O
Steady-state mass in arctic soil	3.15E-12	[kg]	O
Steady-state mass in arctic sediment	6.05E+06	[kg]	O
GLOBAL: TROPIC			
Steady-state mass in tropic water	8.51E+11	[kg]	O
Steady-state mass in tropic air	1.95E-25	[kg]	O
Steady-state mass in tropic soil	1.16E-11	[kg]	O
Steady-state mass in tropic sediment	2.04E+07	[kg]	O

LOCAL
[PRIVATE USE]
LOCAL CONCENTRATIONS AND DEPOSITIONS [PRIVATE USE]

Concentration in air during emission episode	7.35E-23	[mg.m-3]	O
Annual average concentration in air, 100 m from point source	7.35E-23	[mg.m-3]	O
Total deposition flux during emission episode	2.64E-21	[mg.m-2.d-1]	O
Annual average total deposition flux	2.64E-21	[mg.m-2.d-1]	O
Concentration in surface water during emission episode (dissolved)	13.4	[mg.l-1]	O
Annual average concentration in surface water (dissolved)	13.4	[mg.l-1]	O
Concentration in sea water during emission episode (dissolved)	1.34	[mg.l-1]	O
Annual average concentration in sea water (dissolved)	1.34	[mg.l-1]	O
Concentration in agric. soil averaged over 30 days	0.0154	[mg.kgwwt-1]	O
Concentration in agric. soil averaged over 180 days	7.69E-03	[mg.kgwwt-1]	O
Concentration in grassland averaged over 180 days	1.71E-03	[mg.kgwwt-1]	O
Fraction of steady-state (agricultural soil)	1	[-]	O
Fraction of steady-state (grassland soil)	1	[-]	O

LOCAL PECS [PRIVATE USE]

Annual average local PEC in air (total)	7.35E-23	[mg.m-3]	O
Local PEC in surface water during emission episode (dissolved)	22.3	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in surface water (dissolved)	22.3	[mg.l-1]	O
Local PEC in fresh-water sediment during emission episode	17.6	[mg.kgwwt-1]	O
Local PEC in sea water during emission episode (dissolved)	1.92	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in sea water (dissolved)	1.92	[mg.l-1]	O
Local PEC in marine sediment during emission episode	1.51	[mg.kgwwt-1]	O
Local PEC in agric. soil (total) averaged over 30 days	0.0154	[mg.kgwwt-1]	O
Local PEC in agric. soil (total) averaged over 180 days	7.69E-03	[mg.kgwwt-1]	O
Local PEC in grassland (total) averaged over 180 days	1.71E-03	[mg.kgwwt-1]	O
Local PEC in pore water of agricultural soil	0.0627	[mg.l-1]	O
Local PEC in pore water of grassland	0.0139	[mg.l-1]	O
Local PEC in groundwater under agricultural soil	0.0627	[mg.l-1]	O

EXPOSURE
SECONDARY POISONING
SECONDARY POISONING [PRIVATE USE]

Concentration in fish for secondary poisoning (fresh water)	202	[mg.kgwwt-1]	O
Concentration in fish for secondary poisoning (marine)	16.3	[mg.kgwwt-1]	O
Concentration in fish-eating marine top-predators	9.32	[mg.kgwwt-1]	O
Concentration in earthworms from agricultural soil	0.0719	[mg.kg-1]	O

HUMANS EXPOSED TO OR VIA THE ENVIRONMENT
REGIONAL
CONCENTRATIONS IN FISH, PLANTS AND DRINKING WATER

Regional concentration in wet fish	116	[mg.kg-1]	O
Regional concentration in root tissue of plant	9.22E-04	[mg.kg-1]	O
Regional concentration in leaves of plant	1.36E-06	[mg.kg-1]	O
Regional concentration in grass (wet weight)	1.36E-06	[mg.kg-1]	O
Fraction of total uptake by crops from pore water	1	[-]	O
Fraction of total uptake by crops from air	-4.49E-24	[-]	O
Fraction of total uptake by grass from pore water	1	[-]	O
Fraction of total uptake by grass from air	-4.49E-24	[-]	O
Regional concentration in drinking water	8.9	[mg.l-1]	O

CONCENTRATIONS IN MEAT AND MILK

Regional concentration in meat (wet weight)	3.89E-04	[mg.kg-1]	O
Regional concentration in milk (wet weight)	3.89E-03	[mg.kg-1]	O
Fraction of total intake by cattle through grass	1.88E-07	[-]	O
Fraction of total intake by cattle through drinking water	1	[-]	O
Fraction of total intake by cattle through air	-2.74E-31	[-]	O
Fraction of total intake by cattle through soil	1.16E-07	[-]	O

DAILY HUMAN DOSES

Daily dose through intake of drinking water	0.254	[mg.kg-1.d-1]	O
Fraction of total dose through intake of drinking water	0.572	[-]	O
Daily dose through intake of fish	0.19	[mg.kg-1.d-1]	O
Fraction of total dose through intake of fish	0.428	[-]	O
Daily dose through intake of leaf crops	2.34E-08	[mg.kg-1.d-1]	O
Fraction of total dose through intake of leaf crops	5.26E-08	[-]	O
Daily dose through intake of root crops	5.06E-06	[mg.kg-1.d-1]	O
Fraction of total dose through intake of root crops	1.14E-05	[-]	O
Daily dose through intake of meat	1.67E-06	[mg.kg-1.d-1]	O
Fraction of total dose through intake of meat	3.76E-06	[-]	O
Daily dose through intake of milk	3.12E-05	[mg.kg-1.d-1]	O
Fraction of total dose through intake of milk	7.01E-05	[-]	O
Daily dose through intake of air	-3.14E-31	[mg.kg-1.d-1]	O
Fraction of total dose through intake of air	-7.07E-31	[-]	O
Regional total daily intake for humans	0.444	[mg.kg-1.d-1]	O

LOCAL
[PRIVATE USE]
CONCENTRATIONS IN FISH, PLANTS AND DRINKING WATER [PRIVATE USE]

Local concentration in wet fish	289	[mg.kg-1]	O
Local concentration in root tissue of plant	0.0582	[mg.kg-1]	O
Local concentration in leaves of plant	8.6E-05	[mg.kg-1]	O
Local concentration in grass (wet weight)	1.91E-05	[mg.kg-1]	O
Fraction of total uptake by crops from pore water	1	[-]	O
Fraction of total uptake by crops from air	4.76E-18	[-]	O
Fraction of total uptake by grass from pore water	1	[-]	O
Fraction of total uptake by grass from air	2.14E-17	[-]	O
Local concentration in drinking water	22.3	[mg.l-1]	O
Annual average local PEC in air (total)	7.35E-23	[mg.m-3]	O

CONCENTRATIONS IN MEAT AND MILK [PRIVATE USE]

Local concentration in meat (wet weight)	9.72E-04	[mg.kg-1]	O
Local concentration in milk (wet weight)	9.72E-03	[mg.kg-1]	O
Fraction of total intake by cattle through grass	1.05E-06	[-]	O
Fraction of total intake by cattle through drinking water	1	[-]	O
Fraction of total intake by cattle through air	7.32E-24	[-]	O
Fraction of total intake by cattle through soil	6.48E-07	[-]	O

DAILY HUMAN DOSES [PRIVATE USE]

Daily dose through intake of drinking water	0.636	[mg.kg-1.d-1]	O
Fraction of total dose through intake of drinking water	0.572	[-]	O
Daily dose through intake of fish	0.475	[mg.kg-1.d-1]	O
Fraction of total dose through intake of fish	0.428	[-]	O
Daily dose through intake of leaf crops	1.47E-06	[mg.kg-1.d-1]	O
Fraction of total dose through intake of leaf crops	1.33E-06	[-]	O
Daily dose through intake of root crops	3.19E-04	[mg.kg-1.d-1]	O
Fraction of total dose through intake of root crops	2.87E-04	[-]	O
Daily dose through intake of meat	4.18E-06	[mg.kg-1.d-1]	O
Fraction of total dose through intake of meat	3.76E-06	[-]	O
Daily dose through intake of milk	7.79E-05	[mg.kg-1.d-1]	O
Fraction of total dose through intake of milk	7.01E-05	[-]	O
Daily dose through intake of air	2.1E-23	[mg.kg-1.d-1]	O
Fraction of total dose through intake of air	1.89E-23	[-]	O
Local total daily intake for humans	1.11	[mg.kg-1.d-1]	O

CONSUMER EXPOSURE
SCENARIO 1 :
INPUT
ORAL

Scenario for oral exposure	A : Substance in a product swallowed	S	
Time scale of oral exposure	(Sub-)Chronic		S
Number of events	??	[d-1]	D
Volume of diluted product in contact with mouth	??	[cm3]	D
Concentration of substance in undiluted product	??	[mg.cm-3]	O
Density of product before dilution	??	[mg.cm-3]	O
Amount of undiluted product used	??	[mg]	D
Volume of product before dilution	??	[cm3]	D
Weight fraction of substance in product	??	[-]	D
Dilution factor	??	[-]	D
Fraction of product swallowed	??	[-]	D
Surface area of article in contact with food	??	[cm2]	D
Thickness of article in contact with food	??	[cm]	D
Concentration of substance in article	??	[mg.cm-3]	D
Fraction of substance migrating per unit time	??	[hr-1]	D
Volume of food	??	[cm3]	D
Duration of contact per event	??	[hr]	D

INHALATION

Time scale of inhalatory exposure	(Sub-)Chronic		S
Number of events	??	[d-1]	D
Duration of contact per event	??	[hr]	D
Amount of product used	??	[mg]	D
Weight fraction of substance in product	??	[-]	D
Room volume	??	[m3]	D

DERMAL

Scenario for dermal exposure	A : Substance contained in a medium	S	
Time scale of dermal exposure	(Sub-)Chronic		S
Number of events	??	[d-1]	D
Exposed body part	Total		S
Surface area of exposed skin	1.94	[m2]	O
Average concentration of substance in product	??	[mg.cm-3]	O
Concentration of substance in undiluted product	??	[mg.cm-3]	O
Density of product before dilution	??	[mg.cm-3]	O
Amount of undiluted product used	??	[mg]	D
Volume of product before dilution	??	[cm3]	D
Weight fraction of substance in product	??	[-]	D
Dilution factor	??	[-]	D
Volume of diluted product contacting the skin	194	[cm3]	O
Thickness of layer of product on skin	0.01	[cm]	D
Weight of substance on skin per event	??	[mg.cm-2]	D
Fraction of substance migrating per unit time	??	[hr-1]	D
Duration of contact per event	??	[hr]	D

INTERMEDIATE RESULTS

ORAL

Scenario for oral exposure	A : Substance in a product swallowed	S	
Concentration in product swallowed	??	[mg.cm-3]	O
Ingestion rate of substance	??	[g.kgbw-1.d-1]	O

INHALATORY

Concentration in air of room	??	[mg.m-3]	O
Inhalatory intake	??	[g.kgbw-1.d-1]	O

DERMAL

Scenario for dermal exposure	A : Substance contained in a medium	S	
Average concentration of substance in product	??	[mg.cm-3]	O
Weight of substance on skin per event	??	[mg.cm-2]	D
Amount of substance on skin	??	[mg]	O
Amount of substance on skin due to migration	??	[g.kgbw-1.d-1]	D
Potential dermal uptake	??	[g.kgbw-1.d-1]	O

CHRONIC EXPOSURE

Annual average oral exposure concentration	??	[mg.cm-3]	O
Annual average inhalation exposure concentration	??	[mg.m-3]	O
Annual average dermal exposure concentration	??	[mg.cm-3]	O

TOTAL EXPOSURE

Total chronic uptake via different routes	0	[g.kgbw-1.d-1]	O
Total acute uptake via different routes	0	[g.kgbw-1.d-1]	O

EFFECTS
INPUT OF EFFECTS DATA
MICRO-ORGANISMS

Test system	Respiration inhibition, EU Annex V C.11, OECD 209	D	
EC50 for micro-organisms in a STP	??	[mg.l-1]	D
EC10 for micro-organisms in a STP	2.6E+04	[mg.l-1]	S
NOEC for micro-organisms in a STP	??	[mg.l-1]	D

AQUATIC ORGANISMS
FRESH WATER
L(E)C50 SHORT-TERM TESTS

LC50 for fish	7.96E+03	[mg.l-1]	S
L(E)C50 for Daphnia	4.58E+03	[mg.l-1]	S
EC50 for algae	1.9E+03	[mg.l-1]	S
LC50 for additional taxonomic group	??	[mg.l-1]	D
Aquatic species	other		D

NOEC LONG-TERM TESTS

NOEC for fish	??	[mg.l-1]	D
NOEC for Daphnia	??	[mg.l-1]	D
NOEC for algae	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D

MARINE
L(E)C50 SHORT-TERM TESTS

LC50 for fish (marine)	??	[mg.l-1]	D
L(E)C50 for crustaceans (marine)	??	[mg.l-1]	D
EC50 for algae (marine)	??	[mg.l-1]	D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D

NOEC LONG-TERM TESTS

NOEC for fish (marine)	??	[mg.l-1]	D
NOEC for crustaceans (marine)	??	[mg.l-1]	D
NOEC for algae (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D

FRESH WATER SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for fresh-water sediment organism	660	[mg.kgwwt-1]	S
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS

EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

MARINE SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS			
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
TERRESTRIAL ORGANISMS			
L(E)C50 SHORT-TERM TESTS			
LC50 for plants	1.4E+03	[mg.kgwwt-1]	S
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for earthworms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
EC50 for microorganisms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for other terrestrial species	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC LONG-TERM TESTS			
NOEC for plants	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for earthworms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for microorganisms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
BIRDS			
LC50 in avian dietary study (5 days)	??	[mg.kg-1]	D
NOEC via food (birds)	??	[mg.kg-1]	D
NOAEL (birds)	??	[mg.kg-1.d-1]	D
Conversion factor NOAEL to NOEC (birds)	8	[kg.d.kg-1]	D
MAMMALS			
REPEATED DOSE			
ORAL			
Oral NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Oral LOAEL (repdose)	??	[mg.kg-1.d-1]	D
Oral CED (repdose)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (repdose)	??	[mg.kg-1]	D
LOEC via food (repdose)	??	[mg.kg-1]	D
CED via food (repdose)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (repdose)	??	[mg.l-1]	D
Inhalatory LOAEL (repdose)	??	[mg.l-1]	D
Inhalatory CED (repdose)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal CED (repdose)	??	[mg.kg-1.d-1]	D

FERTILITY			
ORAL			
Oral NOAEL (fert)	??	[mg.kg-1.d-1]	D
Oral LOAEL (fert)	??	[mg.kg-1.d-1]	D
Oral CED (fert)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (fert)	??	[mg.kg-1]	D
LOEC via food (fert)	??	[mg.kg-1]	D
CED via food (fert)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (fert)	??	[mg.m-3]	D
Inhalatory LOAEL (fert)	??	[mg.m-3]	D
Inhalatory CED (fert)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal CED (fert)	??	[mg.kg-1.d-1]	D
MATERNAL-TOX			
ORAL			
Oral NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (mattox)	??	[mg.kg-1.d-1]	D
Oral CED (mattox)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (mattox)	??	[mg.kg-1]	D
LOEC via food (mattox)	??	[mg.kg-1]	D
CED via food (mattox)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (mattox)	??	[mg.m-3]	D
Inhalatory LOAEL (mattox)	??	[mg.m-3]	D
Inhalatory CED (mattox)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal CED (mattox)	??	[mg.kg-1.d-1]	D
DEVELOPMENT-TOX			
ORAL			
Oral NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (devtox)	??	[mg.kg-1.d-1]	D
Oral CED (devtox)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (devtox)	??	[mg.kg-1]	D
LOEC via food (devtox)	??	[mg.kg-1]	D
CED via food (devtox)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (devtox)	??	[mg.m-3]	D
Inhalatory LOAEL (devtox)	??	[mg.m-3]	D
Inhalatory CED (devtox)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal CED (devtox)	??	[mg.kg-1.d-1]	D

CARC (THRESHOLD)			
ORAL			
Oral NOAEL (carc)	??	[mg.kg-1.d-1]	D
Oral LOAEL (carc)	??	[mg.kg-1.d-1]	D
Oral CED (carc)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (carc)	??	[mg.kg-1]	D
LOEC via food (carc)	??	[mg.kg-1]	D
CED via food (carc)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (carc)	??	[mg.m-3]	D
Inhalatory LOAEL (carc)	??	[mg.m-3]	D
Inhalatory CED (carc)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal CED (carc)	??	[mg.kg-1.d-1]	D
CARC (NON-THRESHOLD)			
ORAL			
Oral T25 for non-threshold effects	??	[mg.kg-1.d-1]	D
Oral CED for non-threshold effects	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)	D	
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
T25 via food for non-threshold effects	??	[mg.kgfood-1]	D
CED via food for non-threshold effects	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory T25 for non-threshold effects	??	[mg.m-3]	D
Inhalatory CED for non-threshold effects	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal T25 for non-threshold effects	??	[mg.kg-1.d-1]	D
Dermal CED for non-threshold effects	??	[mg.kg-1.d-1]	D
ACUTE			
Oral LD50	??	[mg.kg-1]	D
Oral Discriminatory Dose	??	[mg.kg-1]	D
Inhalatory LC50	??	[mg.l-1]	O
Dermal LD50	??	[mg.kg-1]	O
PREDATOR			
Duration of (sub-)chronic oral test	28 days		S
NOEC via food for secondary poisoning	??	[mg.kg-1]	O
Source for NOEC-via-food data	No data available, enter manually	S	
BIO-AVAILIBILITY			
Bioavailability for oral uptake (oral to inhalation)	0.5	[-]	D
Bioavailability for oral uptake (oral to dermal)	1	[-]	D
Bioavailability for oral uptake (route to oral)	1	[-]	D
Bioavailability for inhalation (route from inhalation)	1	[-]	D
Bioavailability for inhalation (route to inhalation)	1	[-]	D
Bioavailability for dermal uptake (route from dermal)	1	[-]	O
Bioavailability for dermal uptake (route to dermal)	1	[-]	O
HUMANS			
REPEATED DOSE			
ORAL			
Oral NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Oral LOAEL (repdose)	??	[mg.kg-1.d-1]	D
INHALATORY			
Inhalatory NOAEL (repdose)	??	[mg.l-1]	D
Inhalatory LOAEL (repdose)	??	[mg.l-1]	D

DERMAL			
Dermal NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal NOEC in a medium (repdose)	??	[mg.cm-3]	D
Dermal LOEC in a medium (repdose)	??	[mg.cm-3]	D
FERTILITY			
ORAL			
Oral NOAEL (fert)	??	[mg.kg-1.d-1]	D
Oral LOAEL (fert)	??	[mg.kg-1.d-1]	D
INHALATORY			
Inhalatory NOAEL (fert)	??	[mg.m-3]	D
Inhalatory LOAEL (fert)	??	[mg.m-3]	D
DERMAL			
Dermal NOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal NOEC in a medium (fert)	??	[mg.cm-3]	D
Dermal LOEC in a medium (fert)	??	[mg.cm-3]	D
MATERNAL-TOX			
ORAL			
Oral NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (mattox)	??	[mg.kg-1.d-1]	D
INHALATORY			
Inhalatory NOAEL (mattox)	??	[mg.m-3]	D
Inhalatory LOAEL (mattox)	??	[mg.m-3]	D
DERMAL			
Dermal NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal NOEC in a medium (mattox)	??	[mg.cm-3]	D
Dermal LOEC in a medium (mattox)	??	[mg.cm-3]	D
DEVELOPMENT-TOX			
ORAL			
Oral NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (devtox)	??	[mg.kg-1.d-1]	D
INHALATORY			
Inhalatory NOAEL (devtox)	??	[mg.m-3]	D
Inhalatory LOAEL (devtox)	??	[mg.m-3]	D
DERMAL			
Dermal NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal NOEC in a medium (devtox)	??	[mg.cm-3]	D
Dermal LOEC in a medium (devtox)	??	[mg.cm-3]	D
CARC (THRESHOLD)			
ORAL			
Oral NOAEL (carc)	??	[mg.kg-1.d-1]	D
Oral LOAEL (carc)	??	[mg.kg-1.d-1]	D
INHALATORY			
Inhalatory NOAEL (carc)	??	[mg.m-3]	D
Inhalatory LOAEL (carc)	??	[mg.m-3]	D
DERMAL			
Dermal NOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal NOEC in a medium (carc)	??	[mg.cm-3]	D
Dermal LOEC in a medium (carc)	??	[mg.cm-3]	D

ACUTE			
Oral NOAEL	??	[mg.kg-1]	D
Oral LOAEL	??	[mg.kg-1]	D
Inhalatory NOAEL	??	[mg.l-1]	O
Inhalatory LOAEL	??	[mg.l-1]	O
Dermal NOAEL	??	[mg.kg-1]	O
Dermal LOAEL	??	[mg.kg-1]	O
Dermal NOEC in a medium	??	[mg.cm-3]	D
Dermal LOEC in a medium	??	[mg.cm-3]	D
CURRENT CLASSIFICATION			
Corrosive (C, R34 or R35)	No		S
Irritating to skin (Xi, R38)	No		S
Irritating to eyes (Xi, R36)	No		S
Risk of serious damage to eyes (Xi, R41)	No		S
Irritating to respiratory system (Xi, R37)	No		S
May cause sensitisation by inhalation (Xn, R42)	No		S
May cause sensitisation by skin contact (Xi, R43)	No		S
May cause cancer (T, R45)	No		S
May cause cancer by inhalation (T, R49)	No		S
Possible risk of irreversible effects (Xn, R40)	No		S
ENVIRONMENTAL EFFECTS ASSESSMENT			
ENVIRONMENTAL PNECS			
FRESH WATER			
Same taxonomic group for LC50 and NOEC	No		O
Toxicological data used for extrapolation to PNEC Aqua	1.9E+03	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	1000	[-]	O
PNEC for aquatic organisms	1.9	[mg.l-1]	O
INTERMITTENT RELEASES			
Toxicological data used for extrapolation to PNEC Aqua	1.9E+03	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	100	[-]	O
PNEC for aquatic organisms, intermittent releases	19	[mg.l-1]	O
STATISTICAL			
PNEC for aquatic organisms with statistical method	??	[mg.l-1]	D
MARINE			
Same taxonomic group for marine LC50 and NOEC	No		O
Toxicological data used for extrapolation to PNEC Marine	1.9E+03	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Marine	1E+04	[-]	O
PNEC for marine organisms	0.19	[mg.l-1]	O
STATISTICAL			
PNEC for marine organisms with statistical method	??	[mg.l-1]	D
FRESH WATER SEDIMENT			
Toxicological data used for extrapolation to PNEC sediment (fresh)		660	
		[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sediment (fresh)		1000	[-] O
PNEC for fresh-water sediment organisms (from toxicological data)		0.66	
		[mg.kgwwt-1]	O
PNEC for fresh-water sediment organisms (equilibrium partitioning)		1.5	
		[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in fresh-water sediment?		No	S
PNEC for fresh-water sediment-dwelling organisms	3.04	[mg.kgdwt-1]	O
MARINE SEDIMENT			
Toxicological data used for extrapolation to PNEC sediment (marine)		660	
		[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sediment (marine)		1E+04	[-] O
PNEC for marine sediment organisms (from toxicological data)		0.066	
		[mg.kgwwt-1]	O
PNEC for marine sediment organisms (equilibrium partitioning)		0.15	
		[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in marine sediment?	No		O
PNEC for marine sediment organisms	0.066	[mg.kgwwt-1]	O

TERRESTRIAL

Same taxonomic group for LC50 and NOEC	No		O
Toxicological data used for extrapolation to PNEC Terr	1.4E+03	[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC Terr	1000	[-]	O
PNEC for terrestrial organisms (from toxicological data)	1.4	[mg.kgwwt-1]	O
PNEC for terrestrial organisms (equilibrium partitioning)	0.233	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in soil?	No		S
PNEC for terrestrial organisms	1.4	[mg.kgwwt-1]	O

STATISTICAL

PNEC for terrestrial organisms with statistical method	??	[mg.kgwwt-1]	D

SECONDARY POISONING

Toxicological data used for extrapolation to PNEC oral	??	[mg.kg-1]	O
Assessment factor applied in extrapolation to PNEC oral	??	[-]	O
PNEC for secondary poisoning of birds and mammals	??	[mg.kg-1]	O

STP

Toxicological data used for extrapolation to PNEC micro	2.6E+04	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC micro	10	[-]	O
PNEC for micro-organisms in a STP	2.6E+03	[mg.l-1]	O

RISK CHARACTERIZATION
REFERENCE MOS
HUMANS EXPOSED TO OR VIA THE ENVIRONMENT
REPEATED DOSE
ORAL

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, oral (repdose)	1	[-]	O

INHALATORY

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, inhalatory (repdose)	1	[-]	O

FERTILITY
ORAL

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, oral (fert)	1	[-]	O

INHALATORY

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, inhalatory (fert)	1	[-]	O

MATERNAL-TOX
ORAL

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, oral (mattox)	1	[-]	O

INHALATORY

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, inhalatory (mattox)	1	[-]	O

DEVELOPMENT-TOX
ORAL

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, oral (devtox)	1	[-]	O

INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, inhalatory (devtox)	1	[-]	O
CARC (THRESHOLD)			
ORAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, oral (carc)	1	[-]	O
INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, human environmental, inhalatory (carc)	1	[-]	O
CARC (NON-THRESHOLD)			
ORAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Assessment factor for extrapolation to a low-risk level	2.5E+05	[-]	D
Reference-MOE, human environmental, oral (non-threshold)	2.5E+05	[-]	O
INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Assessment factor for extrapolation to a low-risk level	2.5E+05	[-]	D
Reference-MOE, human environmental, inhalatory (non-threshold)		2.5E+05	[-] O
HUMAN EQUIV. DOSE			
INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor humans via environment, inhalatory, non-threshold		1	[-] O
Human equivalent dose humans via environment, inhalatory, non-threshold		??	
	[mg.m-3]	O	
TOTAL EXPOSURE			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor humans via environment, total, non-threshold		1	[-] O
Human equivalent dose humans via environment, total, non-threshold		??	
	[mg.kg-1.d-1]	O	

CONSUMER EXPOSURE
ACUTE
ORAL (N(L)OAEL/ING.RATE)

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, oral (acute)	1	[-]	O

INHALATORY

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, inhalatory (acute)	1	[-]	O

DERMAL (N(L)OAEL/UPTAKE)

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (acute)		1	[-] O

DERMAL (N(L)OEC/CONC)

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (acute)		1	[-] O

REPEATED DOSE
ORAL (N(L)OAEL/ING.RATE)

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, oral (N(L)OAEL/Ing.rate) (repdose)		1	[-] O

ORAL (N(L)OEC/CONC)

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, oral (N(L)OEC/Conc) (repdose)		1	[-] O

INHALATORY

Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, inhalatory (repdose)	1	[-]	O

DERMAL (N(L)OAEL/UPTAKE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (repdose)		1	[-]	O
DERMAL (N(L)OEC/CONC)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (repdose)		1	[-]	O
FERTILITY				
ORAL (N(L)OAEL/ING.RATE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OAEL/Ing.rate) (fert)	1	[-]	O	
ORAL (N(L)OEC/CONC)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OEC/Conc) (fert)	1	[-]	O	
INHALATORY				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, inhalatory (fert)	1	[-]	O	
DERMAL (N(L)OAEL/UPTAKE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (fert)		1	[-]	O
DERMAL (N(L)OEC/CONC)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (fert)	1	[-]	O	

MATERNAL-TOX

ORAL (N(L)OAEL/ING.RATE)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OAEL/Ing.rate) (mattox)		1	[-]	O

ORAL (N(L)OEC/CONC)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OEC/Conc) (mattox)	1	[-]	O	

INHALATORY

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, inhalatory (mattox)	1	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (mattox)		1	[-]	O

DERMAL (N(L)OEC/CONC)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (mattox)		1	[-]	O

DEVELOPMENT-TOX

ORAL (N(L)OAEL/ING.RATE)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OAEL/Ing.rate) (devtox)		1	[-]	O

ORAL (N(L)OEC/CONC)

Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OEC/Conc) (devtox)	1	[-]	O	

INHALATORY				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, inhalatory (devtox)	1	[-]	O	
DERMAL (N(L)OAEL/UPTAKE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (devtox)		1	[-]	O
DERMAL (N(L)OEC/CONC)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (devtox)		1	[-]	O
CARC (THRESHOLD)				
ORAL (N(L)OAEL/ING.RATE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OAEL/Ing.rate) (carc)	1	[-]	O	
ORAL (N(L)OEC/CONC)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, oral (N(L)OEC/Conc) (carc)	1	[-]	O	
INHALATORY				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, inhalatory (carc)	1	[-]	O	
DERMAL (N(L)OAEL/UPTAKE)				
Assessment factor for allometric scaling	1	[-]	D	
Assessment factor for remaining interspecies differences	1	[-]	D	
Assessment factor for intraspecies differences	1	[-]	D	
Assessment factor for differences in exposure duration	1	[-]	D	
Assessment factor for differences in exposure route	1	[-]	D	
Assessment factor for dose-response relationship	1	[-]	D	
Reference-MOS, consumers, dermal (N(L)OAEL/Uptake) (carc)		1	[-]	O

DERMAL (N(L)OEC/CONC)			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for intraspecies differences	1	[-]	D
Assessment factor for differences in exposure duration	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Reference-MOS, consumers, dermal (N(L)OEC/Conc) (carc)	1	[-]	O
CARC (NON-THRESHOLD)			
ORAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Assessment factor for extrapolation to a low-risk level	2.5E+05	[-]	D
Reference-MOE, consumers, oral (non-threshold)	2.5E+05	[-]	O
INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Assessment factor for extrapolation to a low-risk level	2.5E+05	[-]	D
Reference-MOE, consumers, inhalatory (non-threshold)	2.5E+05	[-]	O
DERMAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for remaining interspecies differences	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor for dose-response relationship	1	[-]	D
Assessment factor for extrapolation to a low-risk level	2.5E+05	[-]	D
Reference-MOE, consumers, dermal (non-threshold)	2.5E+05	[-]	O
HUMAN EQUIV. DOSE			
ORAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor consumer, oral, non-threshold	1	[-]	O
Human equivalent dose consumer, oral, non-threshold	??	[mg.kg-1.d-1]	O
INHALATORY			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor consumer, inhalatory, non-threshold	1	[-]	O
Human equivalent dose consumer, inhalatory, non-threshold	??	[mg.m-3]	O
DERMAL			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor consumer, dermal, non-threshold	1	[-]	O
Human equivalent dose consumer, dermal, non-threshold	??	[mg.kg-1.d-1]	O
TOTAL EXPOSURE			
Assessment factor for allometric scaling	1	[-]	D
Assessment factor for differences in exposure route	1	[-]	D
Assessment factor consumer, total, non-threshold	1	[-]	O
Human equivalent dose consumer, total, non-threshold	??	[mg.kg-1.d-1]	O
ENVIRONMENTAL EXPOSURE			
LOCAL			
RISK CHARACTERIZATION OF [PRIVATE USE]			
WATER			
RCR for the local fresh-water compartment	11.7	[-]	O
Intermittent release	No		S
RCR for the local marine compartment	10.1	[-]	O
RCR for the local fresh-water compartment, statistical method		??	[-] O
RCR for the local marine compartment, statistical method	??	[-]	O

SEDIMENT				
RCR for the local fresh-water sediment compartment	26.6	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		S	
RCR for the local marine sediment compartment	22.9	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		O	
SOIL				
RCR for the local soil compartment	0.011	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		S	
RCR for the local soil compartment, statistical method	??	[-]	O	
STP				
RCR for the sewage treatment plant	0.0514	[-]	O	
PREDATORS				
RCR for fish-eating birds and mammals (fresh-water)	??	[-]	O	
RCR for fish-eating birds and mammals (marine)	??	[-]	O	
RCR for top predators (marine)	??	[-]	O	
RCR for worm-eating birds and mammals	??	[-]	O	
REGIONAL				
WATER				
RCR for the regional fresh-water compartment	4.68	[-]	O	
RCR for the regional marine compartment	3.07	[-]	O	
RCR for the regional fresh-water compartment, statistical method		??	[-]	O
RCR for the regional marine compartment, statistical method	??	[-]	O	
SEDIMENT				
RCR for the regional fresh-water sediment compartment	9.23	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		S	
RCR for the regional marine sediment compartment	6.15	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		O	
SOIL				
RCR for the regional soil compartment	8.7E-05	[-]	O	
Extra factor 10 applied to PEC/PNEC	No		S	
RCR for the regional soil compartment, statistical method	??	[-]	O	
HUMANS EXPOSED TO OR VIA THE ENVIRONMENTAL				
LOCAL				
RISK CHARACTERIZATION OF [PRIVATE USE]				
REPEATED DOSE				
INHALATORY				
MOS, local, inhalatory (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, local, inhalatory (repdose)	??	[-]	O	
TOTAL EXPOSURE				
MOS, local, total exposure (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, local, total exposure (repdose)	??	[-]	O	
FERTILITY				
INHALATORY				
MOS, local, inhalatory (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, local, inhalatory (fert)	??	[-]	O	
TOTAL EXPOSURE				
MOS, local, total exposure (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, local, total exposure (fert)	??	[-]	O	
MATERNAL-TOX				
INHALATORY				
MOS, local, inhalatory (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, local, inhalatory (mattox)	??	[-]	O	
TOTAL EXPOSURE				
MOS, local, total exposure (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, local, total exposure (mattox)	??	[-]	O	

DEVELOPMENT-TOX			
INHALATORY			
MOS, local, inhalatory (devtox)	??	[-]	O
Ratio MOS/Ref-MOS, local, inhalatory (devtox)	??	[-]	O
TOTAL EXPOSURE			
MOS, local, total exposure (devtox)	??	[-]	O
Ratio MOS/Ref-MOS, local, total exposure (devtox)	??	[-]	O
CARC (THRESHOLD)			
INHALATORY			
MOS, local, inhalatory (carc)	??	[-]	O
Ratio MOS/Ref-MOS, local, inhalatory (carc)	??	[-]	O
TOTAL EXPOSURE			
MOS, local, total exposure (carc)	??	[-]	O
Ratio MOS/Ref-MOS, local, total exposure (carc)	??	[-]	O
CARC (NON-THRESHOLD)			
INHALATORY			
MOE, local, inhalatory (non-threshold)	??	[-]	O
Ratio MOE/Ref-MOE, local, inhalatory (non-threshold)	??	[-]	O
TOTAL EXPOSURE			
MOE, local, total exposure (non-threshold)	??	[-]	O
Ratio MOE/Ref-MOE, local, total exposure (non-threshold)	??	[-]	O
LIFETIME CANCER RISK			
Lifetime cancer risk, local, exposure via air	??	[-]	O
Lifetime cancer risk, local, total exposure	??	[-]	O
REGIONAL			
REPEATED DOSE			
INHALATORY			
MOS, regional, inhalatory (repdose)	??	[-]	O
Ratio MOS/Ref-MOS, regional, inhalatory (repdose)	??	[-]	O
TOTAL EXPOSURE			
MOS, regional, total exposure (repdose)	??	[-]	O
Ratio MOS/Ref-MOS, regional, total exposure (repdose)	??	[-]	O
FERTILITY			
INHALATORY			
MOS, regional, inhalatory (fert)	??	[-]	O
Ratio MOS/Ref-MOS, regional, inhalatory (fert)	??	[-]	O
TOTAL EXPOSURE			
MOS, regional, total exposure (fert)	??	[-]	O
Ratio MOS/Ref-MOS, regional, total exposure (fert)	??	[-]	O
MATERNAL-TOX			
INHALATORY			
MOS, regional, inhalatory (mattox)	??	[-]	O
Ratio MOS/Ref-MOS, regional, inhalatory (mattox)	??	[-]	O
TOTAL EXPOSURE			
MOS, regional, total exposure (mattox)	??	[-]	O
Ratio MOS/Ref-MOS, regional, total exposure (mattox)	??	[-]	O
DEVELOPMENT-TOX			
INHALATORY			
MOS, regional, inhalatory (devtox)	??	[-]	O
Ratio MOS/Ref-MOS, regional, inhalatory (devtox)	??	[-]	O
TOTAL EXPOSURE			
MOS, regional, total exposure (devtox)	??	[-]	O
Ratio MOS/Ref-MOS, regional, total exposure (devtox)	??	[-]	O

CARC (THRESHOLD)
INHALATORY

MOS, regional, inhalatory (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, regional, inhalatory (carc)	??	[-]	O	

TOTAL EXPOSURE

MOS, regional, total exposure (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, regional, total exposure (carc)	??	[-]	O	

CARC (NON-THRESHOLD)
INHALATORY

MOE, regional, inhalatory (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, regional, inhalatory (non-threshold)	??	[-]	O	

TOTAL EXPOSURE

MOE, regional, total exposure (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, regional, total exposure (non-threshold)		??	[-]	O

LIFETIME CANCER RISK

Lifetime cancer risk, regional, exposure via air	??	[-]	O	
Lifetime cancer risk, regional, total exposure	??	[-]	O	

CONSUMER EXPOSURE
SCENARIO 1 :
ACUTE
ORAL

MOS, consumers, oral (acute)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (acute)	??	[-]	O	

INHALATORY

MOS, consumers, inhalatory (acute)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (acute)	??	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

MOS, consumers, dermal (N(L)OAEL/Uptake) (acute)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (acute)		??	[-]	O

DERMAL (N(L)OEC/CONC)

MOS, consumers, dermal (N(L)OEC/Conc) (acute)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (acute)		??	[-]	O

TOTAL EXPOSURE

MOS, consumers, total exposure (acute)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (acute)	??	[-]	O	

REPEATED DOSE
ORAL (N(L)OAEL/ING.RATE)

MOS, consumers, oral (N(L)OAEL/Ing.rate) (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OAEL/Ing.rate) (repdose)		??	[-]	O

ORAL (N(L)OEC/CONC)

MOS, consumers, oral (N(L)OEC/Conc) (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OEC/Conc) (repdose)		??	[-]	O

INHALATORY

MOS, consumers, inhalatory (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (repdose)	??	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

MOS, consumers, dermal (N(L)OAEL/Uptake) (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (repdose)		??	[-]	O

DERMAL (N(L)OEC/CONC)

MOS, consumers, dermal (N(L)OEC/Conc) (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (repdose)		??	[-]	O

TOTAL EXPOSURE

MOS, consumers, total exposure (repdose)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (repdose)	??	[-]	O	

FERTILITY
ORAL (N(L)OAEL/ING.RATE)

MOS, consumers, oral (N(L)OAEL/Ing.rate) (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OAEL/Ing.rate) (fert)		??	[-]	O

ORAL (N(L)OEC/CONC)

MOS, consumers, oral (N(L)OEC/Conc) (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OEC/Conc) (fert)		??	[-]	O

INHALATORY

MOS, consumers, inhalatory (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (fert)	??	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

MOS, consumers, dermal (N(L)OAEL/Uptake) (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (fert)		??	[-]	O

DERMAL (N(L)OEC/CONC)

MOS, consumers, dermal (N(L)OEC/Conc) (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (fert)		??	[-]	O

TOTAL EXPOSURE

MOS, consumers, total exposure (fert)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (fert)	??	[-]	O	

MATERNAL-TOX
ORAL (N(L)OAEL/ING.RATE)

MOS, consumers, oral (N(L)OAEL/Ing.rate) (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OAEL/Ing.rate) (mattox)		??	[-]	O

ORAL (N(L)OEC/CONC)

MOS, consumers, oral (N(L)OEC/Conc) (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OEC/Conc) (mattox)		??	[-]	O

INHALATORY

MOS, consumers, inhalatory (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (mattox)	??	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

MOS, consumers, dermal (N(L)OAEL/Uptake) (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (mattox)		??	[-]	O

DERMAL (N(L)OEC/CONC)

MOS, consumers, dermal (N(L)OEC/Conc) (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (mattox)		??	[-]	O

TOTAL EXPOSURE

MOS, consumers, total exposure (mattox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (mattox)	??	[-]	O	

DEVELOPMENT-TOX
ORAL (N(L)OAEL/ING.RATE)

MOS, consumers, oral (N(L)OAEL/Ing.rate) (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OAEL/Ing.rate) (devtox)		??	[-]	O

ORAL (N(L)OEC/CONC)

MOS, consumers, oral (N(L)OEC/Conc) (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OEC/Conc) (devtox)		??	[-]	O

INHALATORY

MOS, consumers, inhalatory (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (devtox)	??	[-]	O	

DERMAL (N(L)OAEL/UPTAKE)

MOS, consumers, dermal (N(L)OAEL/Uptake) (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (devtox)		??	[-]	O

DERMAL (N(L)OEC/CONC)				
MOS, consumers, dermal (N(L)OEC/Conc) (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (devtox)		??	[-]	O
TOTAL EXPOSURE				
MOS, consumers, total exposure (devtox)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (devtox)	??	[-]	O	
CARC (THRESHOLD)				
ORAL (N(L)OAEL/ING.RATE)				
MOS, consumers, oral (N(L)OAEL/Ing.rate) (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OAEL/Ing.rate) (carc)		??	[-]	O
ORAL (N(L)OEC/CONC)				
MOS, consumers, oral (N(L)OEC/Conc) (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, oral (N(L)OEC/Conc) (carc)		??	[-]	O
INHALATORY				
MOS, consumers, inhalatory (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, inhalatory (carc)	??	[-]	O	
DERMAL (N(L)OAEL/UPTAKE)				
MOS, consumers, dermal (N(L)OAEL/Uptake) (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OAEL/Uptake) (carc)		??	[-]	O
DERMAL (N(L)OEC/CONC)				
MOS, consumers, dermal (N(L)OEC/Conc) (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, dermal (N(L)OEC/Conc) (carc)		??	[-]	O
TOTAL EXPOSURE				
MOS, consumers, total exposure (carc)	??	[-]	O	
Ratio MOS/Ref-MOS, consumers, total exposure (carc)	??	[-]	O	
CARC (NON-THRESHOLD)				
ORAL				
MOE, consumers, oral (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, consumers, oral (non-threshold)	??	[-]	O	
INHALATORY				
MOE, consumers, inhalatory (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, consumers, inhalatory (non-threshold)	??	[-]	O	
DERMAL				
MOE, consumers, dermal (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, consumers, dermal (non-threshold)	??	[-]	O	
TOTAL EXPOSURE				
MOE, consumers, total exposure (non-threshold)	??	[-]	O	
Ratio MOE/Ref-MOE, consumers, total exposure (non-threshold)		??	[-]	O
LIFETIME CANCER RISK				
Lifetime cancer risk, consumer, oral	??	[-]	O	
Lifetime cancer risk, consumer, inhalatory	??	[-]	O	
Lifetime cancer risk, consumer, dermal	??	[-]	O	
Lifetime cancer risk, consumer, total exposure	??	[-]	O	