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ENVIRONMENTAL PROTECTION

Proposal of Environmental Quality Standards for Plant Protection Products

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1 Introduction

In October 2000, the Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy or, in short, the **EU Water Framework Directive** (WFD) was adopted. The Directive entered into force in December 2000 and this directive has been implemented to Finnish legislation in 2004 (2004/1299).

The purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater by promoting sustainable water use and aiming at enhanced protection and improvement of the aquatic environment, through specific measures for the progressive reduction of discharges of priority substances and the cessation or phasing-out of discharges of priority hazardous substances.

The WFD (article 16) sets out the strategy against chemical pollution of bodies of surface waters. The chemical status assessment is used alongside the ecological status assessment to determine the overall quality of a water body. Member States shall protect their water bodies, with the aim of achieving good ecological potential and good surface water chemical status at the latest in the year 2015.

Environmental Quality Standards (EQSs) are used for assessing the chemical status of water bodies. The EQS Directive 2008/105/EC establishes the maximum acceptable concentration and/or annual average concentration for 33 priority substances and 8 other pollutants which, if not exceeded, allows the chemical status of the water body to be described as 'good'.

EQSs for the 33 substances identified by the EU as Priority Substances (PSs) and Priority Hazardous Substances (PHSs) have been derived at a European level and apply to all Member States. They are also referred to as Annex X substances of the WFD. In addition, the WFD (Annex V, section 1.2.6) establishes the principles to be applied by the Member States to develop EQSs for specific pollutants that are 'discharged in significant quantities'. These are also known as Annex VIII substances of the WFD.

In 2005 a Proposal for Environmental Quality Standards in Finland has been published (Londesborough 2005). This proposal included EQS values for 14 industrial chemicals and for 6 active substances in plant protection products. These six active substances are dimethoate, mancozeb and its metabolite ETU (ethylenethiourea), MCPA, metamitron, tribenuronmethyl and prochloraz. These values have been included in the national legislation by the implementation of the EQS Directive 2008/105/EC in Finland (update 868/2010; mancozeb not included due to rapid degradation). The EQS for ground waters have been established by implementing the directive (2006/118/EC) in which all the EQS values for active substances were set to 0.1 µg/l.

In this publication the principles of calculating EQS values for all active substances of plant protection products on the market at present have been presented. These substances have been selected since they are deliberately toxic and are intentionally released into the environment. They are therefore evaluated as part of

the implementation of the WFD. Moreover, the values support the implementation of the Framework Directive (2009/128/EC) on Sustainable Use of Pesticides. This directive necessitates that the amount and risks of plant protection products used should be decreased. Additionally, national screening and monitoring programs should be organised to verify that the actions taken according to National Action Plans are sufficient for the aim of the directive. The Ministry of Argiculture and Forestry is currently implementing the directive 2009/128/EC by preparing the first National Action Plans (NAPs) for sustainable use of plant protection products. One of the goals of the NAPs is to set the EQS values according to the WFD for all active substances on the market at present in Finland and to compare them with monitoring data. The Finnish Environment Institute is presenting here a suggestion for the preliminary EQS values. These EQS values are considered as preliminary since they are calculated based only on the data submitted by the applicants. For definite EQS values a comprehensive literature search should be performed and the results used to support the EQS derivation. At the present these preliminary EQS values are seen sufficient for the implementation of the Framework Directive on Sustainable Use of Pesticides. However, for their implementation to the EQS Directive 2008/105/EC under the WFD during the updating of the directive a further literature search of scientific publications should be conducted.

Chemical pollution can be both short and long term in the environment, and therefore data on acute as well as chronic effects should be used as the basis for establishing the EQSs. In order to ensure that the aquatic environment and top predators are adequately protected, EQSs expressed as an annual average value (AA-QS) should be established to protect from long-term exposure, and maximum acceptable concentrations (MAC-QS) should be established to counteract short-term exposure (2008/105/EC). No observed effect concentrations (NOECs) or 10 % effective concentrations (EC10s) obtained from ecotoxicological studies are used for protection against the long term effects and LC/EC_{50} values for protection against peak concentrations.

The following chapters describe the principles of deriving preliminary EQS values for active substances of plant protection products in Finland. In chapter 2 data collection, management and validation are discussed. In chapter 3 a general presentation on the methods used for deriving preliminary EQS values is given. Chapter 4 explains how the preliminary specific EQS values relating to different protection objectives (e.g. water, sediment biota, top predators) have been derived. The actual calculation of the preliminary EQS for all active substances on the market at present has been performed. The derived EQS values are presented in substance specific fact sheets (Annex V 1-111).

There are several active substances on the market having both biocidal and plant protection uses. Until the proposed preliminary EQS values are implemented into Finnish legislation by updating the Government Decree on Substances Dangerous and Harmful to the Aquatic Environment 1022/2006 (update 868/2010) also the possible additional data of biocidal active substances need to be considered.

2 Data collection, management and validation

2.1

General

The EU technical guidance for deriving environmental quality standards (TGD 2010) was used in setting proposals for the preliminary EQSs for active substances of plant protection products. The preliminary EQS values are derived based on experimental ecotoxicological data. Analytical limitations are not taken into account when deriving the quality standards. Analytical limitations must be considered though when planning the screening and monitoring of the substances. Therefore, a list of active substances or metabolites that have AA-QS or MAC-QS values below the limit of quantification presented in EU reports and/or given by the national analytical laboratory (Ramboll Analytics Oy) used in national screening programs are reported in chapter 5 dealing with overall EQS values. If EQS values are below achievable detection limits, different approaches must be considered. According to Article 3 of the EQS Directive quality standards shall apply to contaminant concentrations in water, sediments and/or biota. For all substances an EQS value referring to the water phase is derived. An assessment for other compartments is needed when a substance could pose a risk to predators through the food chain, or to benthic i.e. sediment-dwelling organisms. In other words, an EQS is not required if a substance will not pose a risk to top predators or sediment dwelling organisms.

The preliminary EQS values set a limit for the annual average concentration in the water phase (AA-QS) based on chronic toxicity data. In addition maximum acceptable concentration (MAC-QS) values have been derived based on acute toxicity data. If also an assessment based on secondary poisoning (QS_{biota}) was performed, it was calculated back to the corresponding water concentration and the value was also used in the selection of an overall preliminary EQS as explained in more detail in chapter 5. Corresponding preliminary EQS values for the protection of the Baltic Sea have also been calculated. Preliminary sediment EQSs were dealt independently and were not taken into consideration when selecting an overall AA-QS value. Standards for protecting human health based on drinking water or consumption of fisheries products, as introduced by the TGD (2010), were not derived and therefore not used in setting an overall AA-QS value. However, the acceptable daily intake (ADI) values set for the active substances, on which the human food standard calculation is based on, were collected from the source data for possible further use.

When deriving the preliminary EQS values for active substances of plant protection products, it should be taken into account that the principals differ from the directive on placing the plant protection products on the market (91/414/EEC). According to this directive recovery from impacts is allowed and NOAEC (no observed adverse effect concentration) values are used in risk assessment. This is not allowed in the WFD (TGD 2010). Therefore, NOEC values were set on the concentrations where actually no effect has been observed during the study. This applies especially for the higher tier studies e.g. micro- or mesocosm studies.

2.2

Collection

Data has been collected only from the studies provided by the applicant for their specific active substances for authorization at the EU-level. Therefore the data sources for preliminary EQS calculations have been the original draft assessment reports (DARs) and addendums to them along with EFSA conclusion reports and/or Commission review reports of the active substances. The original DARs are not publicly available but the more extensive conclusion reports for many of the active substances are available at the EFSA homepage and the review reports for all active substances at the Commission homepage, as listed below.

- The EFSA conclusions: http://www.efsa.europa.eu/en/scdocs.htm
- The Commission review reports in the EU Pesticides database: http://ec.europa.eu/sanco_pesticides/public/index.cfm

The ecotoxicological studies published in scientific literature were intentionally left outside the scope of this project, since the purity profiles of the active substances are lacking in the scientific publications. This is the principle followed in the EU evaluation procedure at present. The impurity profile may have, at least in some cases, a significant role in the toxicity of some active substances. The TGD (2010) however states that EQS values cannot be based only on the studies submitted by the applicant but should be supplemented by other ecotoxicological data where they are available, and the studies also meet quality criteria. Therefore the EQS values derived in this project are called as preliminary EQS values.

2.3

Management

The source data was based on results from the ecotoxicological studies listed below, and following general decisions concerning the data were made. First of all, for plant protection products tests conducted on the active substance were preferred. Test results on formulations have only been used when tests on the active substance were lacking. Secondly, according to the TGD (2010) if multiple data were available for the same species and endpoint, a geometric mean of these values should be used. However, since the EFSA conclusion report or the Commission review report normally only report the lowest end point, this was used as such and no further investigation were performed in original DARs. This approach was justified based on the rareness of cases in which the same species has been tested in more than one toxicity study. The use of the lowest end point is also a worst case approach.

Thirdly, an active substance having a half-life (DT_{50}) of less than two days in water and in sediment was regarded as quickly degrading. Quickly degrading substances do normally not pose a long-term threat. Thus, for these substances AA-QS values were set for the major metabolites if they were more stable in the environment than the parent compound (see Table 1). Additionally, MAC-QS values were set for the active substances to protect from short term exposure. However, a MAC-QS is not justified, if a substance exerts only sublethal, chronic effects. Thus, no MAC values were set for insect growth regulators (see Chapter 3, special cases).

Table 1. Substances with DT50 value less than 2 days and their stable metabolites

Active substance	Metabolites	Fact Sheet number
bifenatsate	D3598 & D9472	9
bromoxynil octanoate	bromoxynil	12
carfendazone ethyl	chloropropionic acid	13
daminozide	formaldehyde	24
fenoxaprop-P-ethyl	fenoxaprop-P	41
kresoxim-methyl	BF490-1	58
mancozeb	ETU	62
maneb	ETU	62
propaquizafop	quizalofop acid	81
protioconazole	prothioconazole-S-methyl & prothioconazole-desthio	85
pyridate	CL9673	88
quizalofop-P-ethyl	quizalofop acid	81
thiophanate-methyl	carbendazim	99
trifloxystrobin	CGA 321113 & CGA 357261	106

Amongst short-lived substances there are also some, which have a metabolite as toxic than the parent compound, e.g. when the metabolite is the actual active substance e.g. bromoxynil octanoate, ioxynil octanoate, propaquizafop, quizalofop-P-ethyl, thiophanate-methyl, and trinexapac-ethyl.

There were some active substances that were either readily biodegradable or natural substances for which it was considered not to be sensible to derive EQS values. These substances were acetic acid, aluminium phosphide, benzoic acid, blood meal, ferric phosphate, pelargonic acid, rape seed oil, and urea.

AA-QS values are based on chronic data and MAC-QS values on acute data on aquatic water organisms. The QS_{biota} values are based on the short or long term toxicity data on mammals or reproduction toxicity data on birds. In setting the QS_{biota} value the bioaccumulation potential of the active substance is also taken into account. The $QS_{sediment}$ values are based on the chronic toxicity data for sediment dwelling organisms. In case only a spiked water test was available, the adsorption of the active substance to the sediment was used for the calculation of the $QS_{sediment}$. International guidelines exist for performing fate and toxicity studies for many species. If such protocols are followed and the requirements for the study are met, the results from such studies are generally reliable. The directive for plant protection products (91/414/ECC) requires that the fate and eco/toxicological studies should follow international guidelines. The most frequently used guidelines are summarized below with the representation of the main end points. The tested species are listed in Annex IV.

Fate and adsorption tests

- OECD Guideline 307: Aerobic and Anaerobic Transformation in Soil. The test substance and transformation product concentrations in soil should be analyzed at every sampling time. The recorded endpoints are DT_{50} and DT_{90} values.
- OECD Guideline 308: Aerobic and Anaerobic Transformation in Aquatic Sediment Systems. The test substance and transformation product concentrations in water and sediment should be analyzed at every sampling time. The recorded endpoints are DT_{50} and DT_{90} values.
- OECD Guideline 106: Adsorption -- Desorption Using a Batch Equilibrium Method. The goal is to obtain a sorption value (log K_{OC}) which can be used to predict partitioning under a variety of soil characteristics (organic carbon, clay content, soil texture, and pH). The recorded endpoints are the K_{OC} values for

different soils. Since Finnish soils and sediments are mostly rather acidic, the dependence of logKoc on pH was taken into account.

Chronic toxicity tests for AA-QS setting (water phase):

- OECD Guidelines 215: Fish Juvenile Growth Test. For the derivation of AA-QS for water, only the NOEC from this 21-28 days long chronic toxicity study was considered. The recorded endpoint is the effect on growth.
- OECD guideline 210: Fish Early-life Stage Toxicity Test. This test covers the life cycle of fish from eggs to free feeding juvenile fish. For the derivation of AA-QS for water, the recorded endpoints are NOEC for mortality at all stages, time to hatch, hatching success, length, weight and any morphological or behavioral abnormalities. Duration of test depends on the tested fish species.
- OECD guideline 211: *Daphnia magna* Reproduction Test. For the derivation of AA-QS for water, the most important endpoint is NOEC on the number of young per female. Other endpoints are NOEC on the survival of the parent animals and time to production of first brood. Additionally, parameter such as growth (e.g. length) of the parent animals is a useful endpoint.
- OECD Guideline 201: Algae Growth Inhibition Test. For the derivation of AA-QS for water, only the NOEC from this 72 h toxicity study was considered. A decision was made that studies lasting 96 h or 120 h could also be used if the algae had been in exponential growth rate during the study period. Studies accepted as valid in the DARs were considered having been such. The recorded endpoint is inhibition in the growth rate. The NOEC for the biomass was used only if the NOEC for the growth rate had not been reported.
- OECD Guidelines 221: *Lemna* sp. Growth Inhibition Test. For the derivation of AA-QS for water, only the NOEC on growth rate (based on frond number) or biomass (dry weight, fresh weight or frond area) from this 7 or 14 day long toxicity study was considered.
- Micro- or Mesocosm studies regarded as valid in the DARs were taken into account. Following guidelines exist but may not always be those which have been followed:
- Guidance Document on Higher Tier Aquatic Risk Assessment for Pesticides (HARAP) (Campbell et al. 1999).
- Guidance for Summarizing and Evaluating Aquatic Micro- and Mesocosm studies (de Jong et al. 2008). The recorded endpoint is NOEC for populations and/or community.

Acute toxicity tests for MAC-QS setting (water phase):

- OECD guideline 203: Fish Acute Toxicity Test. For the derivation of MAC-QS for water, only the LC_{50} from this 96 h acute toxicity study was considered. The recorded endpoint is mortality.
- OECD guideline 202: *Daphnia* sp. Acute Immobilisation Test. For the derivation of MAC-QS for water, only the EC_{50} from this 48 h acute toxicity study was considered. The recorded endpoint is immobility.
- OECD Guideline 201: Algae Growth Inhibition Test. For the derivation of MAC-QS for water, only the EC_{50} from this study was considered. Mainly the same test, which had given the lowest NOEC for the AA-QS assessment, was used here.
- OECD Guidelines 221: *Lemna* sp. Growth Inhibition Test. For the derivation of MAC-QS for water, only the EC_{50} from this study was considered. Usually only one *Lemna* test was available and thus this value was from the same study as the NOEC used for the AA-QS assessment.

Toxicity tests for QS_{biota} (secondary poisoning of top predators):
The most important study to indicate secondary poisoning is bioaccumulation in fish. Other listed studies are also used in determining if a substance has bioaccumulation potential or is highly toxic to birds and mammals.

- OECD Guideline 305: Bioconcentration: Flow-through Fish Test. The recorded endpoint is the possible bioconcentration factor (BCF) at apparent steady-state, expressed as a function of the total wet weight of the fish.
- OECD Guideline 123: Partition Coefficient (1-octanol/water): Slow-Stirring Method. The recorded endpoints are the $logP_{OW}$ values. These values should be given in different pH values for dissociating compounds.
- SETAC Guideline: Avian Acute Toxicity Test. The recorded endpoint is LD_{50} of mortality. A decision was made that the trigger value for high intrinsic toxicity to birds was set at < 10 mg/kg bw (Nikunen 1993).
- OECD guideline 401: Acute Oral Toxicity. The recorded endpoint is LD_{50} of mortality in mammals. A decision was made that the trigger value for high intrinsic toxicity to mammals was set at < 25 mg/kg bw (Nikunen 1993).

If the criteria for bioaccumulation or intrinsic toxicity to birds and mammals were met, results from following tests were used for the setting of a QS_{biota} (secondary poisoning of top predators). In addition to the reproduction test on birds, OECD has a series of guidelines of toxicity tests with mammals for use in human health risk assessment. These data can also be used provided that the test endpoints relate to the effects at the population level of the species. The tests listed below are most important in this respect.

- OECD guideline 206: Avian Reproduction Test. For the derivation of a QS_{biota}, only the NOEC from this test with exposure duration of at least 20 weeks is considered. Mortality of adults, egg production, cracked eggs, egg shell thickness (at least two eggs from each pen), viability, hatchability and effects on young birds are observed during the study.
- OECD guideline 407: Repeated Dose 28-day Oral Toxicity Study in Rodents. For the derivation of QS_{biota}, only the NOAEL from this 28-day test is considered. The recorded endpoints are results from clinical and functional observations, body weight and food or water consumption measurements, hematology and clinical biochemistry, as well as gross necropsy and histopathology.
- OECD guideline 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents. For the derivation of QS_{biota}, only the NOAEL from this 90-day test is considered. The recorded endpoints are measurements on weight (at least once a week), food and water consumption, and detailed daily observations (ophtalmological examination, haematology, clinical biochemistry and urinalysis), as well as gross necropsy and histopathology.
- OECD guideline 409: Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents. Similar test with the OECD guideline 408 described above.
- OECD guideline 414: Prenatal Development Toxicity Study. For the derivation of QS_{biota}, only the NOAEL from this 15-day test (rodents) or 18-day test (non-rodent) is considered. The recorded endpoints are changes in soft tissue and skeletal of foetuses.
- OECD guideline 415: One-Generation Reproduction Toxicity Study. For the derivation of QS_{biota}, only the NOAEL from this study is considered. The findings should be evaluated in terms of the observed effects, necropsy and microscopic findings. A properly conducted reproduction test should provide a satisfactory estimation of a NOAEL and an understanding of adverse effects on reproduction, parturition, lactation and postnatal growth.

- OECD guideline 416: Two-Generation Reproduction Toxicity. For the derivation of QS_{biota}, only the NOAEL from this study is considered. The findings should be evaluated in terms of the observed effects including necropsy and microscopic findings. A properly conducted reproductive toxicity test should provide a satisfactory estimation of a NOAEL and an understanding of adverse effects on reproduction, parturition, lactation, and postnatal development including growth and sexual development.
- OECD Guidelines 453: Combined Chronic Toxicity/Carcinogenicity Studies. The rat is typically used for this study. The results should include: measurements (weighing) and regular detailed observations (haematological examination, urinalysis, clinical chemistry), as well as necropsy procedures and histopathology. All these observations permit to set the NOAEL value based on the detection of neoplastic effects and a determination of carcinogenic potential as well as the general toxicity. The period of dosing and duration of the study is normally 12 months for the chronic phase, and 24 months for the carcinogenicity phase.

Toxicity tests for $EQS_{sediment}$:

- OECD guideline 218: Sediment-Water Chironomid Toxicity Test Using Spiked Sediment. This is a chronic toxicity study with a chironomid species. For the determination of $EQS_{sediment}$, the NOEC for the total number of adults emerged and the time to emergence is derived. Additionally, NOEC on larval survival and growth after a ten-day period are recommended endpoints.
- OECD guideline 219: Sediment-Water Chironomid Toxicity Test Using Spiked Water. This test is similar to OECD guideline 218. However, for reasons of stability of the test concentrations, the OECD 218 is preferred. If a test with spiked water is available this test should always be accompanied by a determination of actual concentrations in the sediment. However, this was usually not the case. The sediment concentrations (mg/kg org C) were estimated from the water concentrations (mg/l) and adsorption coefficients (K_{OC}).
- OECD guideline 220: Enchytraeid Reproduction Test. The 14-day range finding test from this guideline, in which mortality is recorded, is an acute test. The definitive test that lasts 6 weeks is a chronic test. For the determination of $EQS_{sediment}$, the NOEC on the number of offspring is used as well as the mortality of the parent animals (which are only exposed for three weeks and are thereafter removed from the system).
- EPA. Ecological Effects Test Guidelines. OPPTS 850.1735. Whole sediment acute toxicity invertebrates, freshwater. Draft, 1996. This test can be used as a chronic test for species such as *Hyalella azteca*.

2.4

Validation

Plant protection products currently on the EU market have been reviewed under the Plant Protection Products Directive (91/414/EEC). For the authorization of a substance the respective notifiers have provided a dossier including all the data required under the directive. The dossier includes also an assessment of all ecotoxicity data. The data is peer-reviewed by EFSA and Member State competent authorities, they usually follow standard (OECD) test methods, and are performed to GLP, thus the studies can be considered valid as such. If several studies of equal quality were available from different species, the lowest endpoint value was used.

3 Methodology

3.1 Assessment factor approach

3.1.1 General

EQS values are derived to ensure an overall protection of the environment, if not exceeded. The guidelines for setting the EQSs are presented in the TGD (2010) in detail. Long term EQS values are based on NOEC or in few cases on EC10 values obtained from the available data. Short term standards (MAC-QSs) are based on LC/EC_{50} values. For substances with small datasets, the deterministic approach or so called assessment factor method is the only realistic option for calculating the EQSs, because the data requirements of the species sensitivity distribution method (SSD, see chapter 3.2 in TGD 2010) are not met. Assessment factors (AFs) are used to take into account uncertainties such as inter- and intra-species variation and extrapolation from the laboratory to the field. The lowest relevant endpoint is divided by an AF.

The quantity and type of data available, i.e. the confidence with which a NOEC or LC/EC50 value can be derived from the available data, determines the AF to be used. This confidence increases if data are available on the toxicity to organisms at a number of different trophic levels, taxonomic groups and with lifestyles representing various feeding strategies. Thus, lower AFs can be used with larger and more relevant datasets. The AF applied for fresh water AA-QS varies from 1 to 1000 (Table 3-2, TGD 2010) depending on the data set available. For the Baltic Sea the AF for AA-QS varies between 10 and 10 000 (Table 3-3, TGD 2010). This is justified by the need to account for the additional uncertainties associated with extrapolation to the marine ecosystem, especially the general under-representation in the experimental dataset of specific marine key taxa and possibly greater species diversity. For the MAC-QS an AF from 10 to 100 is used for the freshwater assessment (Table 3-4, TGD 2010) and an AF from 10 to 1000 for the Baltic Sea assessment (Table 3-5, TGD 2010). For a biota standard the AF lies between 30 and 300 (Table 4-2, TGD 2010) and for a sediment standard between 10 and 100 (Table 5-1, TGD 2010). The derivation of all standards is described more specifically in chapter 4.

3.1.2 Special cases

Insect growth regulators, which affect normally the juvenile stages, have larger data requirements. For these substances *Daphnia* is not necessarily the most sensitive species, as they act specifically via the metamorphosis of insects. These substances should be tested on insects when the toxicity to *Daphnia* is low (i.e. 48 h EC_{50} > 1 mg/l

or 21 d NOEC > 0.1 mg/l). Therefore, if normally acute and chronic data for algae, *Daphnia*, and fish are sufficient for an assessment factor of 10 to be used, additional information on insects is regarded necessary for these substances. According to the Commission guidance document on aquatic ecotoxicology, a long term test on *Chironomus* sp. should be performed in this case (Sanco 2002).

For insect growth regulators acute data cannot be used for derivation of the MAC-QS, because the test duration is too short to detect delayed effects of a single exposure peak if the tested life stage of the test organism is not the most sensitive. It is recommended, that for compounds with a high acute to chronic ratio (i.e. substances much more toxic in the long term), the chronic data should be consulted to cover possible delayed effects resulting from a single peak. The only insect growth regulator on the Finnish market at present is diflubenzuron.

If there are indications of adverse effects via endocrine activity, e.g. from bioassays, or other specific effects that have not been adequately reflected in bird, mammal or fish studies used to derive the NOEC and NOAEL values, an additional assessment factor may be considered to cover the anticipated effects. However, endocrine disruptive effects have not separately been investigated in this work, but the lowest NOEC or NOAEL value has always been used.

3.2

Statistical extrapolation approach – species sensitivity distribution

The occurrence of applying species sensitivity distributions (SDD) in the setting of EQSs for plant protection products is rare, because it requires a large set of data. For no active substance there was enough chronic data to apply the SSD method to the AA-QS derivation. Enough data was available only for the derivation of a MAC-QS for the active substance chlorothalonil. However, the main aspects concerning the use of this method are summarized below.

SSD analysis is a probabilistic method in which all reliable toxicity data are log-transformed, ranked and fitted to a distribution function, from which normally the 5th percentile (often referred to as the HC5) is used as the basis for an EQS. It should always be tested statistically, if the available data fits to any available distribution. If this is not the case, the SSD approach should not be used.

For deriving AA-QS values the input data for the SSD analysis should be of high quality and represent the community of interest both statistically and ecologically. Since the scope of protection of the WFD is rather broad, an SSD analysis is considered reliable only, if data from at least 10 species, preferably more than 15, is available and covers 8 taxonomic groups from several phyla at minimum. An SSD analysis explicitly takes into account inter-species variation in sensitivity, but the HC5 is divided by a further AF to account for residual uncertainties. An AF of 5 is used by default for an AA-QS value.

Based on the same assumptions SSD method can be used for the Baltic Sea AA-QS setting. For an assessment on coastal and territorial waters information on at least two additional marine taxonomic groups other than fish, crustaceans and algae is required for AF of 5. Should this not be the case, an additional AF is used to account for uncertainty resulting from the marine ecosystems being more diverse but less studied. If one marine species has been tested, the additional AF is 5, if none has been tested, it is 10.

For the MAC-QS acute LC/EC50 data are the appropriate input data. The resulting HC5 refers to a 50% effect concentration for 5% of the species, because the inputs of

the SSD are L/EC50 values. An AF is therefore needed to extrapolate to the MAC-QS to account for the effects to no-effects extrapolation. This AF should normally be 10, unless other lines of evidence exists (TGD 2010, Chapter 2.9). For chlorothalonil an AF of 10 was applied to the given HC5.

For the Baltic Sea MAC-QS setting, the AF of 100 is applied when there are no additional marine taxonomic groups in the dataset. If additional typically marine taxonomic groups other than fish, crustaceans and algae have been tested the AF can be lowered. This was the case for chlorothalonil, where an AF of 50 was used.

4 Specific quality standards

4.1

Preliminary annual average EQS for the freshwater pelagic community (AA-QS)

An assessment to protect the freshwater pelagic community was always undertaken. However, no AA-QS values were derived for short-lived substances (DT50 < 2 days). Data on freshwater and saltwater species was combined, since the amount of data was too small to allow statistical analysis for comparison of sensitivity. The pooled data was used for both freshwater and saltwater standard derivation. In general, the AA-QS value is very simple to derive. It is based on NOEC values of chronic ecotoxicology studies. The base set data include fish, *Daphnia* and algae. Information on the most susceptible group of organisms is considered necessary. Thus, in the case of a herbicide, data on both algae and higher plants is crucial, and insecticides cannot be evaluated with confidence if data on insect taxa is missing. If a NOEC value is not given, the assessment factor (AF) must be raised. The NOEC value was missing in case of few algae and plant studies. However, if it was possible to judge from the acute endpoints (L/EC_{50}) that the missing chronic value would not be lower than the available values, an AF of 10 was used (TGD p. 47, footnote d). This was only the case for the active substance dimetomorph. In the cases of 2,4-D, iodosulfuron-methyl-sodium, and thifensulfuron-methyl NOEC values for algae were not available. However, since the herbicides had been tested on *Lemna*, and as Lemna was acutely more sensitive, the NOEC from that test was considered adequate.

The lowest long-term NOEC or EC_{10} was divided by the AF. For plant protection products chronic tests for organisms representing three different trophic levels had almost always been conducted, and either NOEC or EC_{10} values were given. Fish, *Daphnia* and algae were nearly always represented, and often *Lemna* and *Chrinonomus* were tested, too. Additionally some insect taxa or marine organisms had sometimes been studied. Cyanobacteria were regarded as algae. Thus, according to the TGD (2010), the AF used for deriving an AA-QS value was 10, except in some rare cases where the base set was not complete.

If enough data is presented to allow for a SSD analysis, it should always be conducted. However, the data requirements are such, that this was not the case for any active substance.

Simulated ecosystem studies, such as micro- or mesocosm experiments, are considered valuable, since they assess the impact of a substance to the whole community. If such a study had been conducted and regarded valid in the respective DAR, the lowest NOEC, whether for the whole community or for a single group only, was used to calculate the AA-QS using an AF of 5. Only those mesocosm studies were used that did not include fish, since in HARAP guidance (1998) it is stated that inclusion of fish is not generally recommended since fish tend to have an unnaturally great

influence on the rest of the system. However, should fish be the most sensitive group of organisms, they will have to be considered and thus mesocosm studies without fish are not appropriate.

The lowest value derived, whether based on a laboratory study, a simulated ecosystem experiment or an SSD analysis, was set as the AA-QS in order to protect also the most vulnerable species.

Results from laboratory tests refer always to dissolved concentrations since the test systems usually do not contain suspended particulate matter (SPM) as natural ecosystems do. For most substances, total and dissolved concentrations are more or less equal. According to the TGD, the fraction bound to SPM in the environment is likely to be significant only for very hydrophobic substances having a log K_{OW} above 6 or a log K_{OC} above five (TGD p. 91). This was the case only for alpha-cypermethrin, cypermethrin, beta-cyfluthrin, deltamethrin, diquat, fludioxonil and ioxynil-octanoate. Therefore, all EQS values are derived from test results based on dissolved concentrations and SPM as a possible carrier is not taken into account.

4.2

Preliminary annual average EQS for the Baltic Sea pelagic community (AA-$QS_{BalticSea}$)

A separate assessment for the Baltic Sea was also conducted, since it represents a fragile ecosystem. Although the Baltic Sea is a brackish water body, it was considered to be a marine ecosystem (TGD p. 17). Due to the under-representation of typically marine species in the toxicity tests and the possibly higher species diversity of marine ecosystems, higher AF values are used in the marine EQS assessment (TGD p. 58). Again, for plant protection products chronic data on three species representing three trophic levels was always present, in which case the AF was 100 i.e. the AA-QS for freshwater could be divided by 10.

Data from studies with marine test organisms other than algae, crustaceans, and fish can be accepted as additional marine taxonomic groups and will allow a reduction in the AF applied. In addition, marine organisms that belong to the taxa algae, crustaceans or fish but have a different life form or feeding strategy than the representatives in the freshwater toxicity dataset can be considered additional marine taxonomic groups and may also allow a reduction of the AF. The most often tested marine species was the eastern oyster, *Crassostrea virginica*. This species and another marine mollusk, the quanog, *Mercenaria mercenaria*, were considered to be the only marine species allowing for a reduction of the AF. Other marine species represented in the source data were either fish, crustacean or algae. None of their life form or feeding strategy differed significantly from the usual species represented in the toxicity tests. If additional data on one or more marine taxa was provided, the AF was 50 or 10, respectively.

Freshwater mesocosm studies could be used for marine effects assessment. However, in such a case an extra assessment factor of 10 should be applied to derive the AA-$QS_{BalticSea}$, in other words an AF of 50 should be used for the AA-$QS_{BalticSea}$. However, preference may be given to the deterministic or SSD approach, if the laboratory studies contain additional marine taxonomic groups.

The SSD method could not be used for this standard, since the data requirements were not met.

4.3

Preliminary maximum acceptable concentrations for the freshwater pelagic community (MAC-QS)

The MAC-QS is set to protect the aquatic communities from short-term exposure and it is based on acute toxicity test results. Data on three trophic levels is the minimum requirement, which in the case of plant protection products was always met. The AF was normally 100. There are two possibilities in which the AF can be lowered to 10. If all acute toxicity values are very similar, i.e. the standard deviation of the log-transformed values is less than 0.5, an AF of 10 is acceptable. On the other hand, if the mode of action of the substance is known and data on a species representing the most sensitive taxonomic group is available, an AF of 10 is also considered applicable (TGD 2010). This can be the case e.g. for an herbicide, when either algae or *Lemna* are clearly more sensitive than all other taxa tested. It was decided, that an AF of 10 was applied, if the acute toxicity value (LC/EC_{50}) for the taxonomic group regarded as most sensitive was one hundred times lower than LC/EC_{50} for any other taxonomic group.

Additionally, if the requirements for an SSD analysis were met, an AF of 10 was applied to the HC5 based on the acute toxicity data. If an SSD analysis was provided, as in the case of the fungicide chlorothalonil, the HC5 given in the source data was used to derive the MAC-QS. Short-term simulated ecosystem studies have not been conducted for any substance so far, and thus this possibility for deriving the MAC-QS is not discussed.

Again the lowest value derived with any method used was set as the MAC-QS. If the resulting value was lower than the value set as the final AA-QS, the MAC-QS was set equal to it.

4.4

Preliminary maximum acceptable concentrations for the Baltic Sea water pelagic community ($MAC\text{-}QS_{BalticSea}$)

If no marine species had been tested, the MAC-QS values for the Baltic Sea were always ten times smaller than the MAC-QS for the freshwater (TGD p. 67). Thus, the AF was 1000 or if the standard deviation of the log-transformed values was less than 0.5, 100. If one or more marine species had been tested, the lowest acute toxicity value was divided by an AF of 500 or 100, respectively. The AF could be again lowered by a factor of ten to 50 and 10, respectively, if the standard deviation was less than 0.5.

Freshwater mesocosm results are not suitable for the derivation of a $MAC\text{-}QS_{BalticSea}$. Since no saltwater mesocosm studies were available, this possibility to derive MAC-QS values for the Baltic Sea could not be used.

If the requirements for an SSD analysis were met, an AF of 100 was applied to the HC5 based on the acute toxicity data. If one marine species had been tested, the AF was 50 and if data on at least two marine species was present the AF was 10.

4.5

Preliminary EQS for sediment ($QS_{sediment}$)

Sediments can act as a sink for chemicals through sorption and the derivation of sediment QSs is particularly relevant for hydrophobic substances. Sediment-EQS values are set to protect benthic species. Whether a sediment-based assessment is needed, was decided case-by-case following the scheme presented in Figure 1. A sediment-EQS is derived, if the substance has the potential to adsorb to the sediment or it is highly toxic to benthic organisms. Low toxicity to benthic organisms is assumed when the chronic toxicity (NOEC value) for *Daphnia* is equal or higher than 0.1 mg/l. This is a principal of the EU evaluation procedure (Sanco 2002). Thus, when the NOEC value for Daphnia is higher than this, there was no data on benthic organisms available. In such cases the necessity of a sediment-EQS should be evaluated based only on the sorption potential of the substance i.e. the Log K_{OC}, Log K_{OW} or the distribution into sediment in the water/sediment study. If one of these values meets the requirements mentioned in the scheme, a sediment-EQS should be derived. However, since the equilibrium partitioning method described in the TGD (2010) requires several parameters and relies on assumptions, it was not used here. Therefore, only in cases where substances have been tested on a benthic organism sediment-EQSs have been derived.

The sediment-EQS was calculated from the chronic NOEC or EC_{10} value for the benthic organism tested – usually *Chironomus riparius* – dividing the value by an AF. Since sediment toxicity tests had not been performed with species representing different living and feeding conditions the AF was always 100 (TGD: Table 5-1, p. 122). If available, a value from a spiked sediment test was preferred over a spiked water test. Predominantly the *Chironomus* studies had been performed as spiked water tests. However, the results from these tests (mg/l) can be converted to estimates of concentrations in sediments (mg/kg org C) using the following equation (TGD p. 123):

$$QS_{sediment\ carbon} = QS_{spiked\ water} \times K_{OC}$$

where
$QS_{sediment\ carbon}$ is the QS based on the estimated concentration in the sediment organic carbon
$QS_{spiked\ water}$ is the QS derived from the spiked water test result
K_{OC} is the partition coefficient to organic carbon

The selected K_{OC} value used was the lowest value reported in order to follow the worst case principles. The NOEC value should be calculated towards the default EU 'standard sediment' of 5 % of organic carbon. However, this was not done since the content of organic carbon was very seldom reported in the study summaries of the *Chironomus* tests in the respective DARs.

Most of the preliminary $QS_{sediment}$ values are based on the concentration of mg/kg organic carbon in sediment (Annex III). This is due to the toxicity data available, which mostly consisted of only water spiked tests for benthic organisms. In these cases in the monitoring programs the organic carbon content of the sediment samples should be analyzed for the results to be comparable to the derived $QS_{sediment}$ values. For those active substances having spiked sediment test results, the preliminary $QS_{sediment}$ value is given as mg/kg sediment, and can thus be compared to sediment concentrations as such (Annex III). The LOQ values for the sediment standards are taken from soil analysis methods (Annex II), since methods for sediment were not available.

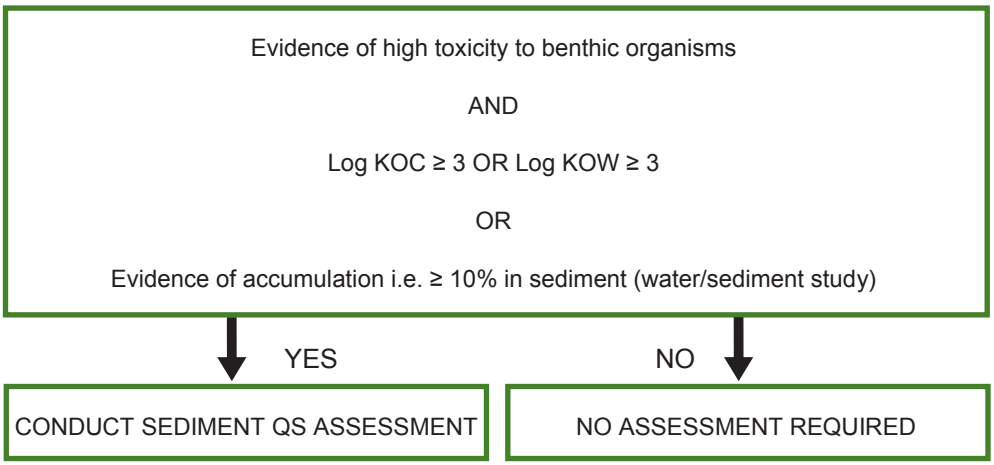

Figure 1. Scheme on whether or not a sediment assessment is required.

4.6

Preliminary EQS referring to secondary poisoning of top predators (QS_{biota})

Secondary poisoning is the accumulation of toxic substances in food chains resulting from the ingestion of contaminated organisms from lower trophic levels. The QS_{biota} is derived in order to protect species higher in the food chain from toxic effects due to bioaccumulation. Food chains vary in length and complexity. In general, marine food chains are longer than those of freshwater ecosystems.

Whether a QS value protecting top predators from secondary poisoning was needed, was decided based on the scheme presented in Figure 2. In general, a biota QS is set, if the substance under assessment has potential to bioaccumulate. This is measured with the bioconcentration factor (BCF) or the biomagnification factor (BMF). Only the former is routinely measured. If no bioaccumulation study is available, the partition coefficient (Log K_{OW}) can indicate potential for accumulation, as it measures lipophilicity.

The lowest NOAEL value obtained from all toxicological studies was used for deriving the QS_{biota} since all effects were considered to affect the survival of mammals. If the result from the avian reproduction test was lower, it was considered the most relevant endpoint. These values could be converted into a water column concentration standard. This way biota QS values can be used in selection of an overall EQS or fit to monitoring programs that use only water standards. Since a BCF value is needed for transforming the diet-based biota standard into a water concentration standard, only substances for which a BCF is available can be evaluated without additional uncertainty. Luckily, according to the data requirements in the directive 96/12/EC to plant protection product directive a substance with a partition coefficient higher than three have to be tested for bioaccumulation and thus a BCF value was almost always available when needed. Only for very fast degrading substances a BCF value might not have been determined. Since quickly disappearing substances cannot bioaccumulate, a QS_{biota} was not considered necessary for these substances. According to the TGD (2010) an assessment on secondary poisoning should also be made, if a substance is highly toxic to mammals and birds. Since no value for high toxicity was given in the TGD (2010), it was decided that substances were regarded as such should they have an acute oral LC_{50} of less than 25 mg/kg body weight for mammals or less than 10 mg/kg body weight for birds. These values are based on

international unofficial tables (Nikunen 1993). Only two substances were this toxic, lambda-cyhalothrin and methiocarb.

Normally the biota standard is based on chronic toxicity values of feeding studies for mammals or birds (mg/kg diet). These values could be converted into a water column concentration standard (mg/l). First NOAEL (having unit per kg bw/d) values were converted into NOEC values (having a unit per food) multiplying them with their respective conversion factors (Table 2) as shown in the following formula:

$$NOEC = NOAEL \cdot \left(\frac{bw}{DFI} \right)$$

where
NOEC = no observed effect concentration (mg/kg food)
NOAEL = no observed adverse effect level (mg/kg bw/d)
DFI = daily food intake (g food/d) and
bw = body weight (g)

NOAEL values were categorized "chronic" if they represented reproduction, developmental, or long term and carcinogenicity studies. Also studies under short term toxicity in the source data with durations of more than 90 days were considered as having tested chronic toxicity. All NOEC values were then compared to each other and the value resulting in the lowest biota standard divided with the respective AF (Table 3) was chosen.

In some cases a test with shorter exposure duration resulted in a lower result than the test with longer exposure duration. According to the TGD, in such a case, the assessment factor corresponding to the longest exposure time might be applied (TGD 2010). However, it was decided, that it would be too complex to decide, whether this would be appropriate. Thus, the AF values presented in Table 3 were always used.

Table 2. Conversion factors (CF) used to convert NOAEL values to NOEC values

Species	Studies	CF (bw/DFI)
Rat	long term & carcinogenicity	20
Rat	short term i.e. 28/90 d	10
Rat	two generation study (male parent)	12.5
Rat	two generation study (female or offspring)	8.33
Mouse	all studies	8.3
Rabbit	all studies	33.3
Dog	all studies	40
Birds	avian reproduction studies	10

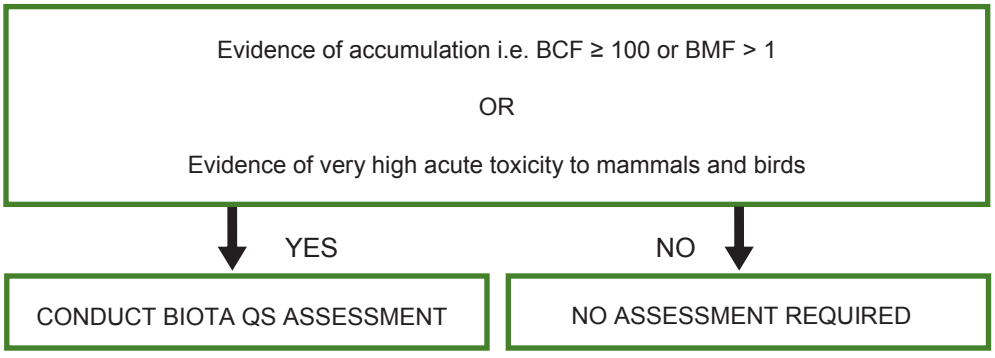

Figure 2. Scheme on whether or not a biota assessment is required.

Table 3. AF values used in the biota assessment

NOEC	Duration of test	AF
birds	chronic	30
mammals	28 days	300
	90 days	90
	chronic	30

The biota standards were converted to equivalent water concentrations according to the instructions in the TGD (2010) using the following formulas:

$$QS_{freshwater}(mg/l) = \frac{QS_{biota}(mg/kg)}{BCF(l/kg) \cdot BMF_1}$$

$$QS_{BalticSea}(mg/l) = \frac{QS_{biota}(mg/kg)}{BCF(l/kg) \cdot BMF_1 \cdot BMF_2}$$

where
QS_{biota} = calculated QS for biota
BCF = bioconcentration factor
BMF_1 = biomagnification factor, biomagnification from fish to predatory fish
BMF_2 = biomagnification factor, biomagnification from predatory fish to birds and mammals

The BMF values were chosen based on the respective BCF (Table 4), since no data on BMF values was included in the source data. For the majority of active substances the BCF value was less than 2000. Therefore, both BMF_1 and BMF_2 were 1 and the resulting values for freshwater and saltwater the same. According to the TGD, the biomagnification from fish to predatory birds and mammals is not taken into account in freshwater standard calculation, which we found quite peculiar. There is however data available in the fact sheets for calculating the QS_{biota} for fresh water taking into account also the route from biomagnification from predatory fish to birds and mammals, if considered appropriate.

Table 4. BMF values used in the extrapolation from biota to water

BCF	BMF_1	BMF_2
<2000	1	1
2000–5000	2	2
>5000	10	10

5 Overall preliminary environmental quality standard

Proposals for the preliminary environmental quality standards for water, biota and sediment were derived independently from each other. Standards for the Baltic Sea were additionally calculated. The water phase standards i.e. the AA-QS values and the converted biota standard were compared to each other, and the lower value was chosen as an overall standard. This was done separately for freshwater and the Baltic Sea. The biota standards were rarely smaller than the AA-QS values. Only in the cases of aclonifen, penconazole and prosulfocarb the QS_{biota} was the lowest.

Sediment standards calculated as mg/kg organic carbon or mg/kg sediment were reported as such. They do not take part in the determination of an overall water phase EQS values. Instead, they are derived in order to protect benthic organisms where these might be affected. Especially these values are important for active substances in plant protection products, which have a high tendency to accumulate in sediments and thus they can present a threat to the local benthic communities. They will thus not be detected in surveys made from the water phase.

The preliminary AA-QS values derived in this publication for both the fresh water and Baltic sea were compared for those five active substances and one metabolite that have already established AA-QS values in the Government Decree on Substances Dangerous and Harmful to the Aquatic Environment 1022/2006 (update 868/2010). The AA-QS values presented in the Government Decree were based on much larger data set. In this report only the data provided by the notifiers was used due to the fact that in this way the specification of the active substance is known. At least at present only the studies with known specification are considered appropriate for the risk assessment in the EU. The AA-QS values for the active substances MCPA and tribenuron-methyl as well as the values for the metabolite ETU were equal. Both AA-QS values were lower for the active substance metamitron due to the aquatic plant study which was not included in the publication for proposal for environmental quality standards (Londesborough 2005). The AA-QS values for dimethoate were higher due to the larger data set used in the above mentioned publication. In both cases the differences in the AA-QS values were clearly within an order of magnitude. No AA-QS values were derived for the active substance prochloraz in this publication because this substance has been voluntarily withdrawn from the market in the EU.

6 Monitoring data

Monitoring data of active substances of plant protection products is very limited in Finland before year 2004 when the first screening study of these compounds was started. In 2004 water samples were taken from ditches, streams and rivers: 24 active substances or their metabolites were found out of 100 analyzed substances. MCPA was the most frequently detected substance (in around 70 % of samples), followed by dichloprop and mecoprop (Siimes et al. 2005). In 2005 samples were collected from 35 streams, where over 25 % of the catchment area was under agricultural use, and 46 active substances or their metabolites were found out of more than 100 active substances analyzed. Again the same three active substances were found in the highest concentrations (Mannio et al. 2007). These results show that active substances of the plant protection products leach to surface waters. These screening studies were used for the planning of continuous monitoring of active substances under the WFD.

Nine rivers were chosen for monitoring purposes of active substances under the WFD. These rivers were: Ähtävä, Kyrö, Kokemäki, Aura, Paimio, Mustio, Lepsämä, Vantaa and Porvoo ordered from north to east along the coast. In three of the rivers, in river Aura, Paimio and Lepsämä, monitoring is performed each year and in the other rivers in three years rotation. In monitoring program twelve samples are taken per year (Mannio et al. 2008).

Monitoring data was gathered from the measurements done for Finnish national monitoring under the WFD. Data from the last three years was considered. It shows that few active substances, namely clopyralid, dimethoate, dichlorprop, MCPA, mekoprop, and metamitron (in alphabetical order), are found in measurable concentrations downstream from agricultural areas. These values were below the AA-QS values derived for these substances. Only in the case of MCPA the measured concentrations were close to the AA-QS value (Figure 3) derived from HERTTA-database (Finnish Environment Institute 2010). The measured values show that the risks are at an acceptable level at these downstream points of the rivers. However, these measurements available do not show that the risks are acceptable in smaller watercourses.

Almost no specific data is available from the small ponds and streams in the vicinity of the crop fields where plant protection products are used. Some measurements have, however, been performed in screening studies in the tributaries of larger rivers. In these studies MCPA has been found in very high concentration with annual average concentration of 38 µg/l in Savijoki and in concentration of 3.5 µg/l in Kinarehenoja, both values exceeding the AA-QS value of 1.62 µg/l for MPCA (Siimes et al. 2009). Also the maximum concentration of 172 µg/l for MPCA in Savijoki (Katri Siimes, personal communication) exceeds highly the MAC-QS value of 15.2 µg/l for MPCA. Since it is out of the scope of this report to compare all the monitoring results performed in Finland with their respective AA-QS and MAC-QS values, MPCA was chosen as an example due to its highest detection frequency. Nevertheless, MCPA

findings clearly support the conclusion that small streams in the vicinity of the agricultural areas are where the future monitoring should be focused on. The sampling places should be selected in a way that areas for different crops and thereby different plant protection product uses would be covered.

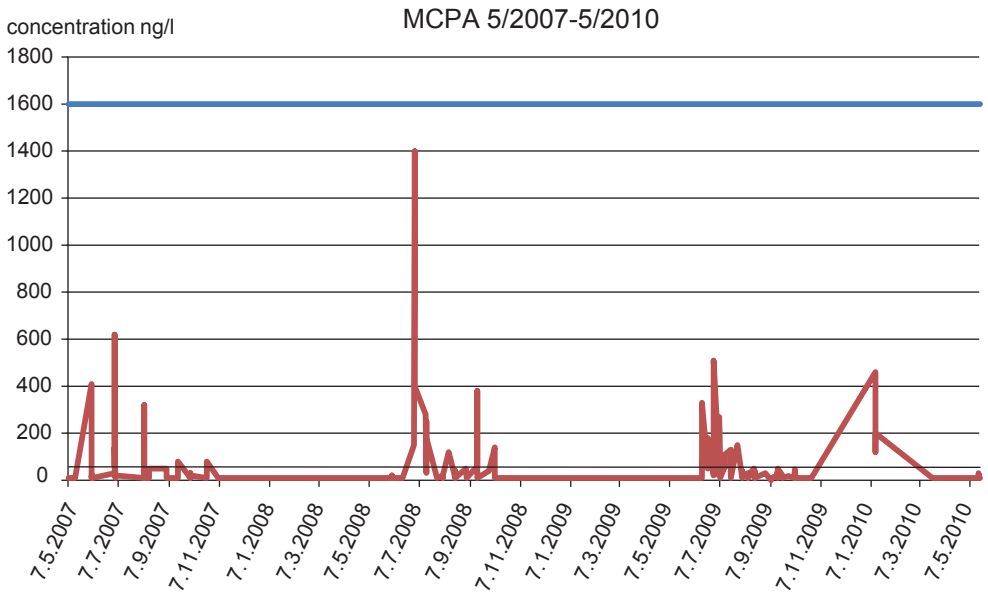

Figure 3. Combined monitoring data for MCPA from different rivers during three last three years (red line) compared to the calculated EQS-value (blue line).

7 Conclusions

In this proposal of the Finnish Environment Institute preliminary EQS values have been derived for all the active substances of plant protection products on the market at present in Finland, for 113 active substances altogether and also for 18 metabolites of which 6 were the actual active substances. These active substances included 46 herbicides, 41fungicides, 18 insecticides and/or acaricides and 9 plant growth regulators of which 3 have also insecticidal or fungicidal use. The preliminary EQS values will be used for the monitoring of active substances under the water framework directive and maybe later on also under the directive on sustainable use of pesticides. When monitoring results show values below the preliminary EQS values, the risks of the use of plant protection products are acceptable and the chemical quality of the water courses good. If monitoring results show concentrations above the EQS values, risk mitigation options should be discussed and mobilized.

All the MAC-QS values are based on acute toxicity data of aquatic organisms. Most of the preliminary overall EQS values are based on the chronic toxicity data to aquatic organisms. Only in a few cases the QS_{biota} gave the lowest water concentration value and was used for the overall EQS derivation. In these cases, especially if the EQS value is below the limit of quantification (LOQ) in water, it could be checked whether monitoring of the active substance straight from the biota would be sensible.

Most of the active substances can be monitored, since their preliminary EQS values are above the limit of quantification (LOQ) in water given in EU reports or the LOQ values from the analytical laboratory used in screening and monitoring programs in Finland (Annex II). Those substances, that have high intrinsic toxicity and therefore their AA-QS and MAC-QS values are below the LOQ, are presented in Table 5. These substances should still be monitored and checked whether they are found in concentrations above their LOQ values. In this case also the need of risk mitigation should be discussed.

The preliminary EQS values are proposals, and further work is needed if these values are to be modified to final EQS values. The new regulation concerning placing of the plant protection products on the market (1107/2009/EU) requires the applicants to provide a literature survey on public data concerning their respective active substances. EFSA is preparing a guidance document on the use of the public data in the risk assessment of plant protection products. This work will profit a lot the finalization of the EQS values. The proposed values are considered adequate for the risk characterization at present.

The present publication has been performed as civil servant and university internship work. However, further refinement would need outside funding e.g. from the Ministry of Environment or the Ministry of Agriculture and Forestry or the Ministry of Employment and the Economy.

Table 5. Substances with all EQS values below LOQ values

Substance	< EU LOQ	< FI LOQ
abamectin	x	No method
alphacypermethrin	x	x
beta-syflutrin	x	No method
bifenox	x	No method
cypermetrin	x	x
deltamethrin	x	x
diflufenican	x	
esfenvalerate	No method	x
iodosulfuron-methyl-sodium	x	No method
lambda-cyhalotrin		x
pendimetalin	x	
pyrethrins	x	No method
quonoclamine	x	No method
sulfusulfuron	x	
triasulfuron	x	x

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Abbreviations

AA-QS	Annual Average Quality Standards
ADI	Acceptable Daily Intake (for humans)
AF	Assessment Factor
a.s.	Active substance
BCF	Bioconcentration factor
BMF	Biomagnification factor
bw	Body weight
Circa	EU database for all reports concerning specific active substances (no public access)
DAR	Draft assessment report
dwt	Dry weight
DT50	Degradation half-life i.e. degradation of 50 %
EC	European Commission
EC report	European Commission: Review report for an active substance
EC10	Effective concentration (e.g. immobilization) for 10 % of test animals
EC50	Effective concentration (e.g. immobilization) for 50 % of test animals
EFSA	European Food Safety Authority
EFSA conclusion	EFSA: Scientific conclusion report on an active substance
EQS	Environmental Quality Standards
form.	Formulation
K_{OC}	Organic carbon – water distribution coefficient
K_{OW}	Octanol-water distribution coefficient

im	Initial measured concentration
in	Initial nominal concentration
LC50	Lethal concentration for 50 % of test animals
LD50	Lethal dose for 50 % of test animals
LoEP	List of end points of a specific active substance
MAC-QS	Maximum acceptable concentration - Quality Standards
m	Measured concentration
mm	Mean measured concentration
nc	Nominal concentration
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
PPP	Plant Protection Product
QS	Quality Standard
s	Static system
TGD	Technical Guidance Document
WFD	Water Framework Directive

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Annex I: Active substances listed by page number

Fact sheets are found in Annex V on the following pages:		
40	2,4-D	
41	abamectin	
42	aclonifen	
43	alpha-cypermethrin	
44	amidosulfuron	
45	azoxystrobin	
46	bentazone	
47	beta-syfluthrin	
48	bifenazate	(2 metabolites)
51	bifenox	
52	boscalid	
53	bromoxynil octanoate	(actual active substance: bromoxynil)
55	carfentrazone-ethyl	
56	chloridazon	
57	chlormequat-chloride	
58	chlorothalonil	
59	chlorpropham	
60	clopyralid	
61	clothianidin	
62	cyazofamid	
63	cymoxanil	
64	cypermethrin	
65	cyprodinil	
66	daminozide	(1 metabolite: formaldehyde)
68	deltamethrin	
69	desmedipham	
70	dicamba	
71	dichlorprop-P	
72	difenoconazole	
73	diflubenzuron	
74	diflufenican	
75	dimethoate	
76	dimethomorph	
77	diquat	
78	esfenvalerate	
79	ethephon	
80	ethofumesate	
81	famoxadone	
82	fenamidone	
83	fenhexamid	
84	fenoxaprop-P-ethyl	(actual active substance: fenoxaprop-P)
86	fenpropidin	
87	fenpropimorph	
88	florasulam	
89	fluazinam	
90	fludioxonil	
91	fluroxypyr	
92	flutolanil	
93	fosetyl-aluminium	
94	fuberidazole	
95	glufosinate-ammonium	
96	glyphosate acid	(1 metabolite: AMPA)
98	imazalil	
99	imidacloprid	
100	iodosulfuron-methyl sodium	

101	ioxynil octanoate	(actual active substance: ioxynil)
103	iprodione	
104	kresoxim-methyl	(1 metabolite)
106	lambda-cyhalothrin	
107	linuron	
108	maleic hydrazide	
109	mancozeb	
110	maneb	(1 metabolite: ETU)
112	mandipropamid	
113	MCPA	
114	mecoprop-P	
115	mepanipyrim	
116	mepiquat-chloride	
117	metalaxyl-M	
118	metamitron	
119	metazachlor	
120	metconazole	
121	methiocarb	
122	metribuzin	
123	metsulfuron-methyl	
124	paraffin oils	
125	penconazole	
126	pendimethalin	
127	phenmedipham	
128	picoxystrobin	
129	propamocarb-hydrochloride	
130	propaquizafop	
131	quizalofop-P-ethyl	(actual active substance: quizalofop acid)
133	propiconazole	
134	propoxycarbazone sodium	
135	prosulfocarb	
136	prothioconazole	(2 metabolites)
139	pyraclostrobin	
140	pyrethrins	
141	pyridate	(1 metabolite)
143	pyrimethanil	
144	quinoclamine	
145	rimsulfuron	
146	spirodiclofen	
147	sulfosulfuron	
148	tebuconazole	
149	tepraloxydim	
150	thiacloprid	
151	thiamethoxam	
152	thifensulfuron-methyl	
153	thiophanate-methyl	(1 metabolite: carbendazim)
155	thiram	
156	tolclofos-methyl	
157	tralkoxydim	
158	triadimenol	
159	triasulfuron	
160	tribenuron-methyl	
161	trifloxystrobin	(2 metabolites)
164	triflusulfuron-methyl	
165	trinexapac-ethyl	(actual active substance: trinexapac)
167	triticonazole	
168	tritosulfuron	
169	zoxamide	

Annex II: EQS values in relation to limits of quantification (LOQ)

Active substance	EQS values in relation to limits of quantification (LOQ) according to EU					EQS values in relation to limits of quantification (LOQ) according to Ramboll Analytics, Finland				
	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed
2,4-D	x	x	x	x	N.A.	x	x	x	x	N.A.
abamectin	<LOQ	<LOQ	<LOQ	<LOQ	<LOQ	No finnish LOQ				
aclonifen	x	<LOQ	x	x	x	x	<LOQ	x	x	x
alphacypermethrin	<LOQ	<LOQ	<LOQ	<LOQ	orgC	<LOQ	<LOQ	<LOQ	<LOQ	orgC
amidosulfuron	x	x	x	x	N.A.	x	x	x	x	N.A.
azoxystrobin	x	x	AA-QS	AA-QS	orgC	x	x	AA-QS	AA-QS	orgC
bentazone	x	x	AA-QS	AA-QS	N.A.	x	x	AA-QS	AA-QS	N.A.
beta-cyfluthrin	<LOQ	<LOQ	<LOQ	<LOQ	orgC	No finnish LOQ				
bifenazate	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
D3598	DT50 < 2 d	DT50 < 2 d	x	<LOQ	DT50 < 2 d	No finnish LOQ				
D9472	x	<LOQ	x	x	N.A.	No finnish LOQ				
bifenox	<LOQ	<LOQ	<LOQ	<LOQ	orgC	No finnish LOQ				
boscalid	x	<LOQ	x	x	x	x	x	x	x	N.D.
bromoxynil octanoate	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	No finnish LOQ				
bromoxynil	x	<LOQ	x	x	N.A.	No finnish LOQ				
Carfentrazone-ethyl	DT50 < 2 d	DT50 < 2 d	x	<LOQ	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
chloropropionic acid	x	<LOQ	x	x	N.A.	No finnish LOQ				
chloridazon	x	x	x	x	N.A.	No finnish LOQ				
chlormequat chloride	Data requirement					No finnish LOQ				
chlorothalonil	Data requirement					N.A.	N.A.	x	x	N.A.
chlorpropham	x	x	x	x	N.A.	x	x	x	x	N.A.
clopyralid	x	x	x	x	orgC	x	x	x	x	orgC
clothianidin	x	<LOQ	x	x	orgC	No finnish LOQ				
cyazofamid	x	x	x	x	orgC	x	x	x	x	orgC
cymoxanil	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
cypermethrin	<LOQ	<LOQ	<LOQ	<LOQ	orgC	<LOQ	<LOQ	<LOQ	<LOQ	orgC
cyprodinil	x	<LOQ	x	x	x	x	x	x	x	x
daminozide	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	No finnish LOQ		DT50 < 2 d
formaldehyde	N.A.	N.A.	No LOQ available		N.A.	N.A.	N.A	No LOQ available		N.A.

Active substance	EQS values in relation to limits of quantification (LOQ) according to EU					EQS values in relation to limits of quantification (LOQ) according to Ramboll Analytics, Finland				
	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed
desmedipham	x	x	x	x	N.A.	No finnish LOQ				
dicamba	x	x	x	x	N.A.	x	x	x	x	N.A.
dichlorprop-P	x	x	x	x	N.A.	x	x	x	x	N.A.
difenoconazole	x	<LOQ	x	<LOQ	x	No finnish LOQ				
diflubenzuron	<LOQ	<LOQ	not set*	not set*	N.D.	No finnish LOQ				
diflufenican	<LOQ	<LOQ	<LOQ	<LOQ	x	x	<LOQ	x	<LOQ	<LOQ
dimethoate	x	x	x	x	orgC	x	x	x	x	orgC
dimethomorph	x	x	x	x	orgC	x	x	x	x	orgC
diquat	x	<LOQ	x	x	x	No finnish LOQ				
esfenvalerate	Data requirement				orgC	<LOQ	<LOQ	<LOQ	<LOQ	orgC
ethephon	x	x	N.D.	N.D.	N.A.	No finnish LOQ				
ethofumesate	x	x	x	x	orgC	x	x	x	x	orgC
famoxadone	DT50 < 2 d	DT50 < 2 d	x	x	N.A.	DT50 < 2 d	DT50 < 2 d	x	x	N.A.
fenamidone	x	<LOQ	x	<LOQ	orgC	x	x	x	x	orgC
fenhexamid	x	x	x	x	N.A.	x	x	x	x	N.A.
fenoxaprop-P-ethyl	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
Fenoxaprop-P	x	x	x	x	N.A.	No finnish LOQ				
fenpropidin	<LOQ	<LOQ	x	<LOQ	x	x	<LOQ	x	x	No LOQ available
fenpropimorph	<LOQ	<LOQ	x	x	orgC	<LOQ	<LOQ	x	x	orgC
florasulam	<LOQ	<LOQ	x	<LOQ	orgC	<LOQ	<LOQ	x	x	orgC
fluazinam	x	<LOQ	x	x	orgC	x	<LOQ	x	x	orgC
fludioxonil	x	<LOQ	x	x	x	x	<LOQ	x	x	x
fluroxypyr (acid)	x	x	x	x	N.A.	x	x	x	x	N.A.
flutolanil	x	x	x	x	N.A.	x	x	x	x	N.A.
fosetyl-aluminium	x	x	x	x	N.A.	No finnish LOQ				
fuberidazole	x	x	x	x	N.A.	No finnish LOQ				
glufosinate-ammonium	x	x	x	x	N.A.	No finnish LOQ				
glyphosate acid	x	x	x	x	N.A.	x	x	x	x	N.A.
AMPA	x	x	x	x	N.A.	x	x	x	x	N.A.

Active substance	EQS values in relation to limits of quantification (LOQ) according to EU					EQS values in relation to limits of quantification (LOQ) according to Ramboll Analytics, Finland				
	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed
imidacloprid	x	<LOQ	x	x	orgC	No finnish LOQ				
iodosulfuron-methyl-sodium	<LOQ	<LOQ	<LOQ	<LOQ	N.A.	No finnish LOQ				
ioxynil-octanoate	x	<LOQ	AA-QS	AA-QS	orgC	No finnish LOQ				
ioxynil	x	<LOQ	x	x	N.A.	No finnish LOQ				
iprodione	x	x	x	x	N.A.	x	x	x	x	N.A.
kresoxim-methyl	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
BF490-1	No data	No data	x	x	No data	No finnish LOQ				
lambda-cyhalotrin	<LOQ	x	<LOQ	<LOQ	<LOQ	<LOQ	<LOQ	<LOQ	<LOQ	<LOQ
linuron	x	<LOQ	x	x	N.A.	x	x	x	x	N.A.
maleic hydrazide	x	x	x	x	N.A.	No finnish LOQ				
mancozeb	DT50 < 2 d	DT50 < 2 d	x	<LOQ	DT50 < 2 d	No finnish LOQ				
maneb	DT50 < 2 d	DT50 < 2 d	<LOQ	<LOQ	DT50 < 2 d	No finnish LOQ				
ETU	x	x	x	x	N.A.	x	x	x	x	N.A.
mandipropamid	x	x	x	x	N.A.	No finnish LOQ				
MCPA	x	x	x	x	N.A.	x	x	x	x	N.A.
mecoprop-p	x	x	AA-QS	AA-QS	N.A.	x	x	AA-QS	AA-QS	N.A.
mepanipyrim	x	x	x	x	orgC	No finnish LOQ				
mepiquat chloride	x	x	x	x	N.A.	No finnish LOQ				
metalaxyl-M	x	x	x	x	N.A.	x	x	x	x	N.A.
metamitron	x	x	x	x	N.A.	x	x	x	x	N.A.
metazachlor	x	<LOQ	x	x	x	x	x	x	x	x
Metconazole	x	<LOQ	x	x	orgC	No finnish LOQ				
methiocarb	<LOQ	<LOQ	x	<LOQ	No data	No finnish LOQ				
metribuzin	x	<LOQ	x	x	N.A.	x	<LOQ	x	x	N.A.
metsulfuron-methyl	No data available on LOQ in Circa					<LOQ	<LOQ	x	<LOQ	N.A.
paraffin oil	No data available on LOQ in Circa					No finnish LOQ				
penconazole	x	x	AA-QS	AA-QS	x	x	x	AA-QS	AA-QS	x
pendimetalin	<LOQ	<LOQ	<LOQ	<LOQ	orgC	x	<LOQ	x	<LOQ	orgC
phenmedipham	DT50 < 2 d	DT50 < 2 d	x	x	N.A.	No finnish LOQ				

Active substance	EQS values in relation to limits of quantification (LOQ) according to EU					EQS values in relation to limits of quantification (LOQ) according to Ramboll Analytics, Finland				
	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed
propamocarb hydrochloride	x	x	x	x	N.A.	No finnish LOQ				
propaquizafop	Data requirement					DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
quizalofop acid	x	x	x	x	x	No finnish LOQ				
propiconazole	x	x	x	x	x	x	x	x	x	No LOQ
propoxycarbazone sodium	<LOQ	<LOQ	x	<LOQ	N.A.	No finnish LOQ				
prosulfocarb	x	<LOQ	x	x	orgC	x	x	x	x	orgC
prothioconazole	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	No finnish LOQ				
Proth.-S-methyl (M01)	No data available on LOQ in Circa					No finnish LOQ				
Proth.-desthio (M04)	x	<LOQ	x	x	orgC	No finnish LOQ				
pyraclostrobin	x	<LOQ	x	x	orgC	x	x	x	x	orgC
pyrethrins	<LOQ	<LOQ	<LOQ	<LOQ	orgC	No finnish LOQ				
pyridate	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
CL9673	x	x	x	x	N.A.	No finnish LOQ				
pyrimethanil	x	x	x	x	orgC	x	x	x	x	orgC
quinoclamine	<LOQ	<LOQ	<LOQ	<LOQ	orgC	No finnish LOQ				
quizalofop-P-ethyl	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	No finnish LOQ				
quizalofop acid	x	x	x	x	x	No finnish LOQ				
rimsulfuron	x	<LOQ	x	<LOQ	N.A.	x	<LOQ	x	<LOQ	N.A.
spirodiclofen	x	<LOQ	x	x	orgC	No finnish LOQ				
sulfusulfuron	<LOQ	<LOQ	<LOQ	<LOQ	N.A.	x	<LOQ	x	<LOQ	N.A.
tebuconazole	x	x	x	x	orgC	No finnish LOQ				
tetraloxydim	x	x	AA-QS	AA-QS	N.A.	x	x	AA-QS	AA-QS	N.A.
thiacloprid	x	<LOQ	x	x	orgC	No finnish LOQ				
thiamethoxam	x	<LOQ	x	<LOQ	<LOQ	x	x	x	x	no LOQ
thifensulfuron-methyl	x	<LOQ	x	<LOQ	N.A.	x	<LOQ	x	x	N.A.
Thiophanate-methyl	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	No finnish LOQ				
Carbendazim	x	<LOQ	x	x	orgC	No finnish LOQ				
thiram	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	No finnish LOQ				
tolclofos-methyl	x	x	x	x	orgC	x	x	x	x	orgC

Active substance	EQS values in relation to limits of quantification (LOQ) according to EU					EQS values in relation to limits of quantification (LOQ) according to Ramboll Analytics, Finland				
	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed	AA-QS	AA-Qs-Balticsea	MAC-QS	MAC-QS-BalticSea	QSsed
triadimenoli	x	x	x	x	<LOQ	x	x	x	x	<LOQ
triasulfuron	<LOQ	<LOQ	<LOQ	<LOQ	N.A.	<LOQ	<LOQ	<LOQ	<LOQ	N.A.
tribenuron-methyl	x	<LOQ	x	<LOQ	N.A.	x	x	x	x	N.A.
trifloxystrobin	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d	DT50 < 2 d	DT50 < 2 d	x	x	DT50 < 2 d
CGA 321113	x	x	x	x	N.A.	No finnish LOQ				
CGA 357261	No data available on LOQ in Circa					No finnish LOQ				
triflusulfuron-methyl	x	<LOQ	x	<LOQ	N.A.	x	<LOQ	x	<LOQ	N.A.
trinexapac-ethyl	x	x	x	x	N.A.	x	x	x	x	N.A.
trinexapac	x	x	x	x	orgC	No finnish LOQ				
triticonazole	x	x	x	x	orgC	x	x	x	x	orgC
tritosulfuron	x	x	x	x	N.A.	No finnish LOQ				
zoxamide	x	<LOQ	AA-QS	AA-QS	orgC	x	x	AA-QS	AA-QS	orgC

* MAC-QS not set, since the active substance is a insect growth regulator
AA-QS = MAC-QS set to AA-QS
DT50 = degradation half-life
LOQ = Limit of quantification
N.A. = not applicable
orgC = derived from spiked water test and Koc value
x = EQS value above LOQ

Annex III: Active substances for which a $QS_{sediment}$ has been derived

Active substance	QSsed	Active substance	QSsed
abamectin	sed	alphacypermethrin	orgC
aclonifen	sed	azoxystrobin	orgC
boscalid	sed	beta-cyfluthrin	orgC
cyprodinil	sed	bifenox	orgC
difenoconazole	sed	Carbendazim	orgC
diflufenican	sed	clopyralid	orgC
diquat	sed	clothianidin	orgC
fenpropidin	sed	cyazofamid	orgC
fludioxonil	sed	cypermethrin	orgC
imazalil	sed		
lambda-cyhalotrin	sed	deltamethrin	orgC
metazachlor	sed	Dimethoate	orgC
penconazole	sed	Dimethomorph	orgC
picoxystrobin	sed	esfenvalerate	orgC
		ethofumesate	orgC
propiconazole	sed	fenamidone	orgC
thiamethoxam	sed	fenpropimorph	orgC
triadimenoli	sed	florasulam	orgC
		fluazinam	orgC
		imidacloprid	orgC
		ioxynil-octanoate	orgC
		mepanipyrim	orgC
		Metconazole	orgC
		pendimetalin	orgC
		prosulfocarb	orgC
		Prothioconazole-desthio (M04)	orgC
		pyraclostrobin	orgC
		pyrethrins	orgC
		pyrimethanil	orgC
		quinoclamine	orgC
		quizalofop acid	orgC
		spirodiclofen	orgC
		tebuconazole	orgC
		thiacloprid	orgC
		tolclofos-methyl	orgC
		triticonazole	orgC
		zoxamide	orgC

Sed = derived from spiked sediment test; expressed as e.g. mg/kg sed
OrgC = derived from spiked water test and Koc value; expressed as e.g. mg/kg orgC
marked with red = metabolites that are active substances
marked with green = metabolites

Annex IV: The scientific and common names of the tested species

	Taxonomical name	Abbreviation	Common name	Synonyms
Fish	Brachydanio rerio	B. rerio	zebrafish	
	Cyprinodon variegatus	C. variegatus	sheephead minnow (fresh & brakish water)	
	Cyprinus carpio	C. carpio	common carp	
	Galaxias maculatus	G. maculatus	common galaxias i.e. inanga (estuarian)	
	Ictalurus punctatus	I. punctatus	channel catfish	
	Leiostomus xanthurus	L. xanthurus	spot croaker (marine)	
	Lepomis macrochirus	L. macrochirus	bluegill sunfish	
	Leuciscus idus melanotus	L. idus melanotus	orfe	
	Morone saxatilis	M. saxatilis	striped bass (marine)	
	Oncorhynchus mykiss	O. mykiss	rainbow trout	
	Pimephales promelas	P. promelas	fathead minnow	
	Scardinius erythropthalmus	S. erythropthalmus	common rudd	
Plants	Elodea nuttallii	E. nuttallii	western waterweed	
	Glyceria fluitans	G. fluitans	water mannagrass	
	Lemna gibba	L. gibba	fat duckweed	
	Lemna minor	L. minor	common duckweed	
	Myriophyllum aquaticum	M. aquaticum	parrotfeather watermilfoil	
	Myriophyllum spicatum	M. spicatum	spiked watermilfoil	
Algae	Anabaena flos-aquae	A. flos-aquae	cyanobacteria i.e. blue alga	
	Chlorella pyrenoidosa	C. pyrenoidosa	green alga	
	Desmodesmus subspicatus	D. subspicatus	green algae	Former: Scenedesmus subspicatus
	Navicula pelliculosa	N. pelliculosa	diatom alga	
	Navicula seminulum			
	Nitzschia palea	N. palea	diatom alga (marine)	
	Pseudokirchneriella subcapitata	P. subcapitata	green algae	Former: Selenastrum capricornutum
	Scenedesmus quadricauda	S. quadricauda	green alga	
	Scenedesmus subspicatus	S. subspicatus	green alga	
	Skeletonema costatum	S. costatum	diatom alga (marine)	

	Taxonomical name	Abbreviation	Common name	Synonyms
Invertebrates	Asellus aquaticus	A. aquaticus	waterlouse	
	Astacopsis gouldi	A. gouldi	tasmanian giant freshwater crayfish	
	Brachionus calyciflorus	B. calyciflorus	rotifer	
	Chaoborus sp.	Chaoborus sp.	phantom midge	
	Chironomus riparius	C. riparius	midge	
	Cloeon sp. (ephemeroptera)	Cloeon sp.	mayfly	
	Cypridopsis sp.	Cypridopsis sp.	ostracod crustacea	
	Daphnia hyalina	D. hyalina	water flea	
	Daphnia magna	D. magna	water flea	
	Ecdyonurus sp. (ephemeroptera)	Ecdyonus sp.	mayfly	
	Gammarus pulex	G. pulex	amphipod crustacean	
	Hyalella azteca	H. azteca	amphipod crustacean	
	Macrocyclops fuscus	M. fuscus	cyclopoid copepod	
	Mysidopsis bahia	M. bahia	opossum shrimp (marine)	
	Palaemonetes pugio	P. pugio	grass shrimp (marine)	
	Pteronarcys californica	P. californica	salmonfly	
	Sericostoma personatum (trichoptera)	S. personatum	caddisfly	
Molluscs	Crassostrea virginica	C. virginica	eastern oyster (marine)	
	Helisoma sp.	Helisoma sp.	freshwater air-breathing snail	
	Mercenaria mercenaria	M. mercenaria	hard clam / quanog (marine)	
Birds	Anas platyrhynchos	A. platyrhynchos	mallard duck	
	Colinus virginianus	C. virginianus	Bobwhite quail	
	Coturnix japonica	C. japonica	japanese quail	
	Phasianus colchicus	P. colchicus	pheasant	
	Serinus canaria	S. canaria	canary	
Other	Rana pipiens	R. pipiens	northern leopard frog	
	Xenopus laevis	X. laevis	african clawed frog	

Annex V: Fact sheets for active substances. The abbreviations used in Fact sheets are presented in the actual publication. The * used in limit of quantification values refers to analytical methods available in Ramboll Analytics, Finland.

Compound	**2,4-D**	data source	EC review report and DAR
Degradation	in soil		DT50 2-59 d (20 °C)
	hydrolytic, in water		pH 5-7 : stable (25 °C)
	in water		DT50 29 d
	in sediment		
	in water/sediment system		DT50: 29 d
	distribution		Mainly found in water
	comments		
Adsorption	LOG(K_{OW})		pH 5: 0.18
	K_{OC}		5-212; mean = 56
	LOG(Koc)		2,33 max
	dependent on pH?		Higher adsorption at lower pHs
Analysis	LOQ in water		GC 0.1 µg/l; LC/MS 0,01 µg/l*
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 5 mg/kg bw/day = 41.65 mg/kg food
	mammals/birds, acute		LD 50 mammals 469 mg/kg bw
	aquatic organisms, chronic		
		fish	P. promelas 32 d NOEC 63.4 mg/l
		BCF	10
		Daphnia	D. magna 21 d NOEC 46.2 mg/l
		algae	NOEC not given but Lemna acutely clearly more sensitive
		plants	L. gibba 14 d NOEC 0.27 mg/l
		other, if tested	–
	aquatic organisms, acute		
		fish	P. promelas 96 h LC50 100 mg/l
		Daphnia	D. magna 48 h EC50 100 mg/l
		algae	S. capricornutum 96 h EC50 24.2 mg/l
		plants	L. gibba 14 d EC50 0.58 mg/l
		other, if tested	–
	ADI		0.05 mg/kg bw/d
Calculated EQS values	AA-QS	27	µg/l
	$AA\text{-}QS_{BalticSea}$	2,7	µg/l
	MAC-QS	58	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	5,8	µg/l
	QS_{biota}	LogKow <3	
	overall EQS	27	µg/l
	overall $EQS_{BalticSea}$	2,7	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Abamectin**	data source	EFSA conclusion report			
Degradation	in soil		DT50 28.7 d (20°C)			
	hydrolytic, in water		pH 4-7: stable (25 °C)			
	in water		DT50 1.8-2.9 d; mean 2.4 d (20 °C)			
	in sediment		DT50 87-111 d; mean 99 d			
	in water/sediment system		DT50 87-91 d; mean 89 d (20 °C)			
	distribution to sediment		Max. in sediment 82.8 % at d 14			
	comments					
Adsorption	LOG(K_{OW})		4.4 ± 0.3; pH 7.2 ±0 .1			
	K_{OC}		1495-7893; mean 5638			
	LOG(Koc)		3,90 max			
	dependent on pH?		No			
Analysis	LOQ in water /soil		LC-MS/MS 0.05 µg/l / HPLC-MS/MS LOQ 0.5 µg/kg			
Toxicity	mammals/birds, chronic		Rat long-term and carc. NOAEL 0.12 mg/kg bw/d = NOEC 1.2 mg/kg food			
	mammals/birds, acute		Rat LD50 8.7 mg/kg bw/day (highly toxic)			
	aquatic organisms, chronic					
		fish	O. mykiss 28 d NOEC 0.52 µg/l			
			BCF 69			
		Daphnia	D. magna 21 d NOEC 0.010 µg/l			
		algae	P. subcapitata 72 h NOEC 1590 µg/l (test done with product)			
		plants	–			
		other, if tested	C. riparius 28 d NOEC spiked water 0.081 µg/l, spiked sediment NOEC 3.3 µg/kg			
			NOEC community: mesocosm 0.066 µg/l			
	aquatic organisms, acute					
		fish	O. mykiss 96 h LC50 3.6 µg/l			
		Daphnia	D. pulex 48 h EC50 0.12 µg/l			
		algae	P. subcapitata 72 h EC50 > 1590 µg/l (nom) (test done with product)			
		plants	–			
		other, if tested				
	ADI	0.0025	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	0,001	µg/l			
	$AA\text{-}QS_{BalticSea}$	0,0001	µg/l			
	MAC-QS	0,012	µg/l	AF is 10, since the range in toxicity > 100 X		
	$MAC\text{-}QS_{BalticSea}$	0,0012	µg/l			
	QS_{biota}	0,04	mg/kg food	QS_{water}	0,58 µg/l	Value above AA-QS
				$QS_{BalticSea}$	0,58 µg/l	Value above AA-QS
	overall-EQS	0,001	µg/l			
	$overall\text{-}EQS_{BalticSea}$	0,0001	µg/l			
	$QS_{sediment}$	0,033	µg/kg	QSsed		

Compound	**Aclonifen**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 29.5-93.6 (g-mean 62,3)				
	hydrolytic, in water		pH 5-9: stable				
	in water		DT50 3.2 d (pH 6,7)				
	in sediment		DT50 92 d (pH 6,7)				
	in water/sediment system		DT50 11.2 d (pH 6.7)				
	distribution		Max. in sediment 5,4 % at d 7				
	comments						
Adsorption	LOG(K_{OW})		4,37				
	K_{OC}		5318-10612				
	LOG(Koc)		4,03	max			
	dependent on pH?		No				
Analysis	LOQ in water / soil		GC-ECD 0.05 µg/l; GC/MS 0.02 µg/l* / 0.01 mg/kg				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 3.6 mg/kg bw/d = NOEC 36 mg/kg food				
	mammals/birds, acute		C. virginianus LD50 > 2000 mg/kg bw/d				
	aquatic organisms, chronic						
		fish	P. promelas 35 d NOEC 5 µg/l (nom)				
			BCF	2896			
		Daphnia	D. magna 21 d NOEC 16 µg/l (mm)				
		algae	D. subspicatus 96 h NOEC 2.5 µg/l				
		plants	L. gibba 14 d NOEC 1.2 µg/l				
		other, if tested	C. riparius 28 d, spiked water NOEC 472 µg/l (im), spiked sediment NOEC 32 mg/kg (nom)				
	aquatic organisms, acute						
		fish	O. mykiss 96 h LC50 670 µg/l (nom)				
		Daphnia	D. magna 48 h EC50 952 µg/l (mm)				
		algae	D. subspicatus 96 h ErC50 6.9 µg/l (nom)				
		plants	L. gibba 14 d ErC50 12 µg/l (mm)				
		other, if tested					
	ADI	0.07	mg/kg bw				
Calculated EQS values	$AA\text{-}QS_{water}$	0,12	µg/l				
	$AA\text{-}QS_{BalticSea}$	0,012	µg/l				
	MAC-QS	0,69	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,069	µg/l				
	QS_{biota}	0,4	mg/kg food		QS_{water}	69 ng/l	
					$QS_{BalticSea}$	35 ng/l	Value above AA-QS
	overall EQS	0,069	µg/l	based on biota-QS			
	overall $EQS_{BalticSea}$	0,012	µg/l				
	$QS_{sediment}$	0,32	mg/kg	QSsed			

Compound	**Alpha-cypermethrin**	data source	EC review report and DAR
Degradation	in soil		DT50 25-125 d, median 103 d (20°C, cis isomers of cypermethrin)
	hydrolytic, in water		pH 4, 50 °C : stable; pH 7, 20 °C : DT50 101 d; pH 9, 20 °C : DT50 7.3 d
	in water		DT50 0.4-2.1 d
	in sediment		
	in water/sediment system		DT50 6.4-35.4 d
	distribution		Max. in sediment 62 % at d 2
	comments		
Adsorption	LOG(K_{OW})		5.5 at 20°C
	K_{OC}		26492-144652; median 57889
	LOG(Koc)		5,16 max
Analysis	dependent on pH?		No
Toxicity	LOQ in water		LOQ of 0.05 µg/l; GC/MS 0.05 µg/l*
	mammals/birds, chronic		Mouse long term andd carc. NOAEL 30 mg/kg food (3 mg/kg bw/d)
	mammals/birds, acute		Rat LD50 57 mg/kg bw
	aquatic organisms, chronic	fish	P. promelas 34 d NOEC < 0.03 µg/l
			BCF 1204 (cypermethrin)
		Daphnia	D. magna 21 d NOEC 0.03 µg/l
		algae	S. capricornutum 96 h NOEC 100 µg/l; mesocosm study NOEC phytoplankton 0.375-1.875 µg/l
		plants	–
		other, if tested	C. riparius 28 d NOEC 0.024 µg/l
			mesocosm NOEC 0.003 µg/l
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 2.8 µg/l
		Daphnia	D. magna 48 h EC50 0.3 µg/l
		algae	S. capricornutum 96 h EC50 > 100 µg/l
		plants	–
		other, if tested	Gammarus sp. 24 h bioassay LC50 < 0.05-0.06 µg/l

	ADI	0.015	mg/kg bw/d					
Calculated EQS values	$AA\text{-}QS_{water}$	0,6	ng/l	AF is 5, since mesocosm study was used				
	$AA\text{-}QS_{BalticSea}$	0,06	ng/l					
	MAC-QS	5	ng/l	AF is 10, since the range in toxicity > 100 X				
	$MAC\text{-}QS_{BalticSea}$	0,5	ng/l					
	QS_{biota}	1	mg/kg food		QS_{water}	0,83	µg/l	Value above AA-QS
					$QS_{BalticSea}$	0,83	µg/l	Value above AA-QS
	overall EQS	0,6	ng/l					
	overall $EQS_{BalticSea}$	0,06	ng/l					
	$QS_{sediment}$	0,24	ng/l	QSsed	0,006	mg/kg org C		

Compound	**Amidosulfuron**	data source		EFSA conclusion report and DAR
Degradation	in soil			DT50 3 - 29 d (20°C); g-mean 16.6 d; 21 d (10°C)
	hydrolytic, in water			25°C pH 5: 33.9 d, pH 7-9: stable
	in water			DT50 10 d and 73 d
	in sediment			
	in water/sediment system			DT50 16 d and 91 d
	distribution			Max. in sediment 24.9 % at 4 d
	comments			
Adsorption	LOG(K_{OW})			pH 4: 1.07 at 23 °C, pH 7: -1.56 at 22 °C
	K_{OC}			5.7-83, mean 36.4
	LOG(Koc)			1,92 max
	dependent on pH?			No
Analysis	LOQ in water			0.05 µg/l; LC/MS 0.05 µg/l*
Toxicity	mammals/birds, chronic			Rat repr. NOAEL 22.5 mg/kg bw/d
	mammals/birds, acute			Rat LD50 > 5000 mg/kg bw
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 6.41 mg/l
				BCF –
		Daphnia		D. magna 21 d NOEC 1 mg/l
		algae		N. pelliculosa 96 h NOEC 84.2 mg/l
		plants		L. gibba 14 d NOEC 8.74 µg/l
		other, if tested		–
	aquatic organisms, acute	fish		L. macrochirus 96 h EC50 > 100 mg/l
		Daphnia		D. magna 48 h EC50 36 mg/l
		algae		N. pelliculosa 96 h ErC50 > 84.2 mg/l
		plants		L. gibba 14 d ErC50 = 17.6 µg/l, 7 d EbC50/ErC50 were ~9.2 µg/l
		other, if tested		
	ADI		0.2	mg/kg bw/d
Calculated EQS values	AA-QS_{water}		0,87	µg/l
	AA-$QS_{BalticSea}$		0,09	µg/l
	MAC-QS		0,92	µg/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,09	µg/l
	QS_{biota}	LogKow <3		
	overall EQS		0,87	µg/l
	overall $EQS_{BalticSea}$		0,09	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Azoxystrobin**	data source	EC review report, EFSA conclusion report and DAR			
Degradation	in soil		DT50 20 °C mean 279 d, 5 °C 1066 d			
	hydrolytic, in water		Stable (standard conditions)			
	in water		DT50 34-57 d			
	in sediment					
	in water/sediment system		DT50 170-294 d			
	distribution		Max. in sed 90.5 % at d 0			
	comments					
Adsorption	LOG(K_{OW})		2.5 at 20 °C			
	K_{OC}		235-594, mean 423			
	LOG(Koc)		2,77 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC/MS 0.1 µg/l; LC/MS 0.005 µg/l*			
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 18 mg/kg bw/d = NOEC 360 mg/kg food			
	mammals/birds, acute		Birds LD50 > 1000 mg/kg bw			
	aquatic organisms, chronic	fish	P. promelas 33 d NOEC 0.147 mg/l (m)			
			BCF –			
		Daphnia	D. magna 21 d NOEC 0.044 mg/l (m)			
		algae	P. subcapitata NOEC 0.038 mg/l			
		plants	NOEC not given in DAR and EFSA conclusion			
		other, if tested	C. riparius 28h NOEC 0.8 mg/l			
			M. bahia 28 d 0.00954 mg/l (mm)			
			mesocosm: no NOEC (effects at all concentrations); effects at 10 µg/l considered relatively short-lived			
	aquatic organisms, acute	fish	O. mykiss 96 h EC50 0.47 mg/l (m)		L/EC50	logL/EC50
		Daphnia	D. magna 48 h EC50 0.23 mg/l (m)		0,47	-0,33
		algae	S. costatum 72 h ErC50 0.3 mg/l (n)		0,23	-0,64
		plants	L. gibba 14 d EC50 3.2 mg/l (nom)		0,3	-0,52
		other, if tested	M. fuscus 48 h EC50 0.13 mg/l		3,2	0,51
			M. bahia 96 h 0.055 mg/l (nom)		0,13	-0,89
					0,055	-1,26
	ADI	0.2	mg/kg bw/d	SD (LogL/EC50)	0,60	>0.5
Calculated EQS values	$AA\text{-}QS_{water}$	0,95	µg/l			
	$AA\text{-}QS_{BalticSea}$	0,10	µg/l			
	MAC-QS	0,55	µg/l	Value set to AA-QS		
	$MAC\text{-}QS_{BalticSea}$	0,06	µg/l	Value set to AA-QSBalticSea		
	QS_{biota}	LogKow <3				
	overall EQS	0,95	µg/l			
	overall $EQS_{BalticSea}$	0,10	µg/l			
	$QS_{sediment}$	8	µg/l	QSsed 1,88 mg/kg org C		

Compound	**Bentazone**	data source	EC review report and DAR			
Degradation	in soil		DT50 8-102 d (20 °C), mean 45 d, 10°C 161 d			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 161 d			
	in sediment					
	in water/sediment system		DT50 523 and 908 d			
	distribution		Mainly in water phase			
	comments					
Adsorption	LOG(K_{OW})		pH 5: 0.77 at 22 °C pH 7: - 0.46 at 22 °C pH 9: - 0.55 at 22 °C			
	K_{OC}		13-176, mean 51,5			
	LOG(Koc)		2,25	max		
	dependent on pH?		Adsorption higher in acidic soil			
Analysis	LOQ in water		GC-PND 0.01 µg/l (L. of deter.); LC/MS 0.01 µg/l*			
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 14 mg/kg bw = NOEC 116.62 mg/kg food			
	mammals/birds, acute		Rat LD50 500 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC > 100 mg/l			
			BCF	–		
		Daphnia	D. magna 21 d NOEC 120 mg a.s./l ('Basagran')			
		algae	P. subcapitata 72 h NOEC 0.8 mg/l			
		plants	L. gibba 14 d NOEC 4 mg/l			
		other, if tested	X. laevis NOEC 2.5 mg/l			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 100 mg/l		100,0	2,00
		Daphnia	D. magna 96 h EC50 64 mg/l		64,0	1,81
		algae	A. flos-aque 120 h EC50 10.1 mg/l		10,1	1,00
		plants	L. gibba 14 d EC50 5.4 mg/l		5,4	0,73
		other, if tested	–	SD (LogL/EC50)		0,61 >0.5
	ADI	0.1	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	80	µg/l			
	$AA\text{-}QS_{BalticSea}$	8	µg/l			
	MAC-QS	54	µg/l	Value set to AA-QS		
	$MAC\text{-}QS_{BalticSea}$	5,4	µg/l	Value set to AA-QSBalticSea		
	QS_{biota}	LogKow <3				
	overall EQS	80	µg/l			
	overall $EQS_{BalticSea}$	8	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Beta-Cyfluthrin**	data source	EC review report and DAR
Degradation	in soil		DT50 51 d (20°C), 7 d (28 °C), 19-45 d (10 °C) (cyfluthrin)
	hydrolytic, in water		20 °C: DT50 pH 4: > 1 year, pH7: 160-270 d pH9: 33-42 h
	in water		DT50 < 1 d
	in sediment		DT50 3.3-12.4 d
	in water/sediment system		DT50 0.22-3.5 d
	distribution		Max. in sediment 68.4 % at 6 h
	comments		β-cyfluthrin and cyfluthrin have the same toxicological profile.
			β-cyfluthrin acute tox. 2-5 X that of cyfluthrin; subacute & subchronic tox. in the same range.
Adsorption	LOG(K_{OW})		5.9 (22 °C, Isomers II and IV)
	K_{OC}		64300-180290, mean 123930
	LOG(Koc)		5,26 max
	dependent on pH?		No
Analysis	LOQ in water		GC-ECD 0.02 mg/l
Toxicity	mammals/birds, chronic		Rat 90 d neurotox. NOEC 30 mg/kg food (2 mg/kg bw/d)
	mammals/birds, acute		S. canaria LD50 ca. 100 mg/kg bw
	aquatic organisms, chronic	fish	O. mykiss 58 d NOEC 0.01 µg/l (cyfluthrin)
			BCF 506
		Daphnia	D. magna 21 d NOEC 0.02 µg/l (cyfluthrin)
		algae	D. subspicatus 96 h NOEC > 10 mg/l
		plants	–
		other, if tested	C. riparius 28 d EC5 0.32 µg/l, EC15 0.36 µg/l, EC50 0.45 µg/l
			Mesocosm invertebrate NOECcommunity 0.01 µg/l (cyfluthrin)
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.068 µg/l
		Daphnia	D. magna 48 h EC50 0.29 µg/l
		algae	D. subspicatus 96 h EC50 > 10 mg/l
		plants	–
		other, if tested	
	ADI	0.003	mg/kg bw
Calculated EQS values	$AA\text{-}QS_{water}$	1	ng/l
	$AA\text{-}QS_{BalticSea}$	0,1	ng/l
	MAC-QS	6,8	ng/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	0,68	ng/l
	QS_{biota}	0,33	mg/kg food QS_{water} 0,66 µg/l Value above AA-QS
			$QS_{BalticSea}$ 0,66 µg/l Value above AA-QS
	overall EQS	1	ng/l
	overall $EQS_{BalticSea}$	0,1	ng/l
	$QS_{sediment}$	3,2	ng/l QSsed 0,21 mg/kg org C

Compound	**Bifenazate**	data source		DAR + addendums; Commission review report; dossier by Chemtura				
Degradation	in soil			DT50 < 1 d; metabolites D3598 (max DT50 0.5 d) and D1989 (max DT50 8.5 d)				
	hydrolytic, in water			pH 4: DT50 9.1 d and pH 7: DT50 0.8 d				
	in water			DT50 0.23 d				
	in sediment			DT50 0.9 d				
	in water/sediment system			DT50 0.9 d				
	distribution			Max. in sediment < 10 %				
	comments			Degradation < 2 days in soil, water and sediment; therefore no AA-QS values were derived.				
	metabolites			Formation: D3598 in soil max. 98 % and D9472 in water/sed system max. 21.6 %				
Adsorption	LOG(K_{OW})			3,4				
	K_{OC}			1778				
	LOG(Koc)			3,25				
	dependent on pH?							
Analysis	LOQ in water			HPLC 0.1 µg/l; GC/MS 0.02 µg/l*				
Toxicity	mammals/birds, chronic							
	mammals/birds, acute							
	aquatic organisms, chronic	fish						
				BCF				
		Daphnia						
		algae						
		plants						
		other, if tested						
							L/EC50	logL/EC50	
	aquatic organisms, acute	fish		L. macrochirus 96 h LC50 0.56 (mm)			0,56	-0,25	
		Daphnia		D. magna 48 h EC50 0.24 mg/l (mm)			0,24	-0,62	
		algae		S. costatum 96 h ErC50 0.36 mg/l (im)			0,36	-0,44	
		plants					0,42	-0,38	
		other, if tested		C. virginica 96 h EC50 0.42 mg/l (mm)		SD (LogL/EC50)		0,15	<0.5
Calculated EQS values	AA-QS_{water}	DT50 < 2 d							
	AA-$QS_{BalticSea}$	DT50 < 2 d							
	MAC-QS		36	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$		3,6	µg/l					
	QS_{biota}	DT50 < 2 d							
	$QS_{sediment}$	DT50 < 2 d							

Compound	D3598	data source	DAR + addendums; Commission review report; dossier by Chemtura				
Degradation	in soil		Max. DT50 0.6 d				
	hydrolytic, in water		DT50 1.2 d at pH 7				
	in water		DT50 0.4 d				
	in sediment		DT50 19.8 d				
	in water/sediment system		DT50 1.5 d				
	distribution		Max in sediment max 4.6 %				
	comments		Degradation < 2 days in soil and water; therefore no AA-QS values were derived.				
Adsorption	LOG(K_{OW})						
	K_{OC}						
	LOG(Koc)						
	dependent on pH?						
Analysis	LOQ in water		HPLC 0.1 µg/l				
Toxicity	mammals/birds, chronic						
	mammals/birds, acute						
	aquatic organisms, chronic	fish					
			BCF				
		Daphnia					
		algae					
		plants					
		other, if tested					
					L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h EC50 0.044 mg/l (mm)		0,044	-1,36	
		Daphnia	D. magna 48 h EC50 0.051 mg/l (mm)		0,051	-1,29	
		algae	P. subcapitata 96 h ErC50 > 1.8 mg/l (im)		1,8	0,26	
		plants		SD (LogL/EC50)		0,91	>0.5
		other, if tested					
	ADI						
Calculated EQS values	AA-QS_{water}	DT50 < 2 days					
	AA-$QS_{BalticSea}$	DT50 < 2 days					
	MAC-QS	0,44	µg/l				
	MAC-$QS_{BalticSea}$	0,04	µg/l				
	QS_{biota}	DT50 < 2 days					
	$QS_{sediment}$	DT50 < 2 days					

Compound	D9472	data source	DAR + addendums; Commission review report; dossier by Chemtura			
Degradation	in soil		Not a metabolite in soil			
	hydrolytic, in water		Not determined			
	in water		DT50 8.6 d			
	in sediment		DT50 50.4 d			
	in water/sediment system		DT50 8.5 d			
	distribution		D9472 in sediment max. 5,4 %			
	comments					
Adsorption	LOG(K_{OW})					
	K_{OC}					
	LOG(Koc)					
	dependent on pH?					
Analysis	LOQ in water		HPLC-UV 0.1 µg/l			
Toxicity	mammals/birds, chronic					
	mammals/birds, acute					
	aquatic organisms, chronic	fish				
			BCF			
		Daphnia				
		algae	D. subspicatus NOErC 0.11 mg/l			
		plants				
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss LC50 0.21 mg/l (mm)	0,21	0,68	
		Daphnia	D. magna EC50 0.78 mg/l (mm)	0,78	-0,11	
		algae	D. subspicatus ErC50 2.75 mg/l (mm)	2,75	0,44	
		plants	SD (LogL/EC50)		0,40	<0.5
		other, if tested				
	ADI					
Calculated EQS values	AA-QS_{water}	0,21	µg/l			
	AA-$QS_{BalticSea}$	0,021	µg/l			
	MAC-QS	21,0	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	2,10	µg/l			
	QS_{biota}	No information on LogKow and toxicity to mammals and birds				
	$QS_{sediment}$	Not derived since the amount found in sediment < 10 %				

Compound	**Bifenox**	data source	EFSA conclusion report				
Degradation	in soil		DT50 20°C 4-18 d, mean 8.3 d, 10°C 55 d				
	hydrolytic, in water		pH 4-5: stable (25°C)				
	in water						
	in sediment						
	in water/sediment system		DT50 0.11 d				
	distribution		Max. in sediment 32.4% at d 0				
	comments						
Adsorption	LOG(K_{OW})		3.64 (range 3.55 to 3.73)				
	K_{OC}		500-23000; mean 7143				
	LOG(Koc)		4,36 max				
	dependent on pH?		No				
Analysis	LOQ in water		GC-ECD + GC-MS 0.05 µg/l				
Toxicity	mammals/birds, chronic		Rat long-term & carc. NOAEL 16 mg/kg bw/d = NOEC 160 mg/kg food				
	mammals/birds, acute		Mouse LD50 1660 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.0091 mg/l (mm)				
			BCF 1500				
		Daphnia	D. magna 21 d NOEC 0.00015 mg/l (mm)				
		algae	D.subspicatus 96 h NOEC 0.000125 mg/l				
		plants	L. gibba 14 d NOEC < 0.00045 mg/L				
		other, if tested	C. riparius 28 d NOEC 0.015 mg/l (nom)				
			mesocosm: 87 d NOAEC 0.004 mg/l (nom); NOEC not available				
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 > 0.27 mg/l (mm)				
		Daphnia	D. magna 48 h EC50 0.66 mg/l (mm)				
		algae	D. subspicatus 96 h ErC50 0.000190 mg/l (nom)				
		plants	L. gibba 14 d EC50 0.0021 mg/l (mm)				
		other, if tested					
	ADI	0.3	mg/kg bw/d				
Calculated EQS values	AA-QS_{water}	12,5	ng/l				
	AA-$QS_{BalticSea}$	1,25	ng/l				
	MAC-QS	19	ng/l	AF is 10, since the range in toxicity > 100 X			
	MAC-$QS_{BalticSea}$	1,9	ng/l				
	QS_{biota}	5,33	mg/kg food		QS_{water}	3,6 µg/l	Value above AA-QS
					$QS_{BalticSea}$	3,6 µg/l	Value above AA-QS
	overall EQS	12,5	ng/l				
	overall $EQS_{BalticSea}$	1,25	ng/l				
	$QS_{sediment}$	0,15	µg/l	QSsed	0,075	mg/kg org C	

Compound	**Boscalid**	data source	DAR and LOEP in circa					
Degradation	in soil		DT50 mean 232 d, median 322 d					
	hydrolytic, in water		pH 4-9: stable					
	in water		DT50 3-9 d					
	in sediment		>> duration of experiment					
	in water/sediment system		>> duration of experiment					
	distribution							
	comments							
Adsorption	LOG(K_{OW})		2.96 (pH 7.1, 21 °C)					
	K_{OC}		507-1110 (mean 771, median 715)					
	LOG(Koc)		3,05 max					
	dependent on pH?		No					
Analysis	LOQ in water / soil		GC-MS 0.5 µg/l ; GC/MS 0.01 µg/l* / GC-MS 0.01 mg/kg					
Toxicity	mammals/birds, chronic		Rat repr. NOEC 100 mg/kg food (11 mg/kg bw/d)					
	mammals/birds, acute		C. virginianus LD50 > 2000 mg/kg bw/d					
	aquatic organisms, chronic	fish	O. mykiss 97 d NOEC 0.125 mg/l					
			BCF 125					
		Daphnia	D. magna 21 d NOEC 1.31 mg/l					
		algae	Not given in DAR					
		plants	–					
		other, if tested	C. riparius 28 d NOEC spiked water 1.0 mg/l, spiked sediment 23.26 mg/kg					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h EC50 2.7 mg/l			2,7	0,43	
		Daphnia	D. magna 48 h EC50 5.33 mg/l			5,33	0,73	
		algae	P. subcapitata 96 h ErC50 3.75 mg/l			3,75	0,57	
		plants	–		SD (LogL/EC50)		0,15	< 0.5
		other, if tested						
	ADI							
Calculated EQS values	$AA\text{-}QS_{water}$	2,5	µg/l	AF is 50, since no algae NOEC				
	$AA\text{-}QS_{BalticSea}$	0,25	µg/l					
	MAC-QS	270	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	$MAC\text{-}QS_{BalticSea}$	27	µg/l					
	QS_{biota}	3,33	mg/kg food	QS_{water}	26,64	µg/l	Value above AA-QS	
				$QS_{BalticSea}$	26,64	µg/l	Value above AA-QS	
	overall EQS	2,5	µg/l					
	overall $EQS_{BalticSea}$	0,25	µg/l					
	$QS_{sediment}$	0,23	mg/kg	QSsed				

Compound	**Bromoxynil octanoate**	data source	DAR; (EFSA report 2004); circa: list of end points 2003			
			New data by the applicant included in FEI statement 13.4.2010			
Degradation	in soil		DT50 max 1.8 d, mean 0.59 d			
	hydrolytic, in water		DT50 34.1 d at pH 5, DT50 11.5 d at pH 7			
	in water		DT50 < 1 h			
	in sediment					
	in water/sediment system		DT50 < 4 h			
	distribution					
	comments		Degradation < 2 days in soil, water and sediment; therefore no AA-QS values were derived.			
Adsorption	LOG(K_{OW})		5.9 at pH7			
	K_{OC}		184300			
	LOG(Koc)		5,07			
	dependent on pH?		No			
Analysis	LOQ in water		GC/ECD 0.1 µg/l (calculated as bromoxynil methyl ester)			
Toxicity	mammals/birds, chronic		Mouse long term and carc. NOAEL 1.3 mg/kg bw/d = NOEC 10 mg/kg food			
	mammals/birds, acute		Bromoxynil octanoate: Rat LD50 238 mg/kg bw			
	aquatic organisms, chronic	fish	P. promelas 35 d NOEC 0.0034 mg/l			
			BCF 230			
		Daphnia	D. magna NOEC 0.0025 mg/l			
		algae				
		plants				
		other, if tested	C. riparius 22 d NOEC 0.1 mg/l			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.041 mg/l		0,041	-1,39
		Daphnia	D. magna 48 h EC50 0.046 mg/l		0,046	-1,34
		algae	N. pelliculosa 120 h EC 0.043 mg/l		0,043	-1,37
		plants	L. gibba 14 d EC50 > 0.073 mg/l		0,073	-1,14
		other, if tested		SDLogL/EC50	0,12	<0.5
	ADI	0,01	mg/kg/d			
Calculated EQS values	AA-QS_{water}	DT50 < 2 d				
	AA-$QS_{BalticSea}$	DT50 < 2 d				
	MAC-QS	4,1	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	0,41	µg/l			
	QS_{biota}	DT50 < 2 d				
	$QS_{sediment}$	DT50 < 2 d				

Compound	Bromoxynil	data source		DAR; (EFSA report 2004); circa: list of end points 2003
				New data by the applicant included in FEI statement 13.4.2010
Degradation	in soil			Max DT50 5.0 d;median DT50 0.38 d
	hydrolytic, in water			pH 5-9: stable
	in water			DT50 3 d and 15 d
	in sediment			
	in water/sediment system			DT50 4 d and 7 d
	distribution			Max. in sediment 19.8 % at d 60
	comments			
Adsorption	LOG(K_{OW})			1.04 at pH 7
	K_{OC}			108-239, mean 192
	LOG(Koc)			2,38 max
	dependent on pH?			No clear pH dependence
Analysis	LOQ in water			GC/ECD 0.1 µg/l (calculated as bromoxynil methyl ester)
Toxicity	mammals/birds, chronic			A. platyrhynchos NOEC 110 mg/kg food
	mammals/birds, acute			Rat LD50 81 mg/kg bw
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 2.0 mg/l
				BCF –
		Daphnia		D. magna 21 d NOEC 3.1 mg/l
		algae		N. pelliculosa 72 h NOErC 0.016 mg/l (mm)
		plants		L. gibba NOEC 0.0047 mg/l
		other, if tested		–
	aquatic organisms, acute	fish		L. macrochirus LC50 29.2 mg/l
		Daphnia		D. magna LC50 3.1 mg/l
		algae		N. pellliculosa 72 h ErC50 >0.68 mg/l
		plants		L. gibba EC50 0.085 mg/l
		other, if tested		
	ADI		0.01	mg/kg/d
Calculated EQS values	$AA\text{-}QS_{water}$		0,47	µg/l
	$AA\text{-}QS_{BalticSea}$		0,05	µg/l
	MAC-QS		8,5	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$		0,85	µg/l
	QS_{biota}	LogKow < 3		
	overall EQS		0,47	µg/l
	overall $EQS_{BalticSea}$		0,05	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Carfentrazone-ethyl**	data source		EC review report and DAR	
Degradation	in soil			DT50 20 °C <1.3 d (pH 4.5)	
	hydrolytic, in water			pH 5: stable, pH 7: 13.7 d, pH 9: 5.1 h (20° C)	
	in water			DT50 < 0.4 d (water pH 7.85 - 8.07)	
	in sediment				
	in water/sediment system			DT50 < 0.4 d (first order)	
	distribution			No accumulation due to rapid degradation	
	comments			Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived	
	metbolites			F8426-chloropropionic acid: max. 93 % in water at d 1-2 and in sediment 12 % at d 0	
				F8426-propionic acid: max. 26 % in water at d 60 and < 5 % in sediment	
Adsorption	LOG(K_{OW})			3.36 at 20 °C	
	K_{OC}			Not applicable	
	LOG(Koc)			–	
	dependent on pH?			No	
Analysis	LOQ in water			LOD for drinking water 0.1 µg/l; GC/MS 0.02 µg/l*	
Toxicity	mammals/birds, chronic			Rat long term & carc. NOEC 50 mg/kg food (3 mg/kg bw/d)	
	mammals/birds, acute			Bobwhite quail LD50 > 2 250 mg as/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 28 d NOEC 0.11 mg/l	
				BCF 176	
		Daphnia		D. magna 21 d NOEC 0.22 mg/l	
		algae		N. pelliculosa 120 h NOEC 0.0019 mg/l	
		plants		L. gibba 14 d NOEC 0.0022 mg/l (im)	
		other, if tested		C. riparius 21 d NOEC 7.4 mg/l	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 1.6 mg/l	
		Daphnia		D. magna 48 h EC50 > 9.8 mg/l	
		algae		N. pelliculosa 120 h EC50 0.0077 mg/l	
		plants		L. gibba 14 d EC50 0.0057 mg/l (im)	
		other, if tested			
	ADI		0.03	mg/kg bw	
Calculated EQS values	AA-QS_{water}	DT50 < 2 d			
	AA-$QS_{BalticSea}$	DT50 < 2 d			
	MAC-QS		0,57	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,06	µg/l	
	QS_{biota}	DT50 < 2 d			
	$QS_{sediment}$	DT50 < 2 d			

Compound	**Chloridazon**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 8.6-173.9 d (20 °C/pF2), mean/median 43.1 / 57.9 d			
	hydrolytic, in water		pH 5-9 stable (25 °C)			
	in water		DT50 125.5 d			
	in sediment					
	in water/sediment system		DT50 182 d			
	distribution		Max. in sediment 34.0 % at d 60 d			
	comments					
Adsorption	LOG(K_{OW})		1.2 at 25 °C			
	K_{OC}		199			
	LOG(Koc)		2,30			
	dependent on pH?		No			
Analysis	LOQ in water		HPLC-DAD 0.05µg/l			
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 13 mg/kg bw/d = NOEC 130 mg/kg food			
	mammals/birds, acute		Rat (female) LD50 2140 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 3.16 mg/l			
			BCF –			
		Daphnia	D. magna 21 d NOEC 10 mg/l			
		algae	P.subcapitata 72 h NOEC 0.1 mg/l			
		plants	L. gibba 7 d NOEC 0.1 mg/l			
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 41.3 mg/l	41,3	1,62	
		Daphnia	D. magna 48 h EC50 132 mg/l	132	2,12	
		algae	P. subcapitata 72 h ErC50 3.7 mg/l	3,70	0,57	
		plants	L. gibba 7 d EbC50 3.03 mg/l, ErC50 >3.16 mg/l	3,03	0,48	
		other, if tested	SD (LogL/EC50)		0,80	>0.5
	ADI	0.1	mg/kg bw			
Calculated EQS values	AA-QS_{water}	10	µg/l			
	AA-$QS_{BalticSea}$	1	µg/l			
	MAC-QS	30	µg/l			
	MAC-$QS_{BalticSea}$	3,0	µg/l			
	QS_{biota}	LogKow <3				
	overall EQS	10	µg/l			
	overall $EQS_{BalticSea}$	1	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Chlormequat chloride**	data source	EFSA conclusion report and DAR
Degradation	in soil		DT50 17.0-31.6 d
	hydrolytic, in water		pH 4-9: stable
	in water		DT50 0.5 d
	in sediment		
	in water/sediment system		DT50 0.9-6.6 d (mean 3.75)
	distribution		Max. in sediment 63.3% at d 30
	comments		
Adsorption	LOG(K_{OW})		-3.08 (pH 4), -3.47 (pH 7), -3.07 (pH 10) (at 20 °C)
	K_{OC}		Not given
	LOG(Koc)		–
	dependent on pH?		
Analysis	LOQ in water		Data requirement
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 14 mg/kg bw/d = NOEC 116.62 mg/kg food
	mammals/birds, acute		Rabbit LD50 115 mg/kg bw/d
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 43.1 mg/l (nom)
			BCF –
		Daphnia	D. magna 21 d NOEC 2.4 mg/l (nom)
		algae	D. subspicatus 72 h NOEC 63 mg/l
		plants	L. gibba 7 d NOEC 0.1 mg/l
		other, if tested	–
	aquatic organisms, acute	fish	O. mykiss 96 hr (flowthrough) LC50 >100 mg/l (nom)
		Daphnia	D. magna 48 h EC50 31.7 mg/l (nom)
		algae	D. subspicatus 72 h ErC50 1335 mg/l
		plants	L. gibba 7 d ErC50 28 mg/l (nom)
		other, if tested	
	ADI	0.04	mg/kg bw/d
Calculated EQS values	AA-QS_{water}	10	µg/l
	AA-$QS_{BalticSea}$	1	µg/l
	MAC-QS	280	µg/l
	MAC-$QS_{BalticSea}$	28	µg/l
	QS_{biota}	LogKow <3	
	overall EQS	10	µg/l
	overall $EQS_{BalticSea}$	1	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Chlorothalonil**	data source	EC report	
Degradation	in soil		DT50: 20 °C 0.3-87 d, mean 15.7 d, 10°C 33 d, field studies (locations relevant for EU) 18-70 d	
	hydrolytic, in water		pH 5-7: stable; pH 9 DT50 16-38 d	
	in water		DT50 2.5 h	
	in sediment			
	in water/sediment system		DT50 2.5 h	
	distribution		Max in sediment: 4.7% at 0.25 d; after 14 d <1%	
	comments		Degradation < 2 days in water and sediment; therefore no AA-QS values were derived.	
	metabolites		No metabolites >10% in water; in sediment trichloro- 1,3-cyanobenzene 20% at 1 d and 12% at 14 d	
Adsorption	LOG(K_{OW})		2.94 at 25 °C, pH neutral	
	K_{OC}		300-7000; median 850	
	LOG(Koc)		3,8 max	
	dependent on pH?			
Analysis	LOQ in water		GC/MS 0.02 µg/l*	
Toxicity	mammals/birds, chronic		NOAEL rat 90 d 1.5 mg/kg bw/d = NOEC 15 mg/kg food	
	mammals/birds, acute		LD50 bird >2000 mg/kg bw	
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC mean 0.003 mg/l	
			BCF 2300	
		Daphnia	D. magna 21 d NOEC mean 0.0085 mg/l	
		algae	N. pelliculosa 120 h NOEbC 0.0035 mg/l	
		plants	L. gibba 14 d NOEC 0.29 mg/l	
		other, if tested	C. riparius 28 d NOEC 0.040 mg/l	
	aquatic organisms, acute	fish	G. maculatus 96 h LC50 0.016 mg/l	
		Daphnia	D. magna 48 h EC50 0.038 mg/l	
		algae	N. pelliculosa 120 h EbC50 0.0096 mg/l	
		plants	–	
		other, if tested	SSD: HC5 95% cf 0.01 mg/l (0.005- 0.016), n=36, Sample standard deviation 0.5219	
			A. gouldi 96 h LC50 0.012 mg/l	
			C. virginica 96 h EC50 mean 0.011 mg/l	
	ADI	0.015	mg/kg bw/d	
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 days		
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 days		
	MAC-QS	1	µg/l	AF is 10, since based on SSD
	$MAC\text{-}QS_{BalticSea}$	0,2	µg/l	AF is 50, since an additional marine species (oyster) was tested
	QS_{biota}	DT50 < 2 days		
	$QS_{sediment}$	DT50 < 2 days		

Compound	**Chlorpropham**	data source	EC conclusion report and DAR					
Degradation	in soil		DT50 20°C 22 and 27 d					
	hydrolytic, in water		pH 4-9: stable (20 °C)					
	in water		DT50 10.2-21.2 d, mean 18 d					
	in sediment		DT50 18.7-54.9 d, mean 39 d					
	in water/sediment system		DT50 19.3-77 d, mean 44 d					
	distribution		Max. in sediment 64 % at d 14					
	comments		-					
Adsorption	LOG(K_{OW})		pH 4-9: 3.8 (20 °C)					
	K_{OC}		260-480; mean 340					
	LOG(Koc)		2,68	max				
	dependent on pH?		No					
Analysis	LOQ in water		SPE + GC-EC 0.05 µg/l / GC/MS 0.01 µg/l*					
Toxicity	mammals/birds, chronic		Dog 90 d NOAEL 5 mg/kg bw/d = NOEC 200 mg/kg food					
	mammals/birds, acute		Bird LD50 >2000 mg/kg bw					
	aquatic organisms, chronic	fish	B. rerio 34 d NOEC 0.32 mg/l					
			BCF	144				
		Daphnia	D. magna 21 d NOEC 1.0 mg/l					
		algae	P. subcapitata 96h NOEC 0.46 mg/l					
		plants	L. minor NOEC biomass 0.46 mg/l					
		other, if tested						
							L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 7.5 mg/l				7,5	0,88
		Daphnia	D. magna 48 h EC50 3.7 mg/l				3,7	0,57
		algae	N. pelliculosa 96 h EbC50 1.0 mg/l				1	0,00
		plants	L. minor 7 d EbC50 1.67 mg/l, ErC50 3.82 mg/l				3,82	0,58
		other, if tested				SD (LogL/EC50)		0,37 < 0.5
	ADI	0.05	mg/kg bw/d					
Calculated EQS values	AA-QS_{water}	32	µg/l					
	AA-$QS_{BalticSea}$	3,2	µg/l					
	MAC-QS	100	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$	10	µg/l					
	QS_{biota}	6,67	mg/kg food	QS_{water}	46,3	µg/l	Value above AA-QS	
				$QS_{BalticSea}$	46,3	µg/l	Value above AA-QS	
	overall EQS	32	µg/l					
	overall $EQS_{BalticSea}$	3,2	µg/l					
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia > 0,1 mg/l						

Compound	**Clopyralid**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 13-65 d, mean 34 d (20°C); 10°C mean 124 d				
	hydrolytic, in water		pH 5-9: stable				
	in water		DT50 128-167 d, mean 148 d				
	in sediment		DT50 not calculated				
	in water/sediment system		DT50 not determined				
	distribution		Max. in sediment 30.6 % at 100 d				
	comments						
Adsorption	LOG(K_{OW})		-2.53				
	K_{OC}		0.4-12.9				
	LOG(Koc)		1,1	max			
	dependent on pH?		Limited evidence of smaller mobility in acidic soil				
Analysis	LOQ in water		GC/MSD 0.05 µg/l / LC/MS 0.10 µg/l*				
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 15 mg/kg bw/d = NOEC 300 mg/kg food				
	mammals/birds, acute		A. platyrhynchos LD50 1465 mg/kg bw				
	aquatic organisms, chronic	fish	P. promelas NOEC 10.8 mg/l				
			BCF	<1			
		Daphnia	D. magna NOEC 17 mg/l				
		algae	A. flos-aquae 120 h NOEC 24.2 mg/l				
		plants	L. gibba 14d NOEC 7.2 mg/l				
		other, if tested	C. riparius NOEC 50 mg/l				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss LC50 >99 mg/l, 53 mg/l with formulation			99	2,00
		Daphnia	D. magna EC50 >99.0 mg/l			99	2,00
		algae	A. flos-aquae 120 h ErC50 37.1 mg/l			37,1	1,57
		plants	L. gibba 14d EC50 89 mg/l			89	1,95
		other, if tested			SD (LogL/EC50)		0,21 <0.5
	ADI	0.15	mg/kg bw/d				
Calculated EQS values	$AA\text{-}QS_{water}$	0,72	mg/l				
	$AA\text{-}QS_{BalticSea}$	0,07	mg/l				
	MAC-QS	3,71	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	$MAC\text{-}QS_{BalticSea}$	0,371	mg/l				
	QS_{biota}	LogKow <3					
	overall EQS	0,72	mg/l				
	overall $EQS_{BalticSea}$	0,07	mg/l				
	$QS_{sediment}$	0,5	mg/l	QSsed	0,2 mg/kg org C		

Compound	**Clothianidin**	data source		EC review report and DAR		
Degradation	in soil			DT50 20°C 143-1001 d, median 545 d		
	hydrolytic, in water			pH 4-9: stable		
	in water			DT50 30.8-49.8 d		
	in sediment					
	in water/sediment system			DT50 48.0-64.8 d		
	distribution			Sediment: max. 37.3% at 7 d		
	comments					
Adsorption	LOG(K_{OW})			0.9 (pH 4-10, 25°C)		
	K_{OC}			84-345, mean 160, median 123		
	LOG(Koc)			2,54 max		
	dependent on pH?			–		
Analysis	LOQ in water			0.05 µg/l		
Toxicity	mammals/birds, chronic			Rat long term & carc. NOAEL 9.7 mg/kg bw/d = NOEC 80.8 mg/kg food		
	mammals/birds, acute			Mouse LD50 389 mg/kg bw		
	aquatic organisms, chronic	fish		P. promelas 28 d NOEC 20 mg/l		
				BCF –		
		Daphnia		D. magna 21 d NOEC 0.12 mg/l		
		algae		S. capricornutum 96 h NOErC 15 mg/l		
		plants		L. gibba 14 d NOEC 59 mg/l		
		other, if tested		C. riparius 28 d EC15 0.72 µg/l		
				Mesocosm NOEC community 0.986 µg/l		
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 > 104.2 mg/l		
		Daphnia		D. magna 48 h LC50 40 mg/l		
		algae		P. subcapitata 96 h ErC50 > 120 mg/l		
		plants		L. gibba 14 d EC50 > 121 mg/l		
		other, if tested		C. riparius 48 h EC50 0.029 mg/l		
	ADI		0.097	mg/kg bw/d		
Calculated EQS values	$AA\text{-}QS_{water}$		0,20	µg/l	AF is 5, since mesocosm study was used	
	$AA\text{-}QS_{BalticSea}$		0,02	µg/l		
	MAC-QS		2,9	µg/l	AF is 10, since the range in toxicity > 100 X	
	$MAC\text{-}QS_{BalticSea}$		0,29	µg/l		
	QS_{biota}	LogKow < 3				
	overall EQS		0,20	µg/l		
	overall $EQS_{BalticSea}$		0,02	µg/l		
	$QS_{sediment}$		7,2	ng/l	QSsed	0,60 µg/kg org C

Compound	**Cyazofamid**	data source	EC review report and DAR				
Degradation	in soil		DT50 6.4-15.1 d (20° C); 10° C 36.8 d				
	hydrolytic, in water		pH 5-9: ~25-27 d at 20° C				
	in water		DT50 4.9-7.4 d (bi-exp.), 8.7-9.9 d (1st order)				
	in sediment		–				
	in water/sediment system		DT50 10.8 - 16.5 d				
	distribution		Max. in sediment 35 % d 7				
	comments						
Adsorption	LOG(K_{OW})		3.2 at 25°C				
	K_{OC}		657 - 2900 (mean 1338)				
	LOG(Koc)		3,46 max				
	dependent on pH?						
Analysis	LOQ in water		HPLC-UV 0.1 µg/l; LC/MS 0.01 µg/l*				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 29.51 mg/kg bw/d = NOEC 295.1 mg/kg food				
	mammals/birds, acute		A. platyrhynchos and C. virginianus LD50 > 2 000 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 0.13 mg/l				
			BCF 286				
		Daphnia	D. magna 21 d NOEC 0.11 mg/l				
		algae	P. subcapitata 96 h NOEC 0.01 mg/l				
		plants	–				
		other, if tested	C. riparius 23 d NOEC 0.1 mg/l				
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 0.10 mg/l				
		Daphnia	D. magna EC50 0.19 mg/l				
		algae	P. subcapitata 96 h EC50 >0.10 mg/l				
		plants	–				
		other, if tested	C. riparius 48 h LC50 >100 mg/l				
	ADI	0.17	mg/kg/d				
Calculated EQS values	$AA\text{-}QS_{water}$	1	µg/l				
	$AA\text{-}QS_{BalticSea}$	0,1	µg/l				
	MAC-QS	19	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	1,9	µg/l				
	QS_{biota}	3,3	mg/kg food	QS_{water}	11,5	µg/l	Value above AA-QS
				$QS_{BalticSea}$	11,5	µg/l	Value above AA-QS
	overall EQS	1	µg/l				
	overall $EQS_{BalticSea}$	0,1	µg/l				
	$QS_{sediment}$	1	µg/l	QSsed	0,7	mg/kg org C	

Compound	**Cymoxanil**	data source	EFSA conclusion report and DAR
Degradation	in soil		DT50 0.2-7.3 d, mean 1.2 d
	hydrolytic, in water		pH 4-5: stable, pH 7: 1.1-2.1 d, pH 9: 0.02-0.04 d (20-25 °C)
	in water		DT50 0.3 d
	in sediment		–
	in water/sediment system		DT50 0.3 d
	distribution		Max. in sediment 3.9 % at 1 d
	comments		Degradation < 2 days in water and sediment; therefore no AA-QS values were derived.
	metabolites		IN-KQ960: max. in soil 6.3 % d 3, DT50 8-11.2 d in soil
			IN-KQ960: Max. in sediment 5.5 % at d 1; mean DT50 47.4 d in water/sed)
Adsorption	LOG(K_{OW})		0.59-0.67 pH5-7
	K_{OC}		15.1-87.1, mean 43.6
	LOG(Koc)		1,94 max
	dependent on pH?		No
Analysis	LOQ in water		HPLC-UV 0.1 µg/l / LC/MS 0.05 µg/l*
Toxicity	mammals/birds, chronic		Dog long term and carc. NOAEL 1.3 mg/kg bw/day = NOEC 52 mg/kg food
	mammals/birds, acute		Rat LD50 960 mg/kg bw; Metabolite IN-3204: LD50 > 7500 mg/kg bw
	aquatic organisms, chronic	fish	O. mykiss 90 d NOAEL 0.044 mg/l (mm)
			BCF –
		Daphnia	D. magna 21 d NOEC 0.067 mg/l (mm)
		algae	A. flos-aquae NOEC 0.0652 mg/l (im)
		plants	L. gibba NOEC 0.7 mg/l (im)
		other, if tested	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 29 mg/l mm
		Daphnia	D. magna 48 h EC50 27 mg/l
		algae	A. flos-aquae 96 h EC50 0.254 mg/l (im)
		plants	L. gibba 14 d LCr50 >0.7 mg/l
		other, if tested	
	ADI	0.013	mg/kg bw/d
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 days	
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 days	
	MAC-QS	25,4	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	2,54	µg/l
	QS_{biota}	DT50 < 2 days	
	$QS_{sediment}$	DT50 < 2 days	

Compound	**Cypermethrin**	data source	EC review report and DAR				
Degradation	in soil		DT50 (20-22°C): cis-isomer 31-107 d; trans-isomers 13-58 d				
	hydrolytic, in water		pH3-7: cis and trans-isomers stable (25°C); pH8 DT50 5.1-21.2 d				
	in water		DT50 3 d				
	in sediment						
	in water/sediment system		DT50 17 d				
	distribution		Max. in sediment 42% at d 2				
	comments						
Adsorption	LOG(K_{OW})		Range isomer pairs : 5.3 to 5.6 at 25°C				
	K_{OC}		26492-144652				
	LOG(Koc)		5,16 max				
	dependent on pH?		No				
Analysis	LOQ in water		GC-ECD 0.01 µg/l; GC/MS α-cypermethrin 0.05 µg/l*				
Toxicity	mammals/birds, chronic		Rat long term & carc. NOEC 100 mg/kg food (5 mg/kg bw/d)				
	mammals/birds, acute		Rat LD50 287 mg/kg bw				
	aquatic organisms, chronic	fish	P. promelas 34 d NOEC 0.03 µg/l				
			BCF 1204				
		Daphnia	D. magna 21 d NOEC 0.04 µg/l				
		algae	P. subcapitata 96 h NOEC 100 µg/l; 0.005 µg/l based on mesocosm study				
		plants	–				
		other, if tested	Mesocosm overall NOEC <0.0016 µg/l (lowest tested conc.)				
			Chironomidae NOEC mesocosm 0.005 µg/l				
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 2.8 µg/l, S. erythropthalmus 96 h LC50 0.4-0.5 µg/l, C. carpio 96 h LC50 0.5-1.7 µg/l				
		Daphnia	D. magna 48 h EC50 0.3 µg/l				
		algae	P. subcapitata 96 h EC50 > 100 µg/l, the quality of the study is limited				
		plants	–				
		other, if tested					
	ADI	0.05	mg/kg bw/d				
Calculated EQS values	$AA\text{-}QS_{water}$	0,32	ng/l	AF is 5, since mesocosm study was used			
	$AA\text{-}QS_{BalticSea}$	0,03	ng/l				
	MAC-QS	3	ng/l	AF is 100, since no good acute study for algae			
	$MAC\text{-}QS_{BalticSea}$	0,3	ng/l				
	QS_{biota}	3,33	mg/kg food		QS_{water}	2,8 µg/l	Value above AA-QS
					$QS_{BalticSea}$	2,8 µg/l	Value above AA-QS
	overall EQS	0,32	ng/l				
	overall $EQS_{BalticSea}$	0,03	ng/l				
	$QS_{sediment}$	0,05	ng/l	QSsed	1,3 µg/kg org C		

Compound	**Cyprodinil**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 31-41 d, mean 37 d (20°C) pH 6.0-7.7			
	hydrolytic, in water		pH 4-9: stable			
	in water		DT50 2.1-5.4 d			
	in sediment		DT50 154-396 d			
	in water/sediment system		DT50 106-178 d			
	distribution		Max. in sediment 87.3 % at 14 d			
	comments					
Adsorption	LOG(K_{OW})		4.0 at pH 5-9.0 (25 °C)			
	K_{OC}		1536-2012 (mean)			
	LOG(Koc)		3,30 max			
	dependent on pH?					
Analysis	LOQ in water / soil		HPLC-UV 0.10 µg/l; GC/MS 0.005 µg/l* / HPLC-UV 0.01 mg/kg; GC/MSC 0.01 mg/kg*			
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 3.14 mg/kg bw/d = NOEC 31.4 mg/kg food			
	mammals/birds, acute		A. platyrhynchos LD50 > 500 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.083 mg/l			
			BCF 393			
		Daphnia	D. magna 21 d NOEC 0.0018 mg/l			
		algae	P. subcapitata 72 h NOErC 0.4 mg/l			
		plants	L. gibba 14 d NOEC 4.42 mg/l			
		other, if tested	C. riparius 27 d NOEC 80 mg/kg sed.			
	aquatic organisms, acute	fish	L. macrochirus 96 h static LC50 2.17 mg/l			
		Daphnia	D. magna 48 h EC50 0.033 mg/l			
		algae	N. pelliculosa 72 h EC50 2.11 mg/l			
		plants	L. gibba 14 d EC50 7.71 mg/l			
		other, if tested				
	ADI	0.03	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	0,18	µg/l			
	$AA\text{-}QS_{BalticSea}$	0,02	µg/l			
	MAC-QS	3,3	µg/l	AF is 10, since the range in toxicity > 100 X		
	$MAC\text{-}QS_{BalticSea}$	0,33	µg/l			
	QS_{biota}	0,349	mg/kg food	QS_{water}	1 µg/l	Value above AA-QS
				$QS_{BalticSea}$	1 µg/l	Value above AA-QS
	overall EQS	0,18	µg/l			
	overall $EQS_{BalticSea}$	0,02	µg/l			
	$QS_{sediment}$	0,8	mg/kg sediment	QSsed		

Compound	**Daminozide**	data source		EC review report and DAR
Degradation	in soil			DT50 20°C <1d
	hydrolytic, in water			pH 5-9: stable
	in water			DT50 1 d
	in sediment			
	in water/sediment system			DT50 1 d
	distribution			Max.in sed. 6.7 % at d 1
	comments			Degradation < 2 days in soil, water and sediment; therefore no AA-QS values were derived.
	metabolites			Biodegradadation creates formaldehyde
Adsorption	LOG(K_{OW})			pH5-9: -1.48- - 1.51
	K_{OC}			0-47, mean 17,8
	LOG(Koc)			1,67 max
	dependent on pH?			No
Analysis	LOQ in water			GC-MS 0.5 µg/l
Toxicity	mammals/birds, chronic			Mouse long term and carc. NOAEL 45 mg/kg bw/d= 300 mg/kg food
	mammals/birds, acute			Rat LD50 >5000 mg/kg bw
	aquatic organisms, chronic	fish		–
				BCF –
		Daphnia		–
		algae		C. vulgaris 96 h NOEC 80 mg/l
		plants		Lemna sp. 7 d NOEC >127 mg/l
		other, if tested		
	aquatic organisms, acute	fish		O. mykiss LC50 96h 149 mg/l
		Daphnia		D. magna 96 h EC50 75.5 mg/l
		algae		C. vulgaris 96 h EC50 > 80 mg/l
		plants		
		other, if tested		
	ADI		0.45	mg/kg bw/d
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 d		
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 d		
	MAC-QS		1,49	mg/l
	$MAC\text{-}QS_{BalticSea}$		0,149	mg/l
	QS_{biota}	DT50 < 2 d		
	$QS_{sediment}$	DT50 < 2 d		

Compound	Formaldehyde	data source	EC review report and Hazardous Substances Databank
Formation	in soil		Aerobic: 21% at 16 h
	in water		Biotic: 3.2 % and 6.4 % at 0 h; 2.5 % and 4.3 % at 7 h; 9.0 % and 11.2 % at 21 h
Degradation	in soil		
	hydrolytic, in water		Stable
	in water		DT100 30 h aerobic
	in sediment		
	in water/sediment system		
	distribution		Max. in sediment 9.5% at d 7
	comments		Readily biodegradable
	metabolites		
Adsorption	LOG(K_{OW})		0.35
	K_{OC}		37 (estimate)
	LOG(Koc)		1,57
	dependent on pH?		
Analysis	LOQ in water		
Toxicity	mammals/birds, chronic		–
	mammals/birds, acute		–
	aquatic organisms, chronic	fish	–
			BCF 3
		Daphnia	–
		algae	S. quadricauda 7d NOEC 0.875 mg/l
		plants	
		other, if tested	
	aquatic organisms, acute	fish	M. saxatilis 96h LC50 1.84 mg/l
		Daphnia	Cypridopsis sp. 96h LC50 0.43 mg/l
		algae	–
		plants	–
		other, if tested	Chironomus sp. 96h LC50 158 mg/l
			Helisoma sp. 96h LC50 38 mg/l
	ADI		R. pipiens larvae 72h LC50 8 mg/l
Calculated EQS values	AA-QS_{water}	DT50 < 2 d	
	AA-$QS_{BalticSea}$	DT50 < 2 d	
	MAC-QS	43	µg/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$	4,3	µg/l
	QS_{biota}	DT50 < 2 d	
	$QS_{sediment}$	DT50 < 2 d	

Compound	**Deltamethrin**	data source	EC review report, LOEP and DAR + addendums			
Degradation	in soil		DT50 18-35 d, mean 26 d (25 °C); 10 °C mean 45 d			
	hydrolytic, in water		pH 5-7: stable, pH 8: DT50 31 d, pH 9: DT50 2.5 d			
	in water		Worst-case DT50 17 h			
	in sediment		–			
	in water/sediment system		DT50 40-90 d, median 65 d, pH 8.0-9.1			
	distribution		Max. in sediment 89% at d 4			
	comments					
Adsorption	LOG(K_{OW})		4.6 (25°C, pH 7.6)			
	K_{OC}		460 000-16 300 000, mean 10 240 000			
	LOG(Koc)		7,2 max			
	dependent on pH?		No			
Analysis	LOQ in water		SPE+GC-EDC+GC/MS/MS 0.003 µg/l; GC/MS 0.20 µg/l*			
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 1 mg/kg bw/d = NOEC 10 mg/kg food			
	mammals/birds, acute		Rat LD50 87 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC <0.032 µg/l (m)			
			BCF 1400			
		Daphnia	D. magna 21 d NOEC 0.0041 µg/l (m)			
		algae	Microcosm study: "No effect on the phytoplankton biomass was observed"			
		plants	–			
		other, if tested	C. riparius 28 d NOEC 0.010 µg/l (nom)			
			Microcosm: NOEC algivorous ciliates and adult chaoboridae 1.0 ng/l; chaoboridae larvae < 1 ng/l			
	aquatic organisms, acute	fish	O. mykiss (formulation) 96 h 0.26 µg/l LC50 (m)			
		Daphnia	D. magna 48 h EC50 0.56 µg/l (m) (species relatively insensitive)			
		algae	S. capricornutum: uncertain value, but probably only moderate toxicity			
		plants	–			
		other, if tested	G. pulex & D. hyalina 48 h LC50 0.03 µg/l			
	ADI	0.01	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	0,2	ng/l	AF is 5, since mesocosm study was used		
	$AA\text{-}QS_{BalticSea}$	0,02	ng/l			
	MAC-QS	0,3	ng/l			
	$MAC\text{-}QS_{BalticSea}$	0,03	ng/l			
	QS_{biota}	0,11	mg/kg food	QS_{water}	0,08 µg/l	Value above AA-QS
				$QS_{BalticSea}$	0,08 µg/l	Value above AA-QS
	overall EQS	0,2	ng/l			
	overall $EQS_{BalticSea}$	0,02	ng/l			
	$QS_{sediment}$	0,01	ng/l	QSsed	4,6 µg/kg org C	

Compound	**Desmedipham**	data source	EC review report and DAR					
Degradation	in soil		DT50 3.2-175 d, median 17 d (20 °C)					
	hydrolytic, in water		pH 5: 39-70 d; pH 7: 12-19.6 h; pH 9 7-10 min (22-25°C)					
	in water		DT50 0.1-3.1 d					
	in sediment							
	in water/sediment system		DT50 2.2-4.0 d					
	distribution		Max. in sediment 9 % at 14 d					
	comments							
Adsorption	LOG(K_{OW})		3.39 at 22 °C and pH 3.9					
	K_{OC}		Duo to rapid hydrolysis not possible to measure					
	LOG(Koc)							
	dependent on pH?							
Analysis	LOQ in water		HPLC- MS/MS 0.01 µg/l					
Toxicity	mammals/birds, chronic		Rat repr. NOEC 50 mg/kg food (4 mg/kg bw/d)					
	mammals/birds, acute		Bird LD50 > 2000 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 0.20 mg/l					
			BCF 157.3					
		Daphnia	D. magna 21 d NOEC 0.01 mg/l					
		algae	P. subcapitata 96 h NOEC 0.0067 mg/l					
		plants	L. gibba 7 d NOEC 0.52 mg/l					
		other, if tested	C. riparius 28 d NOEC 1.0 mg/l					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 0.25 mg/l			0,25	-0,60	
		Daphnia	D. magna 48 h EC50 0.45 mg/l			0,45	-0,35	
		algae	P. subcapitata ErC50 96 h 0.06 mg/l			0,06	-1,22	
		plants	L. gibba 7 d EC50 > 5.2 mg/l			5,2	0,72	
		other, if tested				SD (LogL/EC50)	0,81	>0.5
	ADI	0.03	mg/kg bw/d					
Calculated EQS values	$AA\text{-}QS_{water}$	0,67	µg/l					
	$AA\text{-}QS_{BalticSea}$	0,067	µg/l					
	MAC-QS	0,60	µg/l	Value set to AA-QS				
	$MAC\text{-}QS_{BalticSea}$	0,06	µg/l	Value set to AA-QSBalticSea				
	QS_{biota}	1,667	mg/kg food	QS_{water}	10,60	µg/l	Value above AA-QS	
				$QS_{BalticSea}$	10,60	µg/l	Value above AA-QS	
	overall EQS	0,67	µg/l					
	overall $EQS_{BalticSea}$	0,067	µg/l					
	$QS_{sediment}$	Not found in sediment > 10 %						

Compound	**Dicamba**	data source	DAR and LoEP			
Degradation	in soil		DT50 4.4 d			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 40 d			
	in sediment		–			
	in water/sediment system		DT50 41 d			
	distribution		Max. in sediment 5.5-6% at 7 d			
	comments					
Adsorption	LOG(K_{OW})		pH 5.0: -0.55; pH 6.8: -1.8; pH 8.9; -1.9			
	K_{OC}		7.27-21.2			
	LOG(Koc)		1,33 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC-MSD 0.1 µg/l; LC/MS 0.05 µg/l*			
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 35 mg/kg bw/d = NOEC 291.55 mg/kg food			
	mammals/birds, acute		C. virginianus LD50 216mg/kg bw/d			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 180 mg/l (nom)			
			BCF –			
		Daphnia	D. magna 21 d NOEC 97 mg/l			
		algae	S. costatum 72 h NOEC 0.011 mg/l			
		plants	L. gibba 14 d NOEC 0.20 mg/l (mm); M. spicatum 26 d NOEC 0.45 mg/l			
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	C. carpio 96 h EC50 > 100 mg/l	100,0	2,00	
		Daphnia	D. magna 48 h EC50 (formulation) > 41.0 (nom)	41,0	1,61	
		algae	A. flos-aquae 72 h ErC50> 3.2 mg/l	3,2	0,51	
		plants	L. gibba 14 d EbC50 > 3.25 mg/l (mm), M. spicatum 26 d ErC50 > 0.45 mg/l	0,5	-0,35	
		other, if tested	SD (LogL/EC50)		1,07	>0.5
	ADI	0,3	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	1,1	µg/l			
	$AA\text{-}QS_{BalticSea}$	0,11	µg/l			
	MAC-QS	4,5	µg/l			
	$MAC\text{-}QS_{BalticSea}$	0,45	µg/l			
	QS_{biota}	LogKow <3				
	overall EQS	1,1	µg/l			
	overall $EQS_{BalticSea}$	0,11	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Dichlorprop-P**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 14 d (25° C), 7.4-16.5 d (20 °C), 37.4 d (10 °C)			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 ~20 d			
	in sediment					
	in water/sediment system		DT50 ~15 d			
	distribution		Max. in sediment 11.9 % at 7 d			
	comments					
Adsorption	LOG(K_{OW})		pH 5: 1.029 pH 7: -0.562 pH 9: -0.873 (20 °C)			
	K_{OC}		12.9-83.7, mean 44			
	LOG(Koc)		1,92 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC-MSD 1 µg/l; LC/MS 0.01 µg/l*			
Toxicity	mammals/birds, chronic		Mouse NOAEL 18 month 6 mg/kg bw/d = NOEC 49.8 mg/kg food			
	mammals/birds, acute		Rat LD50 567 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 100 mg/l			
			BCF –			
		Daphnia	D. magna 21 d NOEC >100 mg/l			
		algae	A. flos aquae 72 h NOEC 6.13 mg/l			
		plants	L. gibba 14 d NOEC 0.20 mg/l			
		other, if tested	–			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss and L. macrochirus 96 h LC50 >109 mg/l		109,0	2,04
		Daphnia	D. magna 48 h EC50 >100 mg/l		100,0	2,00
		algae	A. flos aquae 72 h ErC50 26.5 mg/l		26,5	1,42
		plants	L. gibba 14 d EC50 3.4 mg/l		3,4	0,53
		other, if tested	–	SD (LogL/EC50)		0,70 >0.5
	ADI	0.06	mg/kg bw/d			
Calculated EQS values	AA-QS_{water}	20	µg/l			
	AA-$QS_{BalticSea}$	2	µg/l			
	MAC-QS	34	µg/l			
	MAC-$QS_{BalticSea}$	3,4	µg/l			
	QS_{biota}	LogKow <3				
	overall EQS	20	µg/l			
	overall $EQS_{BalticSea}$	2	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Difenoconazole**	data source	DAR and LOEP				
Degradation	in soil		DT50 58-105d, median 86 d (20 °C/pF2)				
	hydrolytic, in water		pH 5-9: stable (25°C)				
	in water		DT50 0.8-2.0 d, mean 1.1 d				
	in sediment		–				
	in water/sediment system		DT50 307-324 d				
	distribution		Max. in sediment 99.8 at d 42				
	comments						
Adsorption	LOG(K_{OW})		4.36 ± 0.02 at 25 °C and at pH ~8				
	K_{OC}		400-7730, mean 3760				
	LOG(Koc)		3,89 max				
	dependent on pH?		No				
Analysis	LOQ in water /soil		GC-ECD 0.1 µg/l / HPLC-MS/MS; 0.01 mg/kg				
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 1.0/1.3 (♂/♀) mg/kg/d = NOEC 20 mg/kg food				
	mammals/birds, acute		Rat LD50 1453 mg/kg bw				
	aquatic organisms, chronic	fish	P. promelas 34 d NOEC 0.0076 mg/l				
			BCF 330				
		Daphnia	D. magna 21 d NOEC 0.0056 mg/l (mm)				
		algae	S. subspicatus 72 h NOEC 0.0086 mg/l				
		plants	–				
		other, if tested	C. riparius 28 d NOEC 0.015 mg/l or 50 mg/kg sed.				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1.1 mg/l			1,1	0,04
		Daphnia	D. magna 48 h EC50 0.77 mg/			0,77	-0,11
		algae	S. subspicatus 72 hEbC50 0.032 mg/l			0,032	-1,49
		plants	Lemna results not reliable but indicate, that algae more sensitive			0,15	-0,82
		other, if tested	M. bahia 96 h EC50 0.15 mg/l			0,3	-0,52
			C. virginica 96 h EC50 > 0.30 mg/l		SD (LogL/EC50)	0,61	>0.5
	ADI	0.01	mg/kg/d				
Calculated EQS values	AA-QS_{water}	0,56	µg/l				
	AA-$QS_{BalticSea}$	0,06	µg/l				
	MAC-QS	0,32	µg/l	Value set to AA-QS			
	MAC-$QS_{BalticSea}$	0,06	µg/l	AF is 50, since an additional marine species (oyster) was tested			
	QS_{biota}	0,67	mg/kg food	QS_{water}	2,02 µg/l	Value above AA-QS	
				$QS_{BalticSea}$	2,02 µg/l	Value above AA-QS	
	overall EQS	0,56	µg/l				
	overall $EQS_{BalticSea}$	0,06	µg/l				
	$QS_{sediment}$	0,5	mg/kg sediment	QSsed			

Compound	**Diflubenzuron**	data source	EFSA conclusion report and DAR
Degradation	in soil		DT50 2.0-6.7 d, mean3.2 d
	hydrolytic, in water		pH 5-7: stable, pH 9: degradation to CPU and DFBA
	in water		DT50 2.8-3.2, mean 3.0 d
	in sediment		–
	in water/sediment system		DT50 3.7-5.4 d, mean 4.5 d
	distribution		Max. in sediment 24.4 % at 4 d
	comments		
Adsorption	LOG(K_{OW})		3.89 (pH 3 and 22°C)
	K_{OC}		1983-6918, mean 4620
	LOG(Koc)		3,84 max
	dependent on pH?		No
Analysis	LOQ in water		LC-MS/MS 0.1 µg/l
Toxicity	mammals/birds, chronic		Mouse 90 d NOAEL 9.7 mg/kg bw/d = NOEC 80.51 mg/kg food
	mammals/birds, acute		C. virginianus LD50 >1206 mg/kg bw
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.2 mg/l
			BCF 320
		Daphnia	D. magna 21 d NOEC 0.00004 mg/l (mm)
		algae	P. subcapitata 72 h NOEC 0.20 mg/l (nom)
		plants	L. gibba 14 d NOEC 0.19 mg/l
		other, if tested	Chironomids not more sensitive than Cladocerans
			M. bahia 21 d NOEC 0.000045 mg/l (mm)
			Mysid shrimp not counted as "additional marine taxa", since as a crustacean it should have a different life form or feeding strategy from Daphnia
	aquatic organisms, acute	fish	C. variegatus 96 h LC50 > 0.13 mg/l
		Daphnia	D. magna 48 h EC50 0.0026 mg/l
		algae	P.subcapitata 72 h ErC50 > 0.20 mg/l (nom)
		plants	L. gibba 14 d EC50 > 0.19 mg/l
		other, if tested	M. mercenaria 48 h NOEC >0.32 mg/l
Calculated EQS values	AA-QS_{water}	4 ng/l	
	AA-$QS_{BalticSea}$	0,4 ng/l	
	MAC-QS	Cannot be set, since a.s. an insect growth regulator	
	MAC-$QS_{BalticSea}$	Cannot be set, since a.s. an insect growth regulator	
	QS_{biota}	0,895 mg/kg food	QS_{water} 2,80 µg/l Value above AA-QS
			$QS_{BalticSea}$ 2,80 µg/l Value above AA-QS
	overall EQS	4 ng/l	
	overall $EQS_{BalticSea}$	0,4 ng/l	
	$QS_{sediment}$	No reliable data on Chironomus	

Compound	**Diflufenican**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 44.3-237-9 d, mean 128 d				
	hydrolytic, in water		pH 5-9: stable				
	in water		n.a.				
	in sediment		–				
	in water/sediment system		DT50 90-345 d, mean 196 d				
	distribution		Max. in sediment 74.4 % at 14 d				
	comments						
Adsorption	LOG(K_{OW})		4.2 at 20 °C				
	K_{OC}		1622-7431, mean 3417				
	LOG(Koc)		3,87 max				
	dependent on pH?		No				
Analysis	LOQ in water / soil		LC-MS-MS 0.05 µg/l; GC/MS 0.01 µg/l* / GC-MS LOQ: 0.002 mg/kg; MC/MSD 0.01 mg/kg*				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 19.47 mg/kg bw/day = NOEC 194.7 mg/kg food				
	mammals/birds, acute		Rat LD50 > 5000 mg/kg bw				
	aquatic organisms, chronic	fish	P. promelas 35 d NOEC 0.015 mg/l				
			BCF 1596				
		Daphnia	D. magna 21 d NOEC 0.052 mg/l				
		algae	P. subcapitata 72 h NOEC 0.0001 mg/l				
		plants	L. gibba 14 d NOEC 0.015 mg/l				
		other, if tested	C. riparius 28 d NOEC 0.10 mg/l and 2.0 mg/kg sediment				
	aquatic organisms, acute	fish	C. carpio 96 h LC50 >0.0985 mg/l				
		Daphnia	D. magna 48 h EC50 > 0.24 mg/l				
		algae	S. subspicatus 72 h ErC50 0.00045 mg/l				
		plants	L. gibba 14 d EC50 fronds 0.039 mg/l				
		other, if tested					
	ADI	0.2	mg/kg bw/d				
Calculated EQS values	AA-QS_{water}	0,01	µg/l				
	AA-$QS_{BalticSea}$	0,001	µg/l				
	MAC-QS	0,045	µg/l	AF is 10, since the range in toxicity > 100 X			
	MAC-$QS_{BalticSea}$	0,005	µg/l				
	QS_{biota}	2,16	mg/kg food		QS_{water}	1,4 µg/l	Value above AA-QS
					$QS_{BalticSea}$	1,4 µg/l	Value above AA-QS
	overall EQS	0,01	µg/l				
	overall $EQS_{BalticSea}$	0,001	µg/l				
	$QS_{sediment}$	1	µg/l				
		20	µg/kg sediment		QSsed		

Compound	**Dimethoate**	data source		EFSAconclusion report and DAR			
Degradation	in soil			DT50 2-4 d (20°C), 4-9 d (10°C)			
	hydrolytic, in water			pH 5: 156 d, pH 7: 68 d, pH 9: 4.4 d			
	in water			DT50 12.5-14.8 d			
	in sediment						
	in water/sediment system			DT50 13.2-17.2 d			
	distribution			Max. in sediment 11.9% at d 7			
	comments						
Adsorption	LOG(K_{OW})			pH 7: 0.704			
	K_{OC}			16.25–51.88, mean 30.1			
	LOG(Koc)			1,71	max		
	dependent on pH?			No			
Analysis	LOQ in water/soil			GC-MS 0.05 µg/l; LC/MS 0.01 µg/l*			
Toxicity	mammals/birds, chronic			Rat long term and carc. NOAEL 0.04 mg/kg bw/d = NOEC 0.8 mg/kg food			
	mammals/birds, acute			C. virginianus LD50 10.5 mg/kg bw			
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 0.4 mg/l			
				BCF	–		
		Daphnia		D. magna 20 d NOEC 0.032 mg/l (proposal)			
		algae		S. capricornutum 72 h NOEC 30.5 mg/l (im)			
		plants					
		other, if tested		C. riparius 28 d NOEC 0.1 mg/l			
	aquatic organisms, acute	fish		S. trutta 96 h 1.4 mg/l (proposal)			
		Daphnia		D. magna 48 h 2.0 mg/l			
		algae		S. capricornutum 72 h ErC50 282.3 mg/l (im)			
		plants					
		other, if tested		P. californicus 96 h 0.043 mg/l (proposal)			
	ADI		0.001	mg/kg bw/d			
Calculated EQS values	AA-QS		3,2	µg/l			
	AA-$QS_{BalticSea}$		0,32	µg/l			
	MAC-QS		4,3	µg/l	AF is 10, since the range in toxicity > 100 X		
	MAC-$QS_{BalticSea}$		0,43	µg/l			
	QS_{biota}	LogKow <3					
	overall EQS		3,2	µg/l			
	overall $EQS_{BalticSea}$		0,32	µg/l			
	$QS_{sediment}$		1	µg/l	QSsed	16,25	µg/kg org C

Compound	**Dimethomorph**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 41-96 d (20-25 °C), 74 d (10 °C)				
	hydrolytic, in water		pH 4 -9: stable				
	in water		DT50 5-15 d				
	in sediment		–				
	in water/sediment system		DT50 16-59 d				
	distribution		Max. in sediment 68 % at d 0				
	comments						
Adsorption	LOG(K_{OW})		2.63 (E-isomer) 2.73 (Z isomer), 20 °C				
	K_{OC}		290-566, mean 407.7				
	LOG(Koc)		2,753 max				
	dependent on pH?		No				
Analysis	LOQ in water		HPLC-UV or LC-MS/MS 0.05 µg/l; LC/MS 0.01 µg/l*				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 16 mg/kg bw/d = NOEC 160 mg/kg food				
	mammals/birds, acute		C. virginianus and A. platyrhynchos LD50 > 2000 mg/kg				
	aquatic organisms, chronic	fish	O. mykiss 60 d NOEC 0.056 mg/l (nom.)				
			BCF –				
		Daphnia	D. magna NOEC 22 d 0.1 mg/l (nom.)				
		algae	Algae NOEC not given in DAR, but less sensitive				
		plants	–				
		other, if tested	C. riparius NOECgrowth 28 d 4.1 mg/l				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 6.2 mg/l (m)			6,2	0,79
		Daphnia	D. magna 48 h EC50 > 10.6 mg/l (m)			10,6	1,03
		algae	P. subcapitata 72 h ErC50 82.2 mg/l (n)			82,2	1,91
		plants	–			7,9	0,90
		other, if tested	M. bahia 96 h EC50 7.9 mg/l (m)			4,4	0,64
			C. virginica 96 h EC50 4.4 mg/l (m)	SD (LogL/EC50)		0,50	≤0.5
			Mysid shrimp not counted as "additional marine taxa", since as a crustacean it should have a different life form or feeding strategy from Daphnia				
	ADI	0.05	mg/kg bw/d				
Calculated EQS values	AA-QS_{water}	5,6	µg/l				
	AA-$QS_{BalticSea}$	0,56	µg/l				
	MAC-QS	0,44	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$	0,088	mg/l	AF is 50, since an additional marine species (oyster) was tested			
	QS_{biota}	LogKow <3					
	overall EQS	5,6	µg/l				
	overall $EQS_{BalticSea}$	0,56	µg/l				
	$QS_{sediment}$	41	µg/l	QSsed	11,9	mg/kg org C	

Compound	**Diquat**	data source	EC review report and DAR			
Degradation	in soil		Lab: no degradation after 1 y; field: DT50 10 - 20 y (UK), 1.2 - 3.6 y (US)			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 12-24 h			
	in sediment		–			
	in water/sediment system		–			
	distribution		Very rapid adsorption to sediment organic matter and suspended particulate matter			
	comments		Stable in sed. (no metabolites); no evidence of desorption back into water			
Adsorption	LOG(K_{OW})		-4.6 at 20 °C			
	K_{OC}		32 000-7 000 000, mean 2 184 750			
	LOG(Koc)		6,85 max			
	dependent on pH?		no			
Analysis	LOQ in water / soil		HPLC 0.1 µg/l / 0.02 mg/kg; 0.01 mg/kg*			
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 0.2 mg/kg bw/d = NOEC 4 mg/kg food			
	mammals/birds, acute		A. platyrhynchos LD50 83 mg /kg bw			
	aquatic organisms, chronic	fish	P. promelas 34 d NOEC 0.12 mg/l (mm)			
			BCF –			
		Daphnia	D. magna 21 d NOEC 0.125 mg/l (nom)			
		algae	P. subcapitata 72 h NOEC 0.0068 mg/l (nom)			
		plants	Field data: 0.125 mg/l NOAEL			
		other, if tested	C. riparius 20 d NOEC > 100 mg/kg sediment (diquat ion)			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 6.1 mg /l		6,10	0,79
		Daphnia	D. magna 48 h EC50 1.2 mg/l		1,20	0,08
		algae	P. subcapitata 96 h EC50 0.011 mg/l		0,01	-1,96
		plants		SD (LogL/EC50)		1,42 >0.5
		other, if tested				
	ADI	0.002	mg/kg bw (diquat ion)			
Calculated EQS values	$AA\text{-}QS_{water}$	0,68	µg/l			
	$AA\text{-}QS_{BalticSea}$	0,07	µg/l			
	MAC-QS	1,1	µg/l	AF is 10, since the range in toxicity > 100 X		
	$MAC\text{-}QS_{BalticSea}$	0,11	µg/l			
	QS_{biota}	LogKow < 3				
	overall EQS	0,68	µg/l			
	overall $EQS_{BalticSea}$	0,07	µg/l			
	$QS_{sediment}$	1	mg/kg sed.	QSsed		

Compound	**Esfenvalerate**	data source	EC review report and DAR				
Degradation	in soil		DT50 28-50 d (20 °C), 39-179 d (15 °C)				
	hydrolytic, in water		pH 4/5: 192 d; pH 9: 65 d (25 °C)				
	in water						
	in sediment						
	in water/sediment system		DT50 54-80 d				
	distribution		Max. in sediment 27% at d 100				
	comments						
Adsorption	LOG(K_{OW})		6.24 at 25 °C (pH not stated)				
	K_{OC}		630957				
	LOG(Koc)		5,80				
	dependent on pH?						
Analysis	LOQ in water		GC/MS 0.05 µg/l*				
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 2 mg/kg bw/d = NOEC 16.66 mg/kg food				
	mammals/birds, acute		Rat LD50 88.5 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.001 µg/l; fish mesocosm NOEC 0.25 µg/l				
			BCF 3650				
		Daphnia	D. magna 21 d NOEC 0.0056 µg/l				
		algae	D. subspicatus 96 h NOEC 1 µg/l				
		plants	–				
		other, if tested	Mesocosm NOEC invertebrates including Chironomidae 0.01 µg/l				
				L/EC50	logL/EC50		
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.1 µg/l	0,1	-1,00		
		Daphnia	D. magna 48 h EC50 0.9 µg/l	0,9	-0,05		
		algae	D. subspicatus 48 h ErC50 10.0 µg/l	10,0	1,00		
		plants	–	SD (LogL/EC50)	1,00	>0.5	
		other, if tested					
	ADI	0.02	mg/kg				
Calculated EQS values	$AA\text{-}QS_{water}$	0,1	ng/l				
	$AA\text{-}QS_{BalticSea}$	0,01	ng/l				
	MAC-QS	10	ng/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	1	ng/l				
	QS_{biota}	0,555	mg/kg food	QS_{water}	0,076	µg/l	Value above AA-QS
				$QS_{BalticSea}$	0,038	µg/l	Value above AA-QSBalticSea
	overall EQS	0,1	µg/l				
	overall $EQS_{BalticSea}$	0,01	µg/l				
	$QS_{sediment}$	0,1	µg/l	Based on mesocosm study	QSsed	63,1	µg/kg org C

Compound	**Ethephon**	data source	EFSA conclusion report and DAR
Degradation	in soil		DT50 2.7-37.6 d (mean 16.5 d); DT50 10 °C 51.4 d
	hydrolytic, in water		pH 5: DT50 66.4 d; pH 7: DT50 1.7 d; pH 9: DT50 0.39 d
	in water		DT50 2.6-2.2 d
	in sediment		–
	in water/sediment system		DT50 3.0-2.7 d
	distribution		Max. in sediment 6.02 % at d 4
	comments		Rapid dissipation from water (degradation to Ethylene); Max. 98.72 % at 0 d, < 1% after 30 d
Adsorption	LOG(K_{OW})		pH 2: -0,63; pH 7: -1,89
	K_{OC}		608-4078
	LOG(Koc)		3,6 max
	dependent on pH?		No
Analysis	LOQ in water		GC-MS 0.1 µg/l
Toxicity	mammals/birds, chronic		Mouse 28-day NOAEL 22 mg/kg bw/day = NOEC 182.6 mg/kg food
	mammals/birds, acute		Bobwhite quail LD50 764 mg/kg bw
	aquatic organisms, chronic	fish	P. promelas 34 d NOEC 43 mg/L
			BCF –
		Daphnia	D. magna 21 d NOEC 67 mg/L
		algae	P. subcapitata 72h NOEC 3.8 mg/L
		plants	L. gibba 14 d NOEC < 0.10 mg/L
		other, if tested	–
	aquatic organisms, acute	fish	C. carpio 96h LC50 > 100 mg/L
		Daphnia	D. magna test not valid
		algae	P. subcapitata 72h ErC50 9.3 mg/l
		plants	L. gibba 14 d EC50 > 1.6 mg/L
		other, if tested	
	ADI	0.03	mg/kg bw/day
Calculated EQS values	AA-QS_{water}	10	µg/l
	AA-$QS_{BalticSea}$	1	µg/l
	MAC-QS	Cannot be set, since acute daphnia value missing	
	MAC-$QS_{BalticSea}$	Cannot be set, since acute daphnia value missing	
	QS_{biota}	LogKow <3	
	overall EQS	10	µg/l
	overall $EQS_{BalticSea}$	1	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Ethofumesate**	data source	EC review report and DAR					
Degradation	in soil		20 °C: DT50 47-211 d (mean 97 d)					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 11-50 d					
	in sediment		DT50 170-270 d					
	in water/sediment system		DT50 105-285 d					
	distribution		Max. in sediment ~50% at d 30/63/234					
	comments							
Adsorption	LOG(K_{OW})		2.7 (pH 6.4, 20/25 °C)					
	K_{OC}		97-245					
	LOG(Koc)		2,4 max					
	dependent on pH?		No					
Analysis	LOQ in water		GC-FPD 0.05-0.1 µg/l; GC/MS 0.02 µg/l*					
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 7 mg/kg bw/d = NOEC 140 mg/kg food					
	mammals/birds, acute		Mallard duck, bobwhite quail LD50 > 2000 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.8 mg as/l					
			BCF 144					
		Daphnia	D. magna 21 d NOEC 0.32 mg as/l					
		algae	D. subspicatus 72 h NOEC 0.8 mg/l (nom)					
		plants	L. minor 14 d NOEC 4.3 mg as/l					
		other, if tested	C. riparius 28 d NOEC > 5.0 mg/l					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	Cyprinus carpio 96 h LC50 11 mg as/l			11	1,04	
		Daphnia	D. magna 48 h EC50 14 mg as/l			14	1,15	
		algae	D. subspicatus 72 h ErC50 10 mg/l			10	1,00	
		plants	L. minor 14 d EbC50 > 50 mg as/l			50	1,70	
		other, if tested			SD (LogL/EC50)		0,32	<0.5
	ADI	0.07	mg/kg bw/d					
Calculated EQS values	AA-QS_{water}	32	µg/l					
	AA-$QS_{BalticSea}$	3,2	µg/l					
	MAC-QS	1	mg/l	AF is 10, since SD LogL/EC50 <0.5				
	MAC-$QS_{BalticSea}$	0,1	mg/l					
	QS_{biota}	4,67	mg/kg food	QS_{water}	32	µg/l	equal to AA-QS_{water}	
				$QS_{BalticSea}$	32	µg/l	Value above AA-QS	
	overall EQS	32	µg/l					
	overall $EQS_{BalticSea}$	3,2	µg/l					
	$QS_{sediment}$	50	µg/l	QSsed	4,85	mg/kg orgC		

Compound	**Famoxadone**	data source	EC review report and DAR				
Degradation	in soil		DT50 2-11 d, mean 6.2 d (20 °C); DT50 4 d (10 °C)				
	hydrolytic, in water		pH 5: 41 d, pH 7: 2 d, pH 9: 1.5 h (25°C)				
	in water		DT50 0.07- 0.48 h				
	in sediment						
	in water/sediment system		DT50 0.68-2.1 d				
	distribution		Max. in sediment 76.2 % at 0 d				
	comments		Degradation < 2 d in water and sediment; therefore no AA-QS values were derived.				
	metabolites						
Adsorption	LOG(K_{OW})		4.8 (at 20°C; pH5)				
	K_{OC}		3300-4030				
	LOG(Koc)		3,61	max			
	dependent on pH?		No				
Analysis	LOQ in water		HPLC/UV 0.1 µ/l; GC/MS 0.1 µg/l*				
Toxicity	mammals/birds, chronic		Rat long term & carc. NOAEL 1.62 mg/kg/d = NOEC 32.4 mg/kg food				
	mammals/birds, acute		C. virginianus LD50 > 2250 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 90 d NOEC 1.4 µg/l				
			BCF	3400			
		Daphnia	D. magna 21 d NOEC 3.7 µg/l				
		algae	P. subcapitata 120 h NOEC 3.9 µg/l (im)				
		plants					
		other, if tested	C. riparius 28 d NOEC 10 µg/l				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 11 µg/l			11	1,0413927
		Daphnia	D. magna 48 h EC50 12 µg/l			12	1,0791812
		algae	P. subcapitata 72 h ECr50 48 µg/l (im)			48	1,6812412
		plants	–		SD (LogL/EC50)		0,36
		other, if tested					
	ADI	0.012	mg/kg bw/d				
Calculated EQS values	AA-QS_{water}	DT50 < 2 d					
	AA-$QS_{BalticSea}$	DT50 < 2 d					
	MAC-QS	1,1	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$	0,11	µg/l				
	QS_{biota}	DT50 < 2 d					
	$QS_{sediment}$	DT50 < 2 d					

Compound	**Fenamidone**	data source				
Degradation	in soil			DT50 0.9-11.7 d (mean 5.9 d); DT50 30.3 d (10 °C)		
	hydrolytic, in water			pH 5: DT50 221 d, pH 7: DT50 411 d, pH 9: DT50 27.6 d		
	in water			DT50 17.4-31 d		
	in sediment					
	in water/sediment system			DT50 67-127 d		
	distribution			Max. in sediment 67.8 % at 30 d		
	comments					
Adsorption	LOG(K_{OW})			2.8 (no pH dependance)		
	K_{OC}			259-494		
	LOG(Koc)			2,69	max	
	dependent on pH?			No		
Analysis	LOQ in water			HPLC-UV 1.0 µg/l; GC/MS 0.05 µg/l*		
Toxicity	mammals/birds, chronic			Rat long term and carc. NOAEL 60 mg/kg food (3.6 mg/kg/d)		
	mammals/birds, acute			Rat LD50 3514 mg /kg bw		
	aquatic organisms, chronic	fish		O. mykiss 28 d (flowthrough) NOEC 0.31 mg/l		
				BCF	–	
		Daphnia		D. magna 21 d NOEC 0.0125 mg/l		
		algae		S. subspicatus 72 h NOEC 1.85 mg/l (mm)		
		plants		–		
		other, if tested		C. riparius 24 d NOEC 0.050 mg/l		
	aquatic organisms, acute	fish		O. mykiss & L. macrochirus 96 h (flowthrough) LC50 0.74 mg/l		
		Daphnia		D. magna 48 h EC50 0.053 mg/l (mm)		
		algae		S. subspicatus 72 h ErC50 12.29 mg/l		
		plants		–		
		other, if tested				
	ADI		0.03	mg/kg/d		
Calculated EQS values	$AA\text{-}QS_{water}$		1,25	µg/l		
	$AA\text{-}QS_{BalticSea}$		0,125	µg/l		
	MAC-QS		5,3	µg/l	AF is 10, since the range in toxicity > 100 X	
	$MAC\text{-}QS_{BalticSea}$		0,53	µg/l		
	QS_{biota}	LogKow <3				
	AA-EQS		1,25	µg/l		
	$AA\text{-}EQS_{BalticSea}$		0,125	µg/l		
	$QS_{sediment}$		0,5	µg/l	QSsed	0,13 mg/kg orgC

Compound	**Fenhexamid**	data source	EC review report and DAR					
Degradation	in soil		DT50 <1 day (20°C)					
	hydrolytic, in water		pH 5-9: stable (25°C)					
	in water		DT50 4-7 d					
	in sediment							
	in water/sediment system		DT50 6-17 d					
	distribution		No clear information; max < 20 %					
	comments							
Adsorption	LOG(K_{OW})		pH 4: 3.62, pH 7: 3.51, pH 9: 2.23					
	K_{OC}		Koc 446-1226					
	LOG(Koc)		3,09 max					
	dependent on pH?		Adsorption decreases with increasing pH					
Analysis	LOQ in water		HPLC-UV 0.05 µg/l: GC/MS 0.05 µg/l*					
Toxicity	mammals/birds, chronic		Mouse long term and carc. NOAEL 300 mg/kg food					
	mammals/birds, acute		C. virginianus LD50 > 2000 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 55 d NOEC 0.1 mg/l					
			BCF 185					
		Daphnia	D. magna 21 d NOEC 1.0 mg/l					
		algae	S. capricornutum 120 h NOEbC 3.2 mg/l					
		plants	–					
		other, if tested	–					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC 50 1.34 mg/l			1,34	0,13	
		Daphnia	D. magna 48 h EC 50 >18.8 mg/l			18,8	1,27	
		algae	S. capricornutum 120 h ECb50 4.31 mg/l			4,31	0,63	
		plants	–		SD (LogL/EC50)		0,57	>0.5
		other, if tested						
	ADI	0.2	mg/kg bw/day					
Calculated EQS values	AA-QS_{water}	10	µg/l					
	AA-$QS_{BalticSea}$	1	µg/l					
	MAC-QS	13,4	µg/l					
	MAC-$QS_{BalticSea}$	1,34	µg/l					
	QS_{biota}	10,0	mg/kg food	QS_{water}	0,054	mg/l	Value above AA-QS	
				$QS_{BalticSea}$	0,054	mg/l	Value above AA-QS	
	overall EQS	10	µg/l					
	overall $EQS_{BalticSea}$	1	µg/l					
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l						

Compound	**Fenoxaprop-P-ethyl**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 0.02-0.8 d			
	hydrolytic, in water		pH 4: 2.8 d, pH 5: 19.2 d, pH 7: 23.2 d, pH 9: 0.69 d (25 °C)			
	in water		DT50 0.1-0.3 d			
	in sediment		–			
	in water/sediment system		DT50 0.1-0.96 d			
	distribution		Max. in sediment 3.6% at 2 h			
	comments		Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.			
	metabolites		Fenoxaprop-P (AE F088406) 81% at d 3; not detected in sediment			
Adsorption	LOG(K_{OW})		4.58 at 30 °C			
	K_{OC}		5419-26207			
	LOG(Koc)		4,42	max		
	dependent on pH?		No			
Analysis	LOQ in water		HPLC-UV 1 µg/l; GC/MS 0.02 µg/l*			
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 1.4 mg/kg bw/d = 11.7 mg/kg food			
	mammals/birds, acute		Japanese Quail LD50 ¨2000 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss ELS 91 d (flowthrough) NOEC 0.036 mg/l nom			
			BCF	338		
		Daphnia	D. magna 21 d NOEC 0.22 mg/l (mm)			
		algae	D. subspicatus 72 h NOEC 0.32 mg/l			
		plants				
		other, if tested	C. riparius 28 d NOEC 0.2 mg/l			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 0.19 mg/l (mm)		0,19	-0,72
		Daphnia	D. magna 48 h EC50 > 1.06 mg/l (mm)		1,06	0,03
		algae	D. subspicatus 72 h ErC50 0.66 mg/l		0,66	-0,18
		plants	L. gibba 14 d EC50 fronds ≥ 2.76 mg/l		2,76	0,44
		other, if tested		SD (LogL/EC50)	0,48	<0,5
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 d				
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 d				
	MAC-QS	19	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	$MAC\text{-}QS_{BalticSea}$	1,9	µg/l			
	QS_{biota}	DT50 < 2 d				
	$QS_{sediment}$	DT50 < 2 d				

Compound	Fenoxaprop-P (AE F088406)					
Degradation	in soil		DT50 5.9-14.9 d (20 °C/pF2); DT50 30.8 d (10 °C)			
	hydrolytic, in water		pH 5: DT50 43.1 d, pH 7: DT50 320 d, pH 9: DT50 66.2 d (20°C)			
	in water		DT50 3.3-133 d			
	in sediment					
	in water/sediment system		DT50 6.9-133 d			
	distribution		Max in sediment 26.8% at d 7			
	comments					
Adsorption	LOG(K_{OW})		–			
	K_{OC}		145-568			
	LOG(Koc)		2,75 max			
	dependent on pH?		May be less mobile in very acidic soils (pH <5)			
Analysis	LOQ in water		HPLC-UV 1.0 µg/l			
Toxicity	mammals/birds, chronic					
	mammals/birds, acute					
	aquatic organisms, chronic	fish	O. mykiss 28 d (flowthrough) NOEC ≥ 3.2 mg/l (nom)			
			BCF –			
		Daphnia	D. magna 21 d NOEC 1.0 mg/l			
		algae	P. subcapitata 72 h NOEC 13.7 mg/ (m)			
		plants				
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 hr (static) EC50 > 72.2mg/l (mm)	72,2	1,86	
		Daphnia	D. magna 48 h EC50 126 mg/l (nom)	126	2,10	
		algae	P. subcapitata 72 h EbC50 35.0 mg/l (m)	35	1,54	
		plants	SD (LogL/EC50)		0,28	<0,5
		other, if tested				
Calculated EQS values	AA-QS_{water}	0,1	mg/l			
	AA-$QS_{BalticSea}$	0,01	mg/l			
	MAC-QS	3,5	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	0,35	mg/l			
	QS_{biota}	–				
	overall EQS	0,1	mg/l			
	overall $EQS_{BalticSea}$	0,01	mg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Fenpropidin**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 58-103 d				
	hydrolytic, in water		pH 3-9: stable (50°C)				
	in water		DT50 0.3-3.0 d				
	in sediment		–				
	in water/sediment system		DT50 23-45 d				
	distribution		Max. in sediment 58.4% at d 14				
	comments						
Adsorption	LOG(K_{OW})		pH 4.2: 0.83, pH 7: 2.9, pH 9: 4.5 (25°C)				
	K_{OC}		2105-5313				
	LOG(Koc)		3,73	max			
	dependent on pH?		No				
Analysis	LOQ in water / soil		HPLC-UV 0.1 µg/l; GC/MS 0.05 µg/l* / LC-MS/MS 0.01 mg/kg				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 1.14 mg/kg bw/day = NOEC 11.4 mg/kg food				
	mammals/birds, acute		P. colchicus LD50 369 mg/kg bw/d				
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC (flowthrough) 0.32 mg/l (nom)				
			BCF	163			
		Daphnia	D. magna 21 d NOEC 0.32 mg/l (nom)				
		algae	D. subspicatus 96 h NOEC 0.0010 mg/l				
		plants	Both mesocosm studies show no effects on macrophytes				
		other, if tested	C. riparius 28 d NOEC 40 mg/kg sed. and 1.0 mg/l (nom)				
			Mesocosm 175 d NOEC 0.00039 mg/l based on phytoplankton effects				
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 1.9 mg/l (m)				
		Daphnia	D. magna 48 h EC50 0.54 mg/l (m)				
		algae	D. subspicatus ErC50 24h 0.0098 mg/l				
		plants					
		other, if tested					
	ADI	0.02	mg/kg bw/day				
Calculated EQS values	$AA\text{-}QS_{water}$	0,078	µg/l	AF is 5, since mesocosm study was used			
	$AA\text{-}QS_{BalticSea}$	0,0078	µg/l				
	MAC-QS	0,980	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,098	µg/l				
	QS_{biota}	0,127	mg/kg food		QS_{water}	0,78 µg/l	Value above AA-QS
					$QS_{BalticSea}$	0,78 µg/l	Value above AA-QS
	overall EQS	0,078	µg/l				
	overall $EQS_{BalticSea}$	0,0078	µg/l				
	$QS_{sediment}$	0,4	mg/kg sed.		QSsed		

Compound	**Fenpropimorph**	data source	EFSA conclusion report and DAR						
Degradation	in soil		DT50 11.3-123.8 d; 10°C: DT50 32.4 d						
	hydrolytic, in water		pH 3-9: stable (25 °C)						
	in water		DT50 1.9-3.4 d, mean 2.65 d						
	in sediment		DT50 80.5 d						
	in water/sediment system		DT50 18-54 d; mean 36 d						
	distribution		Max. in sediment 48.2 % at 14 d						
	comments								
Adsorption	LOG(K_{OW})		pH 1: 2.10, pH 4: 2.22, pH 7: 4.50						
	K_{OC}		Koc 2772-5943						
	LOG(Koc)		3,77 max						
	dependent on pH?		No						
Analysis	LOQ in water		GC-MS 0.05 µg/l; GC-MS 0.05 µg/l*						
Toxicity	mammals/birds, chronic		Rat 90-day NOAEL 0.7 mg/kg bw/d = NOEC 7 mg/kg food						
	mammals/birds, acute		Rat LD50 1670 mg/kg bw						
	aquatic organisms, chronic	fish	O. mykiss 94 d (ELS) NOEC 0.16 µg/l						
			BCF 942-1145						
		Daphnia	D. magna (product) 21 d NOEC 0.032 mg/l = 0.024 mg as/l						
		algae	S. subspicata 72 h NOEC 0.058 mg/l						
		plants							
		other, if tested	C. riparius 20 d NOEC (nom) 0.13 mg/l						
							L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 2.30 mg/l				2,30	0,36	
		Daphnia	D. magna 48 h EC50 2.24 mg/l				2,24	0,35	
		algae	P. subcapitata 72 h ErC50 > 1mg/l				1,00	0,00	
		plants				SD (LogL/EC50)		0,21	<0,5
		other, if tested							
	ADI	0.003	mg/kg bw/d						
Calculated EQS values	AA-QS_{water}	0,016	µg/l						
	AA-$QS_{BalticSea}$	0,0016	µg/l						
	MAC-QS	100	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5					
	MAC-$QS_{BalticSea}$	10	µg/l						
	QS_{biota}	0,0778	mg/kg food		QS_{water}	0,068	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	0,068	µg/l	Value above AA-QS	
	overall EQS	0,016	µg/l						
	overall $EQS_{BalticSea}$	0,0016	µg/l						
	$QS_{sediment}$	1,3	µg/l	QSsed	3,6	mg/kg orgC			

Compound	**Florasulam**	data source	EC review report and DAR			
Degradation	in soil		DT50 0.7-4.5 d (20°C); median 1.6 d (4 soils); 5°C: DT50 19-45 d			
	hydrolytic, in water		pH 5-9: stable (25 °C)			
	in water		DT50 ~ 8.7-18.0 d			
	in sediment		–			
	in water/sediment system		DT50 8.7-18.0 d			
	distribution		Mainly present in water phase			
	comments					
Adsorption	K_{OW}					
	LOG(K_{OW})		pH 4.0: 1.00, pH 7.0: -1.22, pH 10.0: -2.06			
	K_{OC}		4-54 (mean 22)			
	LOG(Koc)		1,73	max		
	dependent on pH?		No			
Analysis	LOQ in water		HPLC-UV 0.1 µg/l; LC/MS 0.02 µg/l*			
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 10 mg/kg bw/d = NOEC 200 mg/kg food			
	mammals/birds, acute		Bird LD50 1046 mg a.s./kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 119 mg/l			
			BCF	2,2		
		Daphnia	D. magna 21 d NOEC 38.9 mg/l			
		algae	N. pelliculosa 120 h NOEC < 0.05 µg/l			
		plants	L. gibba 14 d NOEC 0.62 µg/l			
		other, if tested	C. riparius 28 d NOEC 10 mg/l			
	aquatic organisms, acute	fish	O. mykiss, L. macrochirus 96 h LC50 > 100 mg/l			
		Daphnia	D. magna 48 h LC50 > 292 mg/l			
		algae	S. capricornotum 72 h ErC50 0.00894 mg/l			
		plants	L. gibba 14 d EC50 0.00118 mg/l			
		other, if tested	P. pugio LC50 > 120 mg/l			
			C. virginica (96 h shell deposition) EC50 > 125 mg/l			
			Grass shrimp not counted as “additional marine taxa”,			
			since as a crustacean it should have a different life form or feeding strategy from Daphnia			
	ADI		0.05	mg/kg/bw/d		
Calculated EQS values	$AA\text{-}QS_{water}$		0,005	µg/l		
	$AA\text{-}QS_{BalticSea}$		0,0005	µg/l		
	MAC-QS		0,118	µg/l	AF is 10, since the range in toxicity > 100 X	
	$MAC\text{-}QS_{BalticSea}$		0,0236	µg/l	AF is 50, since one marine taxa tested (oyster)	
	QS_{biota}	LogKow <3				
	overall EQS		0,005	µg/l		
	overall $EQS_{BalticSea}$		0,0005	µg/l		
	$QS_{sediment}$		0,1	mg/l	QSsed	0,4 mg/kg orgC

Compound	**Fluazinam**	data source	EFSA conclusion report and DAR						
Degradation	in soil		DT50 17.1-226 d						
	hydrolytic, in water		pH 4: stable (50 °C); pH 7 (25°C) 2.7-4.5 d; pH 9 (25°C) 3.5-3.9 d						
	in water		DT50 1.9-3.5 d						
	in sediment		DT50 4.4-6.4 d						
	in water/sediment system		DT50 3.1-4.6 d						
	distribution		Max. in sediment 34.7 % at d 2						
	comments								
Adsorption	LOG(K_{OW})		4.03 at 25 °C						
	K_{OC}		1705-2316						
	LOG(Koc)		3,36	max					
	dependent on pH?								
Analysis	LOQ in water		LC-MS/MS 0.1 µg/l; GC/MSD 0.05 µg/l*						
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 1.5 mg/kg bw/d = NOEC 12.495 mg/kg food						
	mammals/birds, acute		C. virginianus LD50 1782 mg/kg bw/d						
	aquatic organisms, chronic	fish	P. promelas 278 d (FLC) NOEC 2.9 µg/l (mm)						
			BCF	1090					
		Daphnia	D. magna 21 d NOEC 12.5 µg/l (nom)						
		algae	P. subcapitata 96 h NOEC 48 µg/L (mm)						
		plants							
		other, if tested	C. riparius 28 d NOEC 6.25 µg/l (im)						
							L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 55 µg/l (mm)				55	1,74	
		Daphnia	D. magna 48 h 220 µg/l (mm)				220	2,34	
		algae	P. subcapitata 96 h ErC50 > 220 µg/l (mm)				220	2,34	
		plants					45	1,65	
		other, if tested	C. riparius 48 h EC50 45 µg/l			SD (LogL/EC50)		0,37	<0.5
	ADI	0.01	mg/kg bw/d						
Calculated EQS values	AA-QS_{water}	0,29	µg/l						
	AA-$QS_{BalticSea}$	0,029	µg/l						
	MAC-QS	4,5	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5					
	MAC-$QS_{BalticSea}$	0,45	µg/l						
	QS_{biota}	0,4165	mg/kg food		QS_{water}	0,38	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	0,38	µg/l	Value above AA-QS	
	overall EQS	0,29	µg/l						
	overall $EQS_{BalticSea}$	0,029	µg/l						
	$QS_{sediment}$	0,0625	µg/l	QSsed	0,11	mg/kg orgC			

Compound	**Fludioxonil**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 100-569 d (20°C/pF2)				
	hydrolytic, in water		pH 5-9: stable (25 °C)				
	in water		DT50 1-2 d (due to adsorption)				
	in sediment						
	in water/sediment system		DT50 451-699 d				
	distribution		Max. in sediment 83.5% at d 177				
	comments						
Adsorption	LOG(K_{OW})		4.12 at 25°C				
	K_{OC}		12000-385000				
	LOG(Koc)		5,59 max				
	dependent on pH?		No				
Analysis	LOQ in water / soil		HPLC-UV 0.05 µg/l; GC/MS 0.05 µg/l* / HPLC-MS-MS 0.01 mg/kg; GC/MSD 0.05 mg/kg*				
Toxicity	mammals/birds, chronic		Bird repr. NOEC = 125 mg/kg food				
	mammals/birds, acute		Bird LD50 > 2000 mg as/kg bw				
	aquatic organisms, chronic	fish	P. promelas 28 d NOEC 0.039 mg/l				
			BCF 366				
		Daphnia	D. magna 21 d NOEC 0.005 mg/l				
		algae	No reliable algae-NOEC				
		plants					
		other, if tested	C. riparius 28 d NOEC 40 mg/kg sed and 0.2 mg/l				
					L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.23 mg/l		0,23	-0,64	
		Daphnia	D. magna 48 h EC50 0.4 mg/l		0,4	-0,40	
		algae	S. capricornutum 120 h ErC50 0.33 mg/l		0,33	-0,48	
		plants			2,41	0,38	
		other, if tested	M. bahia 96 h LC50 0.27 mg/l		0,27	-0,57	
			C. virginica 96 h EC50 0.37 mg/l		0,37	-0,43	
				SD (LogL/EC50)	0,37		<0,5
			Mysidopsis bahia not counted as "additional marine taxa",				
			since as a crustacean it should have a different life form or feeding strategy from Daphnia				
	ADI	0.37	mg/kg bw/day				
Calculated EQS values	AA-QS_{water}	0,1	µg/l	AF is 50, since no algae NOEC available			
	AA-$QS_{BalticSea}$	0,01	µg/l				
	MAC-QS	23	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$	4,6	µg/l	AF is 50, since one add. marine taxa tested (oyster)			
	QS_{biota}	4,167	mg/kg food	QS_{water}	11,39	µg/l	Value above AA-QS
				$QS_{BalticSea}$	11,39	µg/l	Value above AA-QS
	overall EQS	0,1	µg/l				
	overall $EQS_{BalticSea}$	0,01	µg/l				
	$QS_{sediment}$	0,4	mg/kg	QSsed			

Compound	**Fluroxypyr (acid)**	data source	EC review report and DAR			
Degradation	in soil		DT50 3-55 d (20-22°C); as soil pH decreases then DT50 increases			
	hydrolytic, in water		pH 4-9: stable			
	in water		No data			
	in sediment					
	in water/sediment system		DT50 24 d			
	distribution					
	comments					
Adsorption	LOG(K_{OW})		2.0			
	K_{OC}		51-81			
	LOG(Koc)		1,9	max		
	dependent on pH?					
Analysis	LOQ in water		GC-ECD 5 µg/l; LC/MS 0.05 µg/l*			
Toxicity	mammals/birds, chronic		Mouse 90 d NOAEL 80 mg/kg bw/d = NOEC 664 mg/kg food			
	mammals/birds, acute		Bird LD50 > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 100 mg/l			
			BCF	–		
		Daphnia	D. magna 21 d NOEC 56 mg/l			
		algae	S. capricornutum 120 h NOEC 34.2 mg/l			
		plants	L. gibba 14 d NOEC < 4.6 mg/l			
		other, if tested				
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 14.3 mg/l		14,3	1,16
		Daphnia	D. magna 48 h EC50 > 100 mg/l		100	2,00
		algae	S. capricornutum 120 h LC50 49.8 mg/l		49,8	1,70
		plants	L. gibba 14 d LC50 12.3 mg/l		12,3	1,09
		other, if tested		SD (LogL/EC50)	0,44	<0,5
	ADI	0.8	mg/kg bw			
Calculated EQS values	AA-QS_{water}	0,46	mg/l			
	AA-$QS_{BalticSea}$	0,046	mg/l			
	MAC-QS	1,23	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	0,123	mg/l			
	QS_{biota}	LogKow <3				
	overall EQS	0,46	mg/l			
	overall $EQS_{BalticSea}$	0,046	mg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Flutolanil**	data source	EFSA conclusion report and DAR					
Degradation	in soil		DT50 115-397 d (20 °C); a-mean 218.5 d, g-mean 190 d (20 °C/pF2)					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 3.4-53 d					
	in sediment		–					
	in water/sediment system		DT50 90-543 d					
	distribution		Max. in sediment 68.7% at d 30					
	comments							
Adsorption	LOG(K_{OW})		3.17 at 21 °C (unbuffered solution)					
	K_{OC}		457-1340					
	LOG(Koc)		3,13 max					
	dependent on pH?		No					
Analysis	LOQ in water		GC/TID 1.0 µg/l; GC/MS 0.01 µg/l*					
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 8.7 mg/kg bw/d = NOEC 174 mg/kg food					
	mammals/birds, acute		B. quail and M. duck LD50 > 2000 mg/kg bw/d					
	aquatic organisms, chronic	fish	P. promelas 30 d NOEC 0.233 mg/l (mm)					
			BCF 100					
		Daphnia	D. magna 21 d NOEC 0.53 mg/l (mm)					
		algae	S. capricornotum 72 h NOEC 0.18 mg/l					
		plants	–					
		other, if tested	–					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	P. promelas 96 h LC50 4.8 mg/l (mm)			4,8	0,68	
		Daphnia	D. magna 48 h EC50 >6.8 mg/l (mm)			6,8	0,83	
		algae	S. capricornotum 72 h ErC50 >3.2 mg/l (mm)			3,2	0,51	
		plants	–		SD (LogL/EC50)		0,16	<0.5
		other, if tested	–					
	ADI	0.09	mg/kg					
Calculated EQS values	$AA\text{-}QS_{water}$	18	µg/l					
	$AA\text{-}QS_{BalticSea}$	1,8	µg/l					
	MAC-QS	320	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	$MAC\text{-}QS_{BalticSea}$	32	µg/l					
	QS_{biota}	5,80	mg/kg food	$AA\text{-}QS_{water}$	58	µg/l	Value above AA-QS	
				$QS_{BalticSea}$	58	µg/l	Value above AA-QS	
	overall EQS	18	µg/l					
	overall $EQS_{BalticSea}$	1,8	µg/l					
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l						

Compound	**Fosetyl-aluminium**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 3 h (20°C)			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 3.75-4.3 d			
	in sediment					
	in water/sediment system		DT50 3.9-4.5 d			
	distribution		Negligible amounts of fosetyl in sediment			
	comments		Ready biodegradable; major metabolites phosphorous acid and ethanol			
Adsorption	LOG(K_{OW})		-2,1 (21-23 °C and pH 6)			
	K_{OC}		Not adsorbed on soil			
	LOG(Koc)					
	dependent on pH?					
Analysis	LOQ in water		"fosetyl-Al" 1 µg/l			
Toxicity	mammals/birds, chronic		J. quail repr. NOEC 1 500 mg/kg food			
	mammals/birds, acute		Rat LD50 oral > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 100 mg/l			
			BCF –			
		Daphnia	D. magna 21 d NOEC 17 mg/l			
		algae	S. subspicatus 72 h NOEC 1.4 mg/l			
		plants	L. gibba 14 d NOEC 20.4 mg/l			
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 > 60 mg/l	60,0	1,78	
		Daphnia	D. magna 48 h LC50 > 100 mg/l	100,0	2,00	
		algae	S. subspicatus 72 h ErC50 > 16 mg/L (mm)	16,0	1,20	
		plants	L. gibba 14 d LC50 79.7 mg/l	79,7	1,90	
		other, if tested	SD (LogL/EC50)		0,36	< 0.5
	ADI	3	mg/kg bw/day			
Calculated EQS values	AA-QS_{water}	140	µg/l			
	AA-$QS_{BalticSea}$	14	µg/l			
	MAC-QS	1,6	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	0,16	mg/l			
	QS_{biota}	LogKow <3				
	overall EQS	140	µg/l			
	overall $EQS_{BalticSea}$	14	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Fuberidazole**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 24.6 d (pF2/10kPa)			
	hydrolytic, in water		pH 4-9: stable (50 °C)			
	in water		DT50 0.53 d			
	in sediment		DT50 26.1 d			
	in water/sediment system		DT50 14.8 d			
	distribution		Max. in sediment 64% at d 3			
	comments					
Adsorption	LOG(K_{OW})		pH 3-5: 0.78-2.51, pH 7: 2.78, pH 9: 2.79 (20°C)			
	K_{OC}		420-698			
	LOG(Koc)		2,84 max			
	dependent on pH?					
Analysis	LOQ in water		HPLC-MS/MS 0.05 µg/l			
Toxicity	mammals/birds, chronic		Dog long term and carc. NOAEL 0.72 mg/kg bw/d = NOEC 28.8 mg/kg food			
	mammals/birds, acute		Rat LD50 > 300-500 mg/kg bw			
	aquatic organisms, chronic	fish	Chronic tox. not tested since a.s. dissipates fast from surface water			
			BCF –			
		Daphnia	D. magna 21 d NOEC 0.12 mg/l (mm)			
		algae	P. subcapitata 72 h NOErC 0.5 mg/l			
		plants	–			
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.91 mg/l (nom)	0,91	-0,04	
		Daphnia	D. magna 48 h EC50 4.7 mg/l (mm)	4,7	0,67	
		algae	P. subcapitata 72 h ErC50 12.1 mg/l (mm)	12,1	1,08	
		plants	– SD (LogL/EC50)		0,57	>0.5
		other, if tested				
	ADI	0.0072	mg/l			
Calculated EQS values	$AA\text{-}QS_{water}$	2,4	µg/l AF is 50, since no chronic data on fish			
	$AA\text{-}QS_{BalticSea}$	0,24	µg/l			
	MAC-QS	9,1	µg/l			
	$MAC\text{-}QS_{BalticSea}$	0,91	µg/l			
	QS_{biota}	LogKow < 3				
	overall EQS	2,4	µg/l			
	overall $EQS_{BalticSea}$	0,24	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Glufosinate-ammonium**	data source	EFSA conclusion report and DAR	
Degradation	in soil		DT50 6-11 d, mean 7.8 d	
	hydrolytic, in water		pH 5-9: stable (25 °C)	
	in water		DT50 1.4-13 d (20°C)	
	in sediment			
	in water/sediment system		DT50 2-11 d (20°C)	
	distribution		Max. in sediment 13% at d 1-7	
	comments			
Adsorption	LOG(K_{OW})		pH 5: -3.77, pH 7: -4.01, pH 9: -4.07 (25°C)	
	K_{OC}		Kf 0.2-3.4 (n=15), Mean 2.3	
	LOG(Koc)		No correlation between the sorption coefficients (Kf-values) of glufosinate and the organic carbon content of the test soils. Therefore, it is not pertinent to calculate a Koc value.	
	dependent on pH?			
Analysis	LOQ in water		GC/FPD or MS 0.05 µg/l	
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 7.5 mg/kg bw/day = NOEC 62.475 mg/kg food	
	mammals/birds, acute		Mouse LD50 416 mg/kg bw	
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 100 mg/l	
			BCF <1	
		Daphnia	D. magna 21 d NOEC 18 mg/l	
		algae	P. subcapitata 72 h NOEC 2.5 mg/l	
		plants	L. gibba 14 d NOEC 0.8 mg/l	
		other, if tested		
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 710 mg/l	
		Daphnia	D. magna 48 h EC50 668 mg/l	
		algae	P. subcapitata 72 h ErC50 >80 mg/l	
		plants	L. gibba 14 d EbC50 1.5 mg/l	
		other, if tested	M. bahia 48 h EC50 7.5 mg/l	
			Mercenaria mercenaria (quahog clam) 48 h >125 mg/l	
			Mysidopsis bahia not counted as “additional marine taxa”,	
			since as a crustacean it should have a different life form or feeding strategy from Daphnia	
	ADI	0.021	mg/kg bw/d	
Calculated EQS values	AA-QS_{water}	80	µg/l	
	AA-$QS_{BalticSea}$	8	µg/l	
	MAC-QS	0,15	mg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$	0,03	mg/l	AF is 50, since one additional marine species tested (clam)
	QS_{biota}	LogKow < 3		
	overall EQS	80	µg/l	
	overall $EQS_{BalticSea}$	8	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Glyphosate as**	data source	EC review report and DAR			
Degradation	in soil		DT50 4-180 d (20°C), mean 49 d			
	hydrolytic, in water		pH 5-8: stable (25°C)			
	in water		DT50 1-4 d (mean 2.5 d)			
	in sediment					
	in water/sediment system		DT50 27-146 d (mean 82 d)			
	distribution		Max. in sediment 60 % at d 14			
	comments		AMPA mainly found in monitoring samples			
	metabolites		AMPA			
Adsorption	LOG(K_{OW})		pH 5-9: - 3.2 at 25 °C			
	K_{OC}		3404-60000; 21699 mean			
	LOG(Koc)		4,78 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC-ECD / HPLC-FluD, 0.05 µg/l; 0,1 µg/l*			
Toxicity	mammals/birds, chronic		Bird repr. NOEC 200 mg/kg food			
	mammals/birds, acute		Rat and bird LD50 oral > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	P. promelas 96 h NOEC 25.7 mg/l			
			BCF			
		Daphnia	D. magna 48 h NOEC 30 mg/l			
		algae	N. palea 96 h NOErC 1 mg/l			
		plants	L. gibba 14 d NOEC 19 mg/l			
		other, if tested				
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h EC50 38 mg/l		38	1,58
		Daphnia	D. magna 48 h EC50 40 mg/l		40	1,60
		algae	N. palea 96 h ErC50 4.5 mg/l		4,5	0,65
		plants	L. gibba 14 d EC50 25 mg/l		25	1,40
		other, if tested		SD (LogL/EC50)		0,45 <0,5
	ADI	0.3	mg/kg bw			
Calculated EQS values	AA-QS_{water}	100	µg/l			
	AA-$QS_{BalticSea}$	10	µg/l			
	MAC-QS	450	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	45	µg/l			
	QS_{biota}	LogKow < 3				
	overall EQS	100	µg/l			
	overall $EQS_{BalticSea}$	10	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	AMPA	data source	DAR and LoEP				
Analysis	LOQ in water		GC-ECD, HPLC-FluD 0.05 µg/l; 0,05 µg/l				
Toxicity	aquatic organisms, chronic	fish	O. mykiss 96 h NOEC > 8 mg/l				
		Daphnia	D. magna 48 h NOEC > 180 mg/l				
		algae	S. subspicatus NOErC 0.96 mg/l				
		plants					
		other, if tested					
					L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 180 mg/l		180	2,26	
		Daphnia	D. magna 48 h EC50 > 180 mg/l		180	2,26	
		algae	S. subspicatus 72 ErC50 452 mg/l		452	2,66	
		plants		SD (LogL/EC50)		0,23	<0.5
		other, if tested					
	ADI						
Calculated EQS values	AA-QS_{water}		96	µg/l			
	AA-$QS_{BalticSea}$		9,6	µg/l			
	MAC-QS		18	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$		1,8	mg/l			
	QS_{biota}	LogKow < 3					
	overall EQS		96	µg/l			
	overall $EQS_{BalticSea}$		9,6	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia > 0,1 mg/l					

Compound	**Imazalil**	data source	EC review report and DAR					
Degradation	in soil		DT50 50.8-474 d (20°C)					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 2.4-3.7 d					
	in sediment		DT50 159-187 d					
	in water/sediment system		DT50 77-97 d					
	distribution		Max. in sediment 69 % at d 14					
	comments							
Adsorption	LOG(K_{OW})		3.82 at 23°C					
	K_{OC}		2080 - 8150					
	LOG(Koc)		3,91	max				
	dependent on pH?							
Analysis	LOQ in water / soil		LC-MS/MS 0.10 µg/l; GC/MS 0.20 µg/l* / LC-MS/MS 0.001 mg/kg					
Toxicity	mammals/birds, chronic		Rat repr. parental NOAEL 5 mg/kg bw = NOEC 62.5 mg/kg food					
	mammals/birds, acute		Rat LD50 299 mg as/kg bw					
	aquatic organisms, chronic	fish	Fish study not needed, since DT50 in water < 4 days					
			BCF	63.8				
		Daphnia	Daphnia study not needed, since DT50 in water < 4 days					
		algae	P. subcapitata 72 h NOEC 0.457 mg/l (mm)					
		plants						
		other, if tested	C. riparius 17 d NOEC 0.18 mg/l					
			C. riparius 17 d NOEC 165.4 mg/kg sediment					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1.48 mg/l (mm)			1,48	0,17	
		Daphnia	D. magna 48 h EC50 3.5 mg/l (nom)			3,5	0,54	
		algae	P. subcapitata 72 h ErC50 1.20 mg/l (mm)			1,2	0,08	
		plants			SD (LogL/EC50)		0,25	<0,5
		other, if tested						
	ADI	0.025	mg/kg bw/day					
Calculated EQS values	AA-QS_{water}	3,6	µg/l	AF is 50, since reliable results from only two trophic levels				
	AA-$QS_{BalticSea}$	0,36	µg/l					
	MAC-QS	120	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$	12	µg/l					
	QS_{biota}	2,083	mg/kg food		AA-QS_{water}	32,65 µg/l	Value above AA-QS	
					$QS_{BalticSea}$	32,65 µg/l	Value above AA-QS	
	overall EQS	3,6	µg/l					
	overall $EQS_{BalticSea}$	0,36	µg/l					
	$QS_{sediment}$	1,654	mg/kg	QSsed				

Compound	**Imidacloprid**	data source	EFSA conclusion report and DAR	
Degradation	in soil		DT50 106-193 d; 10°C: 343 d	
	hydrolytic, in water		pH 5-9: stable (25°)	
	in water		DT50 > 30 d	
	in sediment			
	in water/sediment system		DT50 129 d	
	distribution		Max. in sediment 31.9 % at d 14	
	comments			
Adsorption	LOG(K_{OW})		0.57	
	K_{OC}		109-411	
	LOG(Koc)		2,61	max
	dependent on pH?		No	
Analysis	LOQ in water		LC-LC/UV 0.05 µg/l	
Toxicity	mammals/birds, chronic		Rat neurotox. 90 d NOAEL 9.3 mg/kg bw/day = NOEC 93 mg/kg food	
	mammals/birds, acute		C. japonica LD50 31 mg/kg bw	
	aquatic organisms, chronic	fish	O. mykiss 91 d NOEC 9.02 mg/l	
			BCF	–
		Daphnia	D. magna 21 d NOEC 1.8 mg/l	
		algae	S. subspicatus 72 h NOEC 10 mg/l	
		plants		
		other, if tested	C. riparius 28 d EC10 0.00209 mg/l	
			Microcosm NOEC for chironomids and Batidae, most sensitive taxa: 0.0006 mg/l	
	aquatic organisms, acute	fish	C. variegatus 96 h LC50 161 mg/l	
		Daphnia	D. magna 48 h EC50 85 mg/l	
		algae	S. subspicatus 72 h ErC50 > 10 mg/l	
		plants		
		other, if tested	C. riparius 24 h LC50 0.0552 mg/l	
	ADI		0.06 mg/kg bw/day	
Calculated EQS values	$AA\text{-}QS_{water}$		0,12 µg/l	AF is 5, since based on microcosm data
	$AA\text{-}QS_{BalticSea}$		0,012 µg/l	
	MAC-QS		5,52 µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$		0,552 µg/l	
	QS_{biota}	LogKow <3		
	overall EQS		0,12 µg/l	
	overall $EQS_{BalticSea}$		0,012 µg/l	
	$QS_{sediment}$		0,006 µg/l	0,654 µg/kg orgC

Compound	**Iodosulfuron-methyl-sodium**	data source	EC review report (draft) and DAR
Degradation	in soil		DT50 1-22 d, mean 5 d (20 °C); DT50 15 d (10 °C)
	hydrolytic, in water		DT50 pH 4,4 d, pH 5 31 d, pH 6-7 >1 y, pH 9 362 d
	in water		DT50 13-19 d
	in sediment		
	in water/sediment system		DT50 13-25 d
	distribution		Max. in sediment 10.7 % at d 7
	comments		
Adsorption	LOG(K_{OW})		pH 4: 1.96, pH 9: -1.22
	K_{OC}		0.8-152
	LOG(Koc)		2,18 max
	dependent on pH?		
Analysis	LOQ in water		HPLC-UV 0.1 µg/l
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 70 ppm (3 mg/kg bw/d)
	mammals/birds, acute		Rat LD50 oral 2678 mg/kg bw
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 10 mg/l
			BCF –
		Daphnia	D. magna 21 d NOEC 10 mg/l
		algae	NOEC not given but Lemna more sensitive
		plants	L. gibba 14 d NOEC 0.0004 mg/l; M. spicatum 10 d LOEC 0.0001 mg/l
		other, if tested	
	aquatic organisms, acute	fish	L. macrochirus 96 h EC50 > 100 mg/l
		Daphnia	D. magna 48 h EC50 > 100 mg/l
		algae	P. subcapitata 72 h ErC50 0.178 mg/l
		plants	L. gibba 14 d EC50 0.00083 mg/l
		other, if tested	
	ADI	0.03	mg/kg bw/d
Calculated EQS values	AA-QS_{water}	0,04	µg/l
	AA-$QS_{BalticSea}$	0,004	µg/l
	MAC-QS	0,083	µg/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$	0,0083	µg/l
	QS_{biota}	LogKow < 3	
	overall EQS	0,04	µg/l
	overall $EQS_{BalticSea}$	0,004	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Ioxynil-octanoate**	data source	EFSA conclusion report and DAR						
Degradation	in soil		DT50 4.9 d, mean 1.7 d (20 °C)						
	hydrolytic, in water		pH 5: stable; pH7 DT50 6-52 d						
	in water		DT50 0.4- 0.9 d						
	in sediment								
	in water/sediment system		DT50 3-5 d						
	distribution		Max. in sediment 44 % at d 1						
	comments								
	metabolites		Ioxynil: max. in soil 52.6 % and in water 52 % at d 1						
Adsorption	LOG(K_{OW})		6 (pH and temperature not reported)						
	K_{OC}		403500; measured by HPLC						
	LOG(Koc)		5,6						
	dependent on pH?								
Analysis	LOQ in water		GC/ECD (calculated as bromoxynil methyl ester) 0.1 µg/l						
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 10 mg/kg bw = NOEC 100 mg/kg food						
	mammals/birds, acute		Rat LD50 165 mg/kg bw						
	aquatic organisms, chronic	fish	P. promelas 36 d NOEC (flowtrough test) 0.0022 mg/l (mm)						
			BCF 212						
		Daphnia	D. magna 21 d NOEC 0.0026 mg/l (mm)						
		algae	N. pelliculosa 72 h ErC10 0.027 mg/l (nc)						
		plants	L. gibba 14 d NOEbC 0.0036 mg/l						
		other, if tested	C. riparius 28 d NOEC > 0.100 mg/l						
								L/EC50	logL/EC50
	aquatic organisms, acute	fish	L. macrochirus 96 LC50 0.024 mg/l (mm)					0,024	-1,6
		Daphnia	D. magna 48 h EC50 0.011 mg/l (mm)					0,011	-2,0
		algae	N. pelliculosa 72 h ErC50 > 0.93 mg/l (ic)					0,93	0,0
		plants	L. gibba 14 d EbC50 0.017 mg/l					0,017	-1,8
		other, if tested					SDLogL/EC50		0,9 >0,5
	ADI	0,005	mg/kg/d						
Calculated EQS values	$AA\text{-}QS_{water}$	0,22	µg/l						
	$AA\text{-}QS_{BalticSea}$	0,02	µg/l						
	MAC-QS	0,11	µg/l	Value set to AA-QS					
	$MAC\text{-}QS_{BalticSea}$	0,01	µg/l	Value set to AA-QSBalticSea					
	QS_{biota}	3,33	mg/kg food		$AA\text{-}QS_{water}$	15,71	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	15,71	µg/l	Value above AA-QS	
	overall EQS	0,22	µg/l						
	overall $EQS_{BalticSea}$	0,02	µg/l						
	$QS_{sediment}$	1	µg/l	QSsed	0,40	g/kg org C			

Compound	Ioxynil	data source		DAR and LoEP 2003	
Degradation	in soil			DT50 2.2 d, mean 1,2 d (20 °C)	
	hydrolytic, in water			pH 5-9: stable (22 °)	
	in water			DT50 3.5-3.8 d	
	in sediment				
	in water/sediment system			DT50 4.6-4.9 d	
	distribution			Max. in sediment 11.8 % at d 1	
	comments				
Adsorption	LOG(K_{OW})			highest 2.2 at pH 5	
	K_{OC}			112-633	
	LOG(Koc)			2,80 max	
	dependent on pH?			Yes, higher adsorption in acidic conditions	
Analysis	LOQ in water			GC/ECD (calculated as bromoxynil methyl ester) 0.1 µg/l	
Toxicity	mammals/birds, chronic			Rat repr. NOEC 30 mg/kg food (2.5 mg/kg bw/d)	
	mammals/birds, acute			Bobwhite quail LD50 62 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 3.2 mg/l	
				BCF 6	
		Daphnia		D. magna 21 d NOEC 0.013 mg/l	
		algae		N. pelliculosa 72 h ErC10 0.02 mg/l (mm)	
		plants		L. gibba 14 d NOEC 0.0013 mg/l	
		other, if tested		X. laevis 42 d NOEC 0.844 mg/l	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 0.64 mg/l	
		Daphnia		D. magna 48 h EC50 3.14 mg/l	
		algae		N. pelliculosa 72 h ErC50 > 1.9 mg/l (mm)	
		plants		L. gibba 14 d EC50 0.027 mg/l	
		other, if tested			
	ADI		0,005	mg/kg/d	
Calculated EQS values	AA-QS_{water}		0,13	µg/l	
	AA-$QS_{BalticSea}$		0,013	µg/l	
	MAC-QS		2,7	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,27	µg/l	
	QS_{biota}	LogKow < 3			
	overall EQS		0,13	µg/l	
	overall $EQS_{BalticSea}$		0,013	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Iprodione**	data source	EC review report, DAR and addendum					
Degradation	in soil		DT50 26 d (25 °C), DT50 160 d (15 °C)					
	hydrolytic, in water		DT50: pH 5 146 d, pH 7 3 d, pH 8 0.2d					
	in water		DT50 < 6 h (pH 7.5-7.9)					
	in sediment							
	in water/sediment system		DT50 < 30 d					
	distribution		Max. in sediment 81 % at d 100					
	comments							
Adsorption								
	LOG(K_{OW})		pH 3: 2.99, pH 5: 3.0					
	K_{OC}		202-543 (4 soils)					
	LOG(Koc)		2,7 max					
	dependent on pH?		No					
Analysis	LOQ in water		GC-EC 0.05 µg/l; LC/MS 0.05 µg/l*					
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 6.1 mg/kg bw/d = NOEC 122 mg/kg food					
	mammals/birds, acute		Rat and bird LD50 > 2000 mg/kg					
	aquatic organisms, chronic	fish	P. promelas 34 days NOEC 0.26 mg/l					
			BCF 70					
		Daphnia	D. magna NOEC (21 days): 0.17 mg/l					
		algae	S. capricornutum 120 h NOEC 0.13 mg/l					
		plants	L. gibba NOEC > 1.01 mg/l					
		other, if tested						
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	I. punctatus 96 h LC50 3.1 mg/l			3,7	0,57	
		Daphnia	D. magna 48h EC50 0.66 mg/l			0,66	-0,18	
		algae	S. capricornutum 72 h EC50 1.8 mg/l			1,8	0,26	
		plants			SD (LogL/EC50)		0,38	<0.5
		other, if tested						
	ADI	0.06	mg/kg bw/day					
Calculated EQS values	$AA\text{-}QS_{water}$	17	µg/l					
	$AA\text{-}QS_{BalticSea}$	1,7	µg/l					
	MAC-QS	66	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	$MAC\text{-}QS_{BalticSea}$	6,6	µg/l					
	QS_{biota}	4,067	mg/kg food	$AA\text{-}QS_{water}$	58,1	µg/l	Value above AA-QS	
				$QS_{BalticSea}$	58,1	µg/l	Value above AA-QS	
	overall EQS	17	µg/l					
	overall $EQS_{BalticSea}$	1,7	µg/l					
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l						

Compound	**Kresoxim-methyl**	data source	EC review report and DAR (revised in March 2010)			
Degradation	in soil		DT50 0.87 d (20°C/pF2); field DT90 <1d			
	hydrolytic, in water		pH 5: DT50 821.8 d, pH 7: DT50 35 d, pH 9: DT50 0.38 d at 25°C			
	in water		DT50 0.8-0.9 d			
	in sediment					
	in water/sediment system		DT50 1.31 d			
	distribution		Max. in sediment active substance and BF490 26.8 % at 1 d			
	comments		Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.			
	metabolites		Rapidly transformed to the carboxylic acid BF 490-1 (metabolite in soil and water)			
Adsorption	LOG(K_{OW})		3.4 at 25°C			
	K_{OC}		219-372			
	LOG(Koc)		2,57 max			
	dependent on pH?					
Analysis	LOQ in water		LC-MS/MS 0.03 µg/l; GC/MS 0.01 µg/l*			
Toxicity	mammals/birds, chronic		C. virginianus repr. NOEC 500 mg/kg food			
	mammals/birds, acute		Bobwhite quail LD50 > 2150 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 13 µg/l (mm)			
			BCF 220			
		Daphnia	D. magna 21 d NOEC 32 µg/l (nom)			
		algae	S. capricornutum 72 h EbC10 7 µg/l (nom)			
		plants	Lemna less sensitive than 3 species of algae in a non-target-plant study			
		other, if tested	Mesocosm NOEC 6.6 µg/l (nom); included Chironomus			
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 190 µg/l (mm)	190	2,28	
		Daphnia	D. magna 48 h EC50 186 mg/l (nom)	186	2,27	
		algae	S. capricornutum 72 h EbC50 63 µg/l (nom)	63	1,80	
		plants	Lemna less sensitive than 3 species of algae in a non-target-plant study	59	1,77	
		other, if tested	M. bahia 96 h EC50 59 µg/l (mm)	15	1,18	
			C. virginica 96 h EC50 (shell deposition) 15 µg/l SD (LogL/EC50)		0,45	<0.5
			Mysidopsis bahia not counted as "additional marine taxa", since as a crustacean it should have a different life form or feeding strategy from Daphnia			
	ADI		0.4 mg/kg bw			
Calculated EQS values	AA-QS_{water}	DT50 < 2 d				
	AA-$QS_{BalticSea}$	DT50 < 2 d				
	MAC-QS		1,5 µg/l AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$		0,3 µg/l AF is 50, since additional marine species tested (oyster)			
	QS_{biota}	DT50 < 2 d				
	$QS_{sediment}$	DT50 < 2 d				

Compound	BF490-1	data source	EC review report; DAR (revised in March 2010)				
Degradation	in soil		DT50 37.8 d (20°C and pF2)				
	hydrolytic, in water						
	in water		DT50 36 d				
	in sediment						
	in water/sediment system		DT50 393 d				
	distribution		Max. in sediment 17.5 % at d 14				
	comments						
Adsorption	LOG(K_{OW})		log Kow <3				
	K_{OC}		17-24				
	LOG(Koc)		1,38	max			
	dependent on pH?		17-109				
Analysis	LOQ in water		LC-MS/MS 0.03 µg/l				
Toxicity	mammals/birds, acute		Acute oral LD50 1545 mg/kg bw				
	aquatic organisms, chronic	other, if tested	No chronic data for BF490-1				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >100 mg/l			100	2,0
		Daphnia	D. magna 48 h EC50 >100 mg/l			100	2,0
		algae	P. subcapitata 72 h ErbC50 >500 mg/l			500	2,7
					SD (LogL/EC50)		0,40
	AA-QS_{water}	No data					
	AA-$QS_{BalticSea}$	No data					
	MAC-QS		10	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$		1	mg/l			
	QS_{biota}	Log Kow <3					
	$QS_{sediment}$	No data					

Compound	**Lambda-cyhalothrin**	data source	EC review report and DAR				
Degradation	in soil		DT50 29-100 d, mean 56 d (20°C), 63 d (10°C)				
	hydrolytic, in water		pH 5.2-6.9: stable; pH 9.0 ~7 d				
	in water		DT50 5-11 h, mean 8 h				
	in sediment						
	in water/sediment system		DT50 7-15 d, mean 11 d				
	distribution		Not reported clearly				
	comments						
Adsorption	LOG(K_{OW})		7.0				
	K_{OC}		38000-345000				
	LOG(Koc)		5,54	max			
	dependent on pH?						
Analysis	LOQ in water / soil		GC-ECD 1 ng/l; GC/MS 20 ng/l* / GC-ECD 0.01 mg/kg; GC/MSD 0.02 mg/kg*				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 0.7 mg/kg bw/day = NOEC 7 mg/kg food				
	mammals/birds, acute		Mouse LD50 20 mg/kg bw <25 mg/kg bw (highly toxic)				
	aquatic organisms, chronic	fish	C. variegatus 28 d NOEC 0.25 µg/l				
			BCF	2240			
		Daphnia	D. magna 21 d NOEC 0.002 µg/l				
		algae	S. capricornotum 96 h NOEC > 300 µg/l (mm)				
		plants	–				
		other, if tested	C. riparius 28 d NOEC 0.16 µg/l, 105 µg/kg sediment				
			Mesocosm: no clear data on tested concentration				
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 0.21 µg/l				
		Daphnia	D. magna 48 h EC50 0.36 µg/l				
		algae	S. capricornotum 96 h EC 50 > 300 µg/l (mm)				
		plants					
		other, if tested	G. pulex 96 h EC50 0.016 µg/l, NOEC 0.006 µg/l				
	ADI	0.005	mg/kg bw/d				
Calculated EQS values	$AA\text{-}QS_{water}$	0,2	ng/l				
	$AA\text{-}QS_{BalticSea}$	0,02	ng/l				
	MAC-QS	1,6	ng/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,16	ng/l				
	QS_{biota}	0,078	mg/kg food		QS_{water}	17,4	ng/l Value above AA-QS
					$QS_{BalticSea}$	8,71	ng/l Value above AA-QSBalticSea
	overall EQS	0,2	ng/l				
	overall $EQS_{BalticSea}$	0,02	ng/l				
	$QS_{sediment}$	1,05	µg/kg	QSsed			

Compound	**Linuron**	data source	EC review report, DAR and LoEP				
Degradation	in soil		DT50 38-135 d (15-25°C), DT50 126-276 d (4-5°C)				
	hydrolytic, in water		pH 5-9: stable (22 °C)				
	in water		DT50 48 d				
	in sediment						
	in water/sediment system		DT50 46 d				
	distribution		Max. in sediment 25 % at d 14				
	comments						
Adsorption	LOG(K_{OW})		3.0				
	K_{OC}		410-463				
	LOG(Koc)		2,67	max			
	dependent on pH?						
Analysis	LOQ in water		GC-MSD 0.05 µg/l; LC/MS 0.01 µg/l*				
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 0.8 mg/kg bw/day = NOEC 6.7 mg/kg food				
	mammals/birds, acute		C. virginianus LD50 314 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.1 mg/l				
			BCF	49			
		Daphnia	D. magna 21 d NOEC 0.18 mg/l				
		algae	S. subspicatus 72 h NOEC 0.0056 mg/l				
		plants	Mesocosm/E. nuttallii NOEC 0.5 µg/l				
		other, if tested					
	aquatic organisms, acute	fish	O. mykiss 96 h 3.15 mg/l				
		Daphnia	D. magna 24 h EC50 0.31 mg/l				
		algae	S. subspicatus 72 h ErC50 0.016 mg/l				
		plants	L. minor 120 h EC50 0.007 mg/l				
		other, if tested					
	ADI	0.003	mg/kg bw/d				
Calculated EQS values	$AA\text{-}QS_{water}$	0,1	µg/l	AF is 5, since based on mesocosm study			
	$AA\text{-}QS_{BalticSea}$	0,01	µg/l				
	MAC-QS	0,7	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,07	µg/l				
	QS_{biota}	0,2221	mg/kg food		$AA\text{-}QS_{water}$	45,3 µg/l	Value above AA-QS
					$QS_{BalticSea}$	45,3 µg/l	Value above AA-QS
	overall EQS	0,1	µg/l				
	overall $EQS_{BalticSea}$	0,01	µg/l				
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l					

Compound	**Maleic hydrazide**	data source	EU review report and DAR	
Degradation	in soil		20°C: 0.5-3.68 d	
	hydrolytic, in water		pH 3-9: stable	
	in water		DT50 28-85 d	
	in sediment			
	in water/sediment system		DT50 28-85 d	
	distribution		Only found in water phase	
	comments			
Adsorption	LOG(K_{OW})		pH 5: 0.21, pH 7: 0.011, pH 9: 0.00385	
	K_{OC}		19.8-78.9	
	LOG(Koc)		1,90 max	
	dependent on pH?			
Analysis	LOQ in water		HPLC-ECD 0.1 µg/l	
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 25 mg/kg bw/day = NOEC 500 mg/kg food	
	mammals/birds, acute		A. platyrhynchos LD50 > 4640 mg/kg bw	
	aquatic organisms, chronic	fish	No data	
			BCF –	
		Daphnia	D. magna MH K salt 21 d NOEC 0.95 mg/l	
		algae	S. capricornutum MH K salt 120 h NOEC > 9.84 mg/l	
		plants	L. gibba MH K 14 d NOEC 23.7 mg/l	
		other, if tested		
	aquatic organisms, acute	fish	O. mykiss MH K salt 96 h LC50 > 1000 mg/l	
		Daphnia	D. magna MH K salt 48 h LC50 >1000 mg/l	
		algae	S. capricornutum MH K salt 120 h EC50 > 9.84 mg/l	
		plants	L. gibba MH K salt 14 d LC50 110 mg/l	
		other, if tested		
		all results on the potassium salt		
	ADI	0.25	mg/kg bw/day	
Calculated EQS values	AA-QS_{water}	19	µg/l	AF is 50, since only data on Daphnia and algae
	AA-$QS_{BalticSea}$	1,9	µg/l	
	MAC-QS	984	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$	98,4	µg/l	
	QS_{biota}	LogKow <3		
	overall EQS	19	µg/l	
	overall $EQS_{BalticSea}$	1,9	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Mancozeb**	data source	EC review report/proposal
Degradation	in soil		DT50 1-3 h(estimate); metabolite ETU max. 3.1%
	hydrolytic, in water		pH 5-9: 2-55 h; Hydrolysis product ETU
	in water		DT50 < 1 d; metabolite ETU: max 48.5% at d 1
	in sediment		
	in water/sediment system		DT50 < 1 d
	distribution		Parent not detected
	comments		Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.
	metabolites		ETU toxicologically significant, see separate sheet
Adsorption	LOG(K_{OW})		1.33 (EC report); 1.38 (proposal)
	K_{OC}		363 –2334, mean 997.5
	LOG(Koc)		3,4 max
	dependent on pH?		No
Analysis	LOQ in water		0.1 µg/l
Toxicity	mammals/birds, chronic		Bird repr. NOEC 125 mg/kg food
	mammals/birds, acute		LD50 bird >2000 mg/kg bw
	aquatic organisms, chronic	fish	–
			BCF –
		Daphnia	D. magna 21 d NOEC 0.0073 mg/l (mm)
		algae	
		plants	
		other, if tested	Microcosm study: No NOEC for community
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.074 mg/l (mm)
		Daphnia	D. magna 48 h LC50 0.073 mg/l (mm)
		algae	P. subcapitata 120h EC50 0.044 mg as/l (formulation Dithane M-45)
		plants	
		other, if tested	
	ADI	0.05	mg/kg bw/d
Calculated EQS values	AA-QS_{water}	DT50 < 2 d, see ETU	
	AA-$QS_{BalticSea}$	DT50 < 2 d, see ETU	
	MAC-QS	0,44	µg/l
	MAC-$QS_{BalticSea}$	0,044	µg/l
	QS_{biota}	DT50 < 2 d	
	$QS_{sediment}$	DT50 < 2 d	

Compound	**Maneb**	data source		EC review report
Degradation	in soil			DT50 < 2-3.5 h (20°C); 4.4-7.7 h (10 °C); metabolite in soil ETU 9.6-20.4 %
	hydrolytic, in water			pH 3-9: <1 d; Hydrolysis product ETU
	in water			DT50 2.4 -14.4 h
	in sediment			
	in water/sediment system			DT50 2.4 - 14.4 h
	distribution			Concentration in sediment not relevant
	comments			Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.
	metabolites			ETU toxicologically significant, see separate sheet
Adsorption	LOG(K_{OW})			pH 5: < -0.17, pH 7: < -0.45, pH 9: < -1 (20°C)
	K_{OC}			
	LOG(Koc)			
	dependent on pH?			
Analysis	LOQ in water			LOD 0.1 µg/l
Toxicity	mammals/birds, chronic			
	mammals/birds, acute			
	aquatic organisms, chronic	fish		P. promelas 35 d NOEC 0.0061 mg/l (mm)
				BCF
		Daphnia		D. magna 21 d NOEC 0.0021 mg/l (mm)
		algae		
		plants		
		other, if tested		
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 0.16 mg/l (mm)
		Daphnia		D. magna 48 h LC50 0.25 mg/l (mm)
		algae		S. capricornotum 120 h EC50 0.007 mg/l (mm)
		plants		
		other, if tested		
	ADI		0.05	mg/kg bw/d
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 d, see ETU		
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 d, see ETU		
	MAC-QS		0,07	µg/l
	$MAC\text{-}QS_{BalticSea}$		0,007	µg/l
	QS_{biota}	DT50 < 2 d		
	$QS_{sediment}$	DT50 < 2 d		

Compound	ETU	data source	EC reports/proposal			
Degradation	in soil		DT50 0.3-1 d, 10°C 2.2 d			
	hydrolytic, in water		Stable			
	in water		DT50 4.0-11.1 d, mean 6.9 d			
	in sediment		DT50 1.4-9.6 d, mean 4.9 d			
	in water/sediment system		DT50 6.7-11.1 d, mean 8.2 d			
	distribution		Max. in sediment 13.7 % at d 7			
	comments					
	metabolites					
Adsorption	LOG(K_{OW})		0.15			
	K_{OC}		34-146, mean 70 d			
	LOG(Koc)		2,16 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC < 0.1 µg/l; 0.5 µg/l*			
Toxicity	mammals/birds, chronic		2 gen. rat 150 mg/kg food			
	mammals/birds, acute					
	aquatic organisms, chronic	fish	–			
			BCF –			
		Daphnia	D. magna 21 d NOEC 2.0 mg/l			
		algae	P. subcapitata 72 h ErC10 16.7 mg/l			
		plants				
		other, if tested	X. laevis 28 d NOEC 10 mg/l			
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >500 mg/l	500	2,70	
		Daphnia	D. magna 48 h EC50 21.6 mg/l	21,6	1,33	
		algae	P. subcapitata 72 h ErC50 93.8 mg/l	93,8	1,97	
		plants		SD Log (L/EC50)	0,68	>0.5
		other, if tested				
Calculated EQS values	$AA\text{-}QS_{water}$	200	µg/l			
	$AA\text{-}QS_{BalticSea}$	20	µg/l			
	MAC-QS	216	µg/l			
	$MAC\text{-}QS_{BalticSea}$	22	µg/l			
	QS_{biota}	LogKow <3				
	overall EQS	200	µg/l			
	overall $EQS_{BalticSea}$	20	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Mandipropamid**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 23.4-83.9 d (20°C/pF2)			
	hydrolytic, in water		pH 4-9: stable			
	in water		stable			
	in sediment		DT50 4.4-7.7 d			
	in water/sediment system		DT50 5.9-25.9 d			
	distribution		Max. in sediment 64.0 % at d 1			
	comments					
Adsorption	LOG(K_{OW})		3.2 in pure water (25 °C)			
	K_{OC}		405-1294			
	LOG(Koc)		3,11 max			
	dependent on pH?		No			
Analysis	LOQ in water		LC-MS/MS 0.05 µg/l			
Toxicity	mammals/birds, chronic		Rat long-term and carc. NOEC 50 mg/kg food			
	mammals/birds, acute		Anas platyrhynchos LC50 > 1000 mg/kg bw			
	aquatic organisms, chronic	fish	P. promelas 28 d NOEC 0.5 mg/l (nom)			
			BCF 48			
		Daphnia	D. magna 21 d NOEC 0.28 mg/l (mm)			
		algae	A. flos-aquae 96 h NOEC 19.8 mg/l (mm)			
		plants	L. gibba 7 d NOEC 3.0 mg/l (mm)	L/EC50	logL/EC50	
		other, if tested		2	0,30	
	aquatic organisms, acute	fish	C. carpio > 2.0 mg/l (mm)	19,8	1,30	
		Daphnia	D. magna 48 h EC50 7.1 mg/l (nom)	4,2	0,62	
		algae	A. flos-aquae 96 h ErC50 > 19.8 mg/l (mm)	4,5	0,65	
		plants	L. gibba 7 d ErC50 > 4.2 mg/l (mm)	1,7	0,23	
		other, if tested	C. variegatus LC50 (96 h) 4.5 mg/l	0,97	-0,01	
			M. bahia EC50 (48 h): 1.7 mg/l	SD (LogL/EC50)	0,41	<0.5
			C. virginica 96 h EC50 (shell dep.) 0.97 mg/l (mm)			
		Sheephead minnow and mysid shrimp not counted as "additional marine taxa", since they don't have a different life form or feeding strategy from C. carpio and Daphnia				
	ADI					
Calculated EQS values	$AA\text{-}QS_{water}$	28 µg/l				
	$AA\text{-}QS_{BalticSea}$	2,8 µg/l				
	MAC-QS	97 µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	$MAC\text{-}QS_{BalticSea}$	19,4 µg/l	AF is 50, since one additional marine species tested (oyster)			
	QS_{biota}	1,667 mg/kg food	$AA\text{-}QS_{water}$ 34,73 µg/l	Value above AA-QS		
			$QS_{BalticSea}$ 34,73 µg/l	Value above AA-QS		
	overall EQS	28 µg/l				
	overall $EQS_{BalticSea}$	2,8 µg/l				
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**MCPA**	data source	DAR and LOEP/proposal
Degradation	in soil		DT50 7-41 d (20 °C), 78 d (10 °C)
	hydrolytic, in water		pH 5-9: stable
	in water		DT50 13.5 d
	in sediment		
	in water/sediment system		DT50 16.9 d
	distribution		Max. in sediment <20%
	comments		
Adsorption	LOG(K_{OW})		pH1: 2.7-2.8, pH5: 0.28-0.59, pH7: -0.81 - -0.71, pH9: -1.07 - -0.88
	K_{OC}		10-157, mean 74
	LOG(Koc)		2,20 max
	dependent on pH?		Yes (less adsorption in higher pH)
Analysis	LOQ in water		GC/MS 0.1 µg/l / LC/MS 0.01 µg/l*
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 4.2 mg/kg bw/d = NOEC 420 mg/kg food
	mammals/birds, acute		C. virginianus LD50 270 mg/kg bw
	aquatic organisms, chronic	fish	P. promelas 28 d NOEC 15 mg/l
			BCF
		Daphnia	D. magna 21 d NOEC 13 mg/l
		algae	N. pelliculosa 120 h NOEC 10.3 mg/l
		plants	L. gibba 14 d NOEC 0.0162 mg/l
		other, if tested	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 117 mg/l
		Daphnia	D. magna 48 h EC50 >190 mg/l
		algae	N. pelliculosa 120 h ErC50 117 mg/l
		plants	L. gibba 14 d EC50 0.152 mg/l
		other, if tested	
	ADI	0.05	mg/kg bw/d
Calculated EQS values	AA-QS	1,62	µg/l
	$AA\text{-}QS_{BalticSea}$	0,16	µg/l
	MAC-QS	15,2	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	1,52	µg/l
	QS_{biota}	LogKow <3	
	overall EQS	1,62	µg/l
	overall $EQS_{BalticSea}$	0,16	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Mecoprop-p**	data source	EC review report; DAR, addendum and LoEP				
Degradation	in soil		DT50 5-30 d				
	hydrolytic, in water						
	in water		DT50 24-49 d				
	in sediment						
	in water/sediment system		DT50 23-67 d				
	distribution		No clear information available				
	comments						
Adsorption	LOG(K_{OW})		pH 5: 1.43, pH 7: 0.02, pH 9: -0.18				
	K_{OC}		20-167				
	LOG(Koc)		2,22	max			
	dependent on pH?		Adsorption is higher in the lower pH				
Analysis	LOQ in water		GC-ECD 0.1 µg/l; LC/MS 0.01 µg/l* (mecoprop+mecoprop-P)				
Toxicity	mammals/birds, chronic		Dog 90 d NOAEL 4 mg/kg bw/d = NOEC 40 mg/kg food				
	mammals/birds, acute		Rat LD50 oral 431 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC > 50 mg/l				
			BCF	3.0			
		Daphnia	D. magna 21 d NOEC 22.2 mg/l				
		algae	A. flos-aquae 72 h NOEC 6.0 mg/l				
		plants	L. gibba 14 d NOEC < 0.44 mg/l				
		other, if tested					
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 > 100 mg/l			100,0	2,00
		Daphnia	D. magna 48 h EC50 > 91 mg/l			91,0	1,96
		algae	A. flos-aquae 72 h ErC50 23.9 mg/l			23,9	1,38
		plants	L. gibba 14 d EbC50 1.6 mg/l			1,6	0,20
		other, if tested			SD (LogL/EC50)		0,84 >0.5
	ADI	0.01	mg/kg bw/day				
Calculated EQS values	AA-QS_{water}	44	µg/l				
	AA-$QS_{BalticSea}$	4,4	µg/l				
	MAC-QS	16	µg/l	Value set to AA-QS			
	MAC-$QS_{BalticSea}$	1,6	µg/l	Value set to AA-QSBalticSea			
	QS_{biota}	LogKow <3					
	overall EQS	44	µg/l				
	overall $EQS_{BalticSea}$	4,4	µg/l				
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l					

Compound	**Mepanipyrim**	data source	EC review report, DAR and addendum					
Degradation	in soil		DT50 46.0-191.4 d; 10 °C: 190.2-382.6 d					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 4-10 d					
	in sediment							
	in water/sediment system		DT50 11-18 d					
	distribution		Max. in sediment 47% at d 7					
	comments							
Adsorption	LOG(K_{OW})		3.28 at 20 °C (pH range 6.5-6.8)					
	K_{OC}		395-5859					
	LOG(Koc)		3,77 max					
	dependent on pH?		Adsorption is higher in lower pH; exception the highest value (Koc 5859, pH 8.3)					
Analysis	LOQ in water		GC/NPD 0.05 µg/l					
Toxicity	mammals/birds, chronic		Rat 90 d NOEC 100 mg/kg food (7 mg/kg bw/d)					
	mammals/birds, acute		Bobwhite quail and mallard duck LD50 > 2250 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 0.029 mg/l					
			BCF 280					
		Daphnia	D. magna 21 d NOEC 0.031 mg/l					
		algae	S. capricornutum 72 h NOEC 0.34 mg/l					
		plants	C. riparius 28 d NOEC 1.20 mg/l					
		other, if tested	Mesocosm: NOEC A. aquaticus 0.025 mg/l					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >0.74 mg/l			0,74	-0,13	
		Daphnia	D. magna 48 h EC50 0.63 mg/l			0,63	-0,20	
		algae	S. capricornutum 72 h 1.20 mg/l			1,2	0,08	
		plants			SD (LogL/EC50)		0,15	<0.5
		other, if tested						
	ADI							
Calculated EQS values	AA-QS_{water}	2,5	µg/l	AF is 10, since mesocosm not representative of the integrity of pond ecosystem				
	AA-$QS_{BalticSea}$	0,25	µg/l					
	MAC-QS	63	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$	6,3	µg/l					
	QS_{biota}	1,111	mg/kg food		QS_{water}	3,97	µg/l	Value above AA-QS
					$QS_{BalticSea}$	3,97	µg/l	Value above AA-QS
	overall EQS	2,5	µg/l					
	overall $EQS_{BalticSea}$	0,25	µg/l					
	$QS_{sediment}$	12	µg/l	QSsed	4,74	mg/kg orgC		

Compound	**Mepiquat chloride**	data source		EFSA conclusion report and DAR
Degradation	in soil			DT50 5-37 d; DT50 83 d (10°C)
	hydrolytic, in water			pH 3-9: stable (25°C)
	in water			DT50 6-9 d
	in sediment			DT50 23.5 d
	in water/sediment system			DT50 32.5 d
	distribution			Max. in sediment 56.2 % at d 14
	comments			Readily biodegradable
Adsorption	LOG(K_{OW})			pH 4: -3.20, pH 7: -3.55
	K_{OC}			67-4833
	LOG(Koc)			3,68 max
	dependent on pH?			No
Analysis	LOQ in water			HPLC-MS-MS 0.05 µg/l
Toxicity	mammals/birds, chronic			Dog 90 d NOAEL 30.5 mg/kg bw/day = NOEC 1220 mg/kg food
	mammals/birds, acute			Rat LD50 200 mg/kg bw
	aquatic organisms, chronic	fish		O. mykiss 28/95 d NOEC 100 mg/l
				BCF –
		Daphnia		D. magna 21 d NOEC 12.5 mg/l
		algae		A. flos-aquae 96 h NOEC 10 mg/l
		plants		L.gibba 7 d NOEbC 0.01 mg/l
		other, if tested		
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 >100 mg/l
		Daphnia		D. magna 48 h EC50 68.5 mg/l
		algae		A. flos-aquae 96 h ErC50 44.8 mg/l
		plants		L. gibba 7 d ErC50 15.41 mg/l
		other, if tested		
	ADI		0.2	mg/kg bw/day
Calculated EQS values	AA-QS_{water}		1	µg/l
	AA-$QS_{BalticSea}$		0,1	µg/l
	MAC-QS		154	µg/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		15	µg/l
	QS_{biota}	LogKow < 3		
	overall EQS		1	µg/l
	overall $EQS_{BalticSea}$		0,1	µg/l
	$QS_{sediment}$	No chironomus tested needed, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Metalaxyl-M**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 7-58.4 d (20-25°C); 15°C median DT50 38 d; 10°C DT50 43 d			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 47.5 d			
	in sediment		–			
	in water/sediment system		DT50 47.5 d			
	distribution		Max. in sediment phases 20.4% at day 7			
	comments		Metalaxyl-M degradation pathway is similar to that of metalaxyl			
Adsorption	LOG(K_{OW})		1.71 (25°C and pH 7.6)			
	K_{OC}		Koc 20-1299			
	LOG(Koc)		3,11 max			
	dependent on pH?					
Analysis	LOQ in water		0.1 µg/l; CG/MS 0.02 µ/l*			
Toxicity	mammals/birds, chronic		Rat 90 d NOEC 250 mg/kg food (NOAEL 8mg/kg bw/d)			
	mammals/birds, acute		Rat LD50 664 mg/kg bw			
	aquatic organisms, chronic	fish	P. promelas 31 d + O. mykiss 21 d NOEC 9.1 mg/l			
			BCF 15			
		Daphnia	D. magna NOEC 1.2 mg/l			
		algae	S. subspicatus 72 h NOEbC 9.6 mg/l			
		plants				
		other, if tested	M. bahia NOEC 11 mg/l	L/EC50	logL/EC50	
			C. virginica 96 h (shell dep.) NOEC 1.4 mg/l	100	2,00	
				100	2,00	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 100 mg/l	36	1,56	
		Daphnia	D. magna 48 h LC50 > 100 mg/l	9,7	0,99	
		algae	S. subspicatus 72 h EbC50 36 mg/l	25,0	1,40	
		plants	SD (LogL/EC50)		0,43	<0.5
		other, if tested	C. virginica 96 h EC50 (shell dep.) 9.7 mg/l			
			M. bahia 96 h LC50 25 mg/l			
			M. bahia not counted as "additional marine taxa", since as a crustacean it should have a different life form or feeding strategy from Daphnia			
	ADI		0.08 mg/kg bw/d			
Calculated EQS values	AA-QS_{water}		0,12 mg/l			
	AA-$QS_{BalticSea}$		0,012 mg/l			
	MAC-QS		0,97 mg/l AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$		0,194 mg/l AF is 50, since an additional marine species (oyster) was tested			
	QS_{biota}	LogKow < 3				
	overall EQS		0,12 mg/l			
	overall $EQS_{BalticSea}$		0,012 mg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Metamitron**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 8.2-45.2 (20 °C/pF2)	
	hydrolytic, in water			pH 5-7: stable, pH 9 8.5 d	
	in water			DT50 10.54 d	
	in sediment			–	
	in water/sediment system			DT50 11.1 d	
	distribution			Max. in sediment 47% at d 100 d; max in water 109% at 0 d	
	comments				
Adsorption	LOG(K_{OW})			0.85-0.96	
	K_{OC}			1.77-428 (proposal)	
	LOG(Koc)			2,63 max	
	dependent on pH?			No	
Analysis	LOQ in water			HPLC-DAD 0.1 µg/l; LC/MS 0.01 µg/l*	
Toxicity	mammals/birds, chronic			Dog 90 d NOAEL 3.6 mg/kg bw/d = NOEC 144 mg/kg food	
	mammals/birds, acute			Mouse LD50 668 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 7.0 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 10 mg/l (nom)	
		algae		P. subcapitata 72 h NOEC 0.12 mg/l (im)	
		plants		L. gibba 7 d NOEC 0.04 mg/l (mm)	
		other, if tested		Mesocosm EAC 1.12 mg/l	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 > 190 mg/l	
		Daphnia		D. magna 48 h EC50 5.7 mg/l (mm)	
		algae		P. subcapitata 72 h ErC50 1.8 mg/l (im)	
		plants		L. minor 14 d EC50 fronds 0.45 mg/l (mm)	
		other, if tested			
	ADI		0.03	mg/kg bw/d	
Calculated EQS values	AA-QS		4	µg/l	
	AA-$QS_{BalticSea}$		0,4	µg/l	
	MAC-QS		45	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		4,5	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		4	µg/l	
	overall $EQS_{BalticSea}$		0,4	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Metazachlor**	data source	EFSA conclusion report and DAR		
Degradation	in soil		DT50 5.0-25.3 d (pF2/10kPa)		
	hydrolytic, in water		pH 4-9: stable (20-25°C)		
	in water		DT50 137.6 d		
	in sediment		DT50 4.6 d		
	in water/sediment system		DT50 19.3 d		
	distribution		Max. in sediment 19.76 % at d 15		
	comments				
Adsorption	LOG(K_{OW})		2.5 at 22°C at pH 7 and pH 2.1		
	K_{OC}		53.8-220.0		
	LOG(Koc)		2,34	max	
	dependent on pH?				
Analysis	LOQ in water / soil		LC-MS-MS 0.05 µg/l; GC/LC 0.02 µg/l* / LC-MS/MS 0.01 mg/kg; GC/MSD 0.05 mg/kg*		
Toxicity	mammals/birds, chronic		Rat long-term and carc. NOAEL 3.2 mg/kg bw/d = NOEC 64 mg/kg food		
	mammals/birds, acute		Bird and mammal LD50 > 2000 mg/kg bw		
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 2.15 mg/l		
			BCF	–	
		Daphnia	D. magna 21 d NOEC 0.1 mg/l		
		algae	S. subspicatus 72 h NOEC 1.8 µg/l		
		plants	L. gibba 14 d NOEC 0.193 µg/l		
		other, if tested	C. riparius 28 d NOEC 7.93 mg/kg sediment		
			Mesocosm NOEC 2.0 µg/l		
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 8.5 mg/l		
		Daphnia	D. magna 48 h EC50 33.0 mg/l		
		algae	S. subcapitatus 72 h ErC50 0.031 mg/l		
		plants	L. gibba 14d ErC50 0.0065 mg/l		
		other, if tested			
	ADI				
Calculated EQS values	AA-QS_{water}		0,4	µg/l	AF is 5, since mesocosm study was used
	AA-$QS_{BalticSea}$		0,04	µg/l	
	MAC-QS		0,65	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,065	µg/l	
	QS_{biota}	LogKow < 3			
	overall EQS		0,4	µg/l	
	overall $EQS_{BalticSea}$		0,04	µg/l	
	$QS_{sediment}$		79,3	µg/kg sediment	QSsed

Compound	**Metconazole**	data source	EFSA conclusion report and DAR					
Degradation	in soil		DT50 84 d (20 °C); DT50 185-598 d (22°C), DT50 564 d (10°C)					
	hydrolytic, in water		pH 4-9: stable (50°C)					
	in water		DT50 1-15 d					
	in sediment		Similar to the DT50 whole system					
	in water/sediment system		DT50 116-814 d					
	distribution		Max. in sediment 78.4 % at d 100					
	comments							
Adsorption	LOG(K_{OW})		3.85 at 20 °C (pH 7.2-8)					
	K_{OC}		726-1718					
	LOG(Koc)		3,24 max					
	dependent on pH?		No					
Analysis	LOQ in water		GC-NPD 0.05 µg/L					
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 6.4mg/kg bw/d = 64 mg/kg food					
	mammals/birds, acute		Mouse LD50 410 mg a.s./kg bw					
	aquatic organisms, chronic	fish	O. mykiss 95 d NOEC 0.00291 mg/l					
			BCF 129					
		Daphnia	D. magna 21 d NOEC 0.16 mg/l					
		algae	S. capricornutum 72 h NOEC 0.38 mg/l					
		plants						
		other, if tested	C. riparius 28 d NOEC 2.12 mg/l					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 72 h LC50 2.1 mg/l			2,1	0,32	
		Daphnia	D. magna 48 h LC50 4.2 mg/l			4,2	0,62	
		algae	S. capricornutum 72 h ErC50 2.2 mg/l			2,2	0,34	
		plants			SD (LogL/EC50)		0,17	<0.5
		other, if tested						
	ADI							
Calculated EQS values	AA-QS_{water}	0,291	µg/l					
	AA-$QS_{BalticSea}$	0,0291	µg/l					
	MAC-QS	210	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$	21	µg/l					
	QS_{biota}	0,711	mg/kg food		QS_{water}	5,51	µg/l	Value above AA-QS
					$QS_{BalticSea}$	5,51	µg/l	Value above AA-QS
	overall EQS	0,291	µg/l					
	overall $EQS_{BalticSea}$	0,0291	µg/l					
	$QS_{sediment}$	0,021	mg/l	QSsed	15,25	mg/kg org C		

Compound	**Methiocarb**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 0.7-1.5 d, median 1.35 d (20°C, 40% WHC)				
	hydrolytic, in water		DT50: pH5 321 d, pH7 24 d, pH9 0.21 d				
	in water		DT50 7.9-9.1 d; Results from non-radiolabelled study, applied as pellet				
	in sediment		DT50 20.1 d				
	in water/sediment system		DT50 15.3 d; Results from non-radiolabelled study, applied as pellet				
	distribution		Max. in sediment 18.6% at d 28				
	comments						
Adsorption	K_{OW}						
	LOG(K_{OW})		3.11 (pH 4), 3.18 (pH 7) at 20 °C				
	K_{OC}		408-1000				
	LOG(Koc)		3,00	max			
	dependent on pH?		No				
Analysis	LOQ in water		HPLC/MS/MS 0.1 µg/l				
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 0.5 mg/kg bw/d = NOEC 6.25 mg/kg food				
	mammals/birds, acute		Japanese quail LD50 5 mg/kg bw; rat LD50: 19 mg a.s./kg bw (highly toxic)				
	aquatic organisms, chronic	fish	O. mykiss 56 d NOEC 0.05 mg/l				
			BCF	90			
		Daphnia	D. magna 21 d NOEC 0.0001 mg/l				
		algae	S. subspicatus 72 h NOEbC 0.052 mg/l				
		plants					
		other, if tested					
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 0.65 mg/l				
		Daphnia	D. magna 48 h EC50 0.0077 mg/l				
		algae	S. subspicatus 72 h ErC50 2.2 mg/l				
		plants					
		other, if tested					
	ADI	0.013	mg/kg bw/day				
Calculated EQS values	$AA\text{-}QS_{water}$	0,01	µg/l				
	$AA\text{-}QS_{BalticSea}$	0,0010	µg/l				
	MAC-QS	0,770	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,0700	µg/l				
	QS_{biota}	0,2083	mg/kg food		$AA\text{-}QS_{water}$	2,31 µg/l	Value above AA-QS
					$QS_{BalticSea}$	2,31 µg/l	Value above AA-QS
	overall EQS	0,01	µg/l				
	overall $EQS_{BalticSea}$	0,0010	µg/l				
	$QS_{sediment}$	Data not available					

Compound	**Metribuzin**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 5.3–17.7 d, mean 12.3 d (20 °C)	
	hydrolytic, in water			pH 4-9: stable	
	in water			DT50 31-53 d, mean 41.4 d	
	in sediment				
	in water/sediment system			DT50 47-50 d	
	distribution			Max. in sediment 26.3 % at d 100	
	comments				
Adsorption	LOG(K_{OW})			1.6 at 20 °C (unbuffered and pH 4–9)	
	K_{OC}			3.14-81.5	
	LOG(Koc)			1,91 max	
	dependent on pH?			No	
Analysis	LOQ in water			HPLC-UV 0.05 µg/l; GC/MS 0.02 µg/l*	
Toxicity	mammals/birds, chronic			Rat repr. NOAEL 2.2 mg/kg bw/d = NOEC 18.33 mg/kg food	
	mammals/birds, acute			Bird LD50 164 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 95 d NOEC 4.4 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 0.32 mg/l	
		algae		S. subspicatus 72 h NOErC 0.0018 mg/l	
		plants		L. minor 14 d NOEC 0.00058 mg/l	
		other, if tested		Microcosm NOECphytoplankton of 5.6 µg/L	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 74.6 mg/l	
		Daphnia		D. magna 48 h EC50 49.0 mg/l	
		algae		S. subspicatus 72 h ErC50 0.02 mg/l	
		plants		L. minor 14 d EC50 0.0133 mg/l	
		other, if tested		Aquatic microflora 3 h EC50 761 mg/l	
	ADI		0.013	mg/kg bw	
Calculated EQS values	AA-QS_{water}		0,058	µg/l	
	AA-$QS_{BalticSea}$		0,0058	µg/l	
	MAC-QS		1,33	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,133	µg/l	
	QS_{biota}	LogKow < 3			
	overall EQS		0,058	µg/l	
	overall $EQS_{BalticSea}$		0,0058	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Metsulfuron-methyl**	data source		EC review report and DAR
Degradation	in soil			DT50 23-29 d (22°C); DT50 20-51 d (25°C)
	hydrolytic, in water			DT50: pH 5 22 d; pH 7-9 stable (25° C)
	in water			DT50 81-148 d
	in sediment			
	in water/sediment system			DT50 105-175 d
	distribution			Max. in sediment 22 % at d 14
	comments			
Adsorption	LOG(K_{OW})			pH 7: -1.7 at 25°C
	K_{OC}			4-60 (mean 39.5)
	LOG(Koc)			1,78 max
	dependent on pH?			No
Analysis	LOQ in water			LC/MS 0.02 µg/l*
Toxicity	mammals/birds, chronic			Rat 90 d NOEC 1000 mg/kg food (NOAEL 68 mg/kg bw/d)
	mammals/birds, acute			Mallard duck LD50 > 2 510 mg/kg
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 68 mg/l
				BCF –
		Daphnia		D. magna 21 d NOEC 150 mg/l
		algae		S. capricornutum 120 h NOEC 0.01 mg/l
		plants		L. minor 14 d NOEC 0.00016 mg/l
		other, if tested		
	aquatic organisms, acute	fish		L. macrochirus 96 h LC50 >150 mg/l
		Daphnia		D. magna 48 h EC50 >150 mg/l
		algae		S. capricornutum 120 h EbC50 > 0.045 mg/l
		plants		L. minor 14 d EC50 0.00036 mg/l
		other, if tested		
	ADI		0.22	mg/kg bw/d
Calculated EQS values	AA-QS_{water}		16	ng/l
	AA-$QS_{BalticSea}$		1,6	ng/l
	MAC-QS		36	ng/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		3,6	ng/l
	QS_{biota}	LogKow <3		
	overall EQS		16	ng/l
	overall $EQS_{BalticSea}$		1,6	ng/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Paraffin oil** (CAS 8042-47-5)	data source	EFSA conclusion report and LoEP
Degradation	in soil		DT50 43 d and 87 d (20°C); DT50 191.4 d (10°C)
	hydrolytic, in water		No data available
	in water		DT50 0.6-3.6 d (microcosm study); no experimental data in the dossier
	in sediment		No data available
	in water/sediment system		No data available
	distribution		No data available
	comments		Accumulation in sed. unlikely, due to rapid degradation in water and since Paraffinic oil is lighter than water
Adsorption	LOG(K_{OW})		Practically not soluble in water
	K_{OC}		No data available
	LOG(Koc)		–
	dependent on pH?		
Analysis	LOQ in water		No method was submitted
Toxicity			Due to chemical inertia no interaction with other compounds expected; used as a laxative
			Promanal Neu, 546 g/l, W. Neudorff GmbH KG
			Para Sommer (654 g/l, Stähler International GmbH&Co KG)
			The lowest values obtained with the product studies used in EQS setting and presented below:
	mammals/birds, chronic		Limited animal data indicating low subchronic and chronic toxicity
	mammals/birds, acute		Low acute oral toxicity
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 7.5 mg/l
			BCF –
		Daphnia	D. magna 21 d NOEC 5.16 µg/l (m)
		algae	D. subspicatus 72 h NOEC 39.92 µg/l (m)
		plants	
		other, if tested	Microcosm: NOEC 98 µg/l (effects on Corixidae and Phyllopoda at 310 µg/l)
	aquatic organisms, acute	fish	L. idus 96 h NOEC 40.5 mg/l (m)
		Daphnia	D. magna 48 h EC50 0.144 mg/l (nom)
		algae	S. subspicatus 72 h ErC50 > 3270 mg/l
		plants	
		other, if tested	
	ADI		
Calculated EQS values	$AA\text{-}QS_{water}$	0,516 µg/l	
	$AA\text{-}QS_{BalticSea}$	0,0516 µg/l	
	MAC-QS	14,4 µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	1,44 µg/l	
	QS_{biota}	Low toxicity to animals	
	overall EQS	0,516 µg/l	
	overall $EQS_{BalticSea}$	0,0516 µg/l	
	$QS_{sediment}$	Not found in sediment > 10 %	

Compound	**Penconazole**	data source	EFSA review report and DAR					
Degradation	in soil		DT50 55.3-163 d(20 °C/pF2)					
	hydrolytic, in water		pH 5-9: stable (25 °C)					
	in water		DT50 2.7 d					
	in sediment		DT50 ~600 d					
	in water/sediment system		DT50 ~600 d					
	distribution		Max. in sediment 92.7 % at d 56					
	comments							
Adsorption	LOG(K_{OW})		3.72 (25 °C)					
	K_{OC}		998-4120					
	LOG(Koc)		3,61	max				
	dependent on pH?		No					
Analysis	LOQ in water / soil		GC/MSD 0.05 µg/l; LC/MS 0.1 µg/l* / LC-MS/MS 0.01 mg/kg; LC/MS 0.01 mg/kg					
Toxicity	mammals/birds, chronic		Dog 90 d and long term and carc. NOAEL 3 mg/kg bw/d = NOEC 120 mg/kg food					
	mammals/birds, acute		Rabbit LD50 971 mg/kg bw					
	aquatic organisms, chronic	fish	P. promelas 30 d NOEC 320 µg/l (mm)					
			BCF	320				
		Daphnia	D. magna 21 d NOEC 60 µg/l (mm)					
		algae	S. capricornutum 72 h NOEC ¨560 µg/l					
		plants	L. gibba 14 d NOEC 96 µg/l (nom)					
		other, if tested	C. riparius 28 d NOEC 800 µg/l (mm), 25.2 mg/kg sediment (nom)					
							L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1130 µg/l (mm)				1,13	0,05
		Daphnia	D. magna 48 h EC50 6750 µg/l (nom)				6,75	0,83
		algae	S. capricornutum 72 h ErC50 4900 µg/l				4,90	0,69
		plants	L. gibba 14 d EC50 190 µg/l (nom)				0,19	-0,72
		other, if tested				SD (LogL/EC50)	0,71	>0,5
	ADI	0.03	mg/kg bw/d					
Calculated EQS values	$AA\text{-}QS_{water}$	6	µg/l					
	$AA\text{-}QS_{BalticSea}$	0,6	µg/l					
	MAC-QS	1,9	µg/l	Value set to AA-QS				
	$MAC\text{-}QS_{BalticSea}$	0,19	µg/l	Value set to AA-QSBalticSea				
	QS_{biota}	1,333	mg/kg food		QS_{water}	4,2 µg/l		
					$QS_{BalticSea}$	4,2 µg/l	Value above AA-QS	
	overall EQS	4,2	µg/l	based on QSbiota				
	overall $EQS_{BalticSea}$	0,6	µg/l					
	$QS_{sediment}$	8	µg/l					
		0,25	mg/kg sediment		QSsed			

Compound	**Pendimethalin**	data source	EC review report and DAR					
Degradation	in soil		DT50 72-172 d (20 °C); DT50 409 d (10 °C)					
	hydrolytic, in water		pH 4-9: stable					
	in water		Very rapid binding to the sediment					
	in sediment							
	in water/sediment system		DT50 4-28 d (n=4)					
	distribution		Max. in sediment 84% at d 0					
	comments							
Adsorption	LOG(K_{OW})		5.2 (pH 7)					
	K_{OC}		6700 – 29400					
	LOG(Koc)		4,47	max				
	dependent on pH?		No					
Analysis	LOQ in water		SPE and GC 0.1 µg/l; GC/MS 0.02 µg/l*					
Toxicity	mammals/birds, chronic		Mallard duck repr. NOEC 141 mg/kg food					
	mammals/birds, acute		Mallard duck LD50 1421 mg/kg bw					
	aquatic organisms, chronic	fish	P. promelas 288 d FLC NOEC 0.006 mg/l					
			BCF	5100				
		Daphnia	D. magna 21 d NOEC 0.0145 mg/l					
		algae	S. capricornutum120 h NOEC 0.003 mg/l					
		plants	L. gibba 14 d NOEC 0.006 mg/l					
		other, if tested	Mesocosm NOEC 0.00023 mg/l (based on algae and chl-a)					
			C. riparius 30 d NOEC 0.138 mg/l (initial m., not very reliable)					
							L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.138 mg/l				0,138	-0,86
		Daphnia	D. magna 48 h EC50 0.28 mg/l				0,28	-0,55
		algae	S. capricornotum 120 h EC50 0.006 mg/l				0,006	-2,22
		plants	L. gibba 14 d EC50 0.0125 mg/l				0,0125	-1,90
		other, if tested				SD (LogL/EC50)	0,80	>0,5
	ADI	0.125	mg/kg bw/day					
Calculated EQS values	AA-QS_{water}	0,046	µg/l	AF is 5, since mesocosm study was used				
	AA-$QS_{BalticSea}$	0,0046	µg/l					
	MAC-QS	0,06	µg/l					
	MAC-$QS_{BalticSea}$	0,006	µg/l					
	QS_{biota}	4,7	mg/kg food		QS_{water}	92,2 ng/l	Value above AA-QS	
					$QS_{BalticSea}$	9,2 ng/l	Value above AA-QS	
	overall EQS	0,046	µg/l					
	overall $EQS_{BalticSea}$	0,0046	µg/l					
	$QS_{sediment}$	1,38	µg/l	QSsed	9,25	mg/kg orgC		

Compound	**Phenmedipham**	data source	EC review report and DAR			
Degradation	in soil		20°C: DT50 26-43 d; 10°C DT50: 27 d			
	hydrolytic, in water		DT50: pH4 259 d; pH 5 47 d; pH 7 12 h; pH 9 7 min			
	in water		DT50 0.1-0.3 days			
	in sediment					
	in water/sediment system		DT50 0.11-0.18 days			
	distribution		Due to rapid degradation of PMP no accumulation is expected			
	comments		Degradation < 2 d in water and sediment; therefore no AA-QS values were derived.			
	metabolites		MHPC: less toxic than parent			
Adsorption	LOG(K_{OW})		3.59 at 22 °C and pH 4			
	K_{OC}		657-1072			
	LOG(Koc)		3,03 max			
	dependent on pH?		Yes, hydrolysis directly affects the adsorption			
Analysis	LOQ in water		HPLC- MS/MS 0.01 µg/l			
Toxicity	mammals/birds, chronic		Rat long term and carc. NOEC 60 mg/kg food (NOAEL 3 mg/kg bw/day)			
	mammals/birds, acute		Mallard duck and Japanese quail LD50 > 2500 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.32 mg/l			
			BCF 165			
		Daphnia	D. magna 21 d NOEC 0.061 mg/			
		algae	N. palea 72 h NOErC 0.62mg/l (im)			
		plants	L. minor 14 d NOEC 0.028 mg/l			
		other, if tested	C. riparius 28 d NOEC 0.37 mg/l			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1.71 mg/l		1,71	0,23
		Daphnia	D. magna 48 h EC50 0.41 mg/l		0,41	-0,39
		algae	N. palea 72 h ErC50 0.89 mg/l (im)		0,89	-0,05
		plants	L. minor 14 d EbC50 0.23 mg/l		0,23	-0,64
		other, if tested		SD (LogL/EC50)		0,38 <0.5
	ADI	0.03	mg/kg bw/day			
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 days				
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 days				
	MAC-QS	23,0	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	$MAC\text{-}QS_{BalticSea}$	2,3	µg/l			
	QS_{biota}	DT50 < 2 days				
	$QS_{sediment}$	DT50 < 2 days				

Compound	**Picoxystrobin**	data source	EC review report, DAR and LoEP				
Degradation	in soil		DT50 19-33 d; 10 °C, extrapolation: DT50 53 d				
	hydrolytic, in water		pH 4-9: stable				
	in water		DT50 7.5-10.5 d				
	in sediment						
	in water/sediment system		DT50 44.5-67.4 d				
	distribution		Max. in sediment 58 %				
	comments						
Adsorption	LOG(K_{OW})		3.6 (20°C)				
	K_{OC}		750-1200				
	LOG(Koc)		3,08	max			
	dependent on pH?						
Analysis	LOQ in water / soil		GC-MSD 0.1µg/l; LC/MS 0.02 µg/l* / GC/MSD 0.001 mg/kg in sediment				
Toxicity	mammals/birds, chronic		Dog 90 d and long term and carc. NOAEL 4.3 mg/kg bw/d = NOEC 172 mg/kg food				
	mammals/birds, acute		Bobwhite Quail LD50 > 2250 mg/kg				
	aquatic organisms, chronic	fish	O. mykiss 28d NOEC 10 µg/l				
			BCF	290			
		Daphnia	D. magna 21 d NOEC 8 µg/l				
		algae	S. capricornutum 72 h NOEC 8.8 µg/l				
		plants					
		other, if tested	C. riparius 25 d NOEC 62.5 µg/l; 28 d NOEC 5 mg/kg sediment				
			Microcosm: NOEC 6.4 µg/l				
	aquatic organisms, acute	fish	P. promelas 96 h LC50 65 µg/l			SD (LogL/EC50) from all acute data 0.62 > 0.5	
		Daphnia	D. magna 48 h EC50 18 µg/l				
		algae	S. capricornutum ErC50 260 µg/l				
		plants					
		other, if tested	Many species tested; lowest Diaptomus 5 µg/l				
	ADI	0.043	mg/kg bw/d				
Calculated EQS values	AA-QS_{water}	1,28	µg/l	AF is 5, since mesocosm study was used			
	AA-$QS_{BalticSea}$	0,128	µg/l				
	MAC-QS	0,1	µg/l	Value set to AA-QS			
	MAC-$QS_{BalticSea}$	0,01	µg/l	Value set to AA-QSBalticSea			
	QS_{biota}	1,911	mg/kg food		QS_{water}	6,6 µg/l	Value above AA-QS
					$QS_{BalticSea}$	0,66 µg/l	Value above AA-QS
	overall EQS	1,28	µg/l				
	overall EQSBalticSea	0,128	µg/l				
	$QS_{sediment}$	0,05	mg/kg sediment	QSsed			

Compound	**Propamocarb hydrochloride**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 10.9-137 d, mean 39.3 d (n=9; 20°C:); DT50 25.3-73.7 d, mean 48.7 d (n=3; 10°C)			
	hydrolytic, in water		pH 4-9: stable (25 °C)			
	in water		DT50 10-15 d			
	in sediment		DT50 23-26 d			
	in water/sediment system		DT50 16-21 d			
	distribution		Max. in sediment 36.9 % at d 14			
	comments					
Adsorption	LOG(K_{OW})		pH 2: -0.98 and -2,9; pH 7: -1.2 and -1.4; pH 9: 0.32 and 0.67			
	K_{OC}		41-2451			
	LOG(Koc)		3,39 max			
	dependent on pH?		No; possibly dependant on clay content			
Analysis	LOQ in water		MS/MS 0.05 µg/l			
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 3 mg/kg bw/d = NOEC258.23 mg/kg food			
	mammals/birds, acute		Mammal LD50 > 1330 mg/kg bw/d			
	aquatic organisms, chronic	fish	P. promelas 33 d ELS NOEC > 6.3 mg/l			
			BCF –			
		Daphnia	D. magna 21 d NOEC 12.3 mg/l			
		algae	P. subcapitata 96 h NOEC 13 mg/l			
		plants	L. gibba 14 d NOEC > 18 mg/l			
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 >92 mg/l	92,0	1,96	
		Daphnia	D. magna 48 h EC50 >100 mg/l	100,0	2,00	
		algae	P. subcapitata 96 h ErC50 84 mg/l	84,0	1,92	
		plants	L. gibba 14 d EC50 (fronds) > 18 mg/l	18,0	1,26	
		other, if tested	SD (LogL/EC50)		0,36	<0.5
	ADI	0.29	mg/kg bw/d			
Calculated EQS values	AA-QS_{water}	0,63	mg/l			
	AA-$QS_{BalticSea}$	0,063	mg/l			
	MAC-QS	1,80	mg/l AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$	0,18	mg/l			
	QS_{biota}	LogKow <3				
	overall EQS	0,63	mg/l			
	overall EQSBalticSea	0,063	mg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Propaquizafop**		EFSA conclusion report and DAR			
Degradation	in soil		DT50 0.09-<3 d, g-mean 1.3 d			
	hydrolytic, in water		DT50: pH 5 10.5 d ; pH 7 32 d; pH 9 DT50 0.54 d (25°C)			
	in water		DT50 < 1 d			
	in sediment		DT50 < 1 d			
	in water/sediment system		DT50 < 1 d			
	distribution					
	comments		Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.			
	metabolites		Quizalofop P i.e. quizalofop acid 71.3-87.9 % in soil d 1-3			
Adsorption	LOG(K_{OW})		4.78 at 25 °C (pH 7)			
	K_{OC}		2220 (estimated based on logKow)			
	LOG(Koc)		3,35 mean			
	dependent on pH?					
Analysis	LOQ in water		LC/MS 0.05 µg/l*			
Toxicity	mammals/birds, chronic		Mouse long-term and carc. NOAEL 1.5 mg/kg bw/d = NOEC 12.5 mg/kg food			
	mammals/birds, acute		Bobwhite quail LD50 > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	O.mykiss 28 d NOEC 0.019 mg/l			
			BCF 583			
		Daphnia	D. magna 21 d NOEC 0.44 mg/l			
		algae	P. subcapitata 72 h NOEC 2.1 mg/l			
		plants	L. gibba 7 d NOEC 1.4 mg/l			
		other, if tested				
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	C. carpio 96 h LC50 0.19 mg/l		0,19	-0,72
		Daphnia	D. magna 48 h EC50 > 0.9 mg/l		0,9	-0,05
		algae	P. subcapitata 72 h ErC50 > 2.1 mg/l		2,10	0,32
		plants	L. gibba 7 d EC50 > 1.4 mg/l		1,40	0,15
		other, if tested		SD (LogL/EC50)		0,46 <0.5
	ADI	0.015	mg/kg bw/day			
Calculated EQS values	AA-QS_{water}	DT50 < 2d				
	AA-$QS_{BalticSea}$	DT50 < 2d				
	MAC-QS	90	µg/l			
	MAC-$QS_{BalticSea}$	9	µg/l			
	QS_{biota}	DT50 < 2d				
	$QS_{sediment}$	DT50 < 2d				

Compound	**Quizalofop-P-ethyl**			EFSA conclusion report and DAR
Degradation	in soil			DT50 0.4 d
	hydrolytic, in water			pH 4 stable; pH 7 DT50 ~60 d (25°C); pH 9 DT50 <2.4 h (50°C)
	in water			DT50 1.55 d
	in sediment			DT50 1.10 d
	in water/sediment system			DT50 1.51 d
	distribution			Max. in sediment 29 % at d 0
	comments			Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.
	metabolites			Quizalofop P i.e. quizalofop acid in soil 67.0-83.8 % d 1-7
Adsorption	LOG(K_{OW})			4.61 at 23 °C
	K_{OC}			1024-3078
	LOG(Koc)			3,49 max
	dependent on pH?			
Analysis	LOQ in water			LC-MS/MS 0.05 µg/l
Toxicity	mammals/birds, chronic			Mouse 90-d NOAEL 1.7 mg/kg bw/d = NOEC 14.11 mg/kg food
	mammals/birds, acute			Rat (females) LD50 1182 mg/kg bw
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 0.044 mg/l (mm)
				BCF 380
		Daphnia		D. magna 21 d NOEC 0.023 mg/l (mm)
		algae		
		plants		
		other, if tested		
	aquatic organisms, acute	fish		L. macrochirus 96 h LC50 0.21 mg/l (mm)
		Daphnia		D. magna 48 h EC50 0.29 mg/l (mm)
		algae		P. subcapitata 72 h ErC50 0.069 mg/l (mm)
		plants		L. gibba 7 d EC50 (fronds) 0.098 mg/l (nom)
		other, if tested		
	ADI		0.009	mg/kg bw/day
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2d		
	$AA\text{-}QS_{BalticSea}$	DT50 < 2d		
	MAC-QS		0,69	µg/l
	$MAC\text{-}QS_{BalticSea}$		0,069	µg/l
	QS_{biota}	DT50 < 2d		
	$QS_{sediment}$	DT50 < 2d		

Compound	Quizalofop-P i.e. quizalofop acid (active substance)					
Degradation	in soil		DT50 23.7-181.5 d			
	hydrolytic, in water		pH 4-9 (22 °C): stable			
	in water		DT50 10-62 d, g-mean 21 d			
	in sediment		DT50 47-61 d, g-mean DT50 54 d			
	in water/sediment system		DT50 25-54 d, g-mean 35 d			
	distribution		Max. in sediment 45.4 % AR after 28 d			
	comments					
Adsorption	LOG(K_{OW})		–			
	K_{OC}		347-472			
	LOG(Koc)		2,67 max			
	dependent on pH?					
Analysis	LOQ in water		HPLC-UV 0.1 µg/l			
Toxicity	mammals/birds, chronic		Not tested			
	mammals/birds, acute		Not tested			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 46.2 mg/l (mm)			
			BCF –			
		Daphnia	D. magna 21 d NOEC 0.82 mg/l (mm)			
		algae	P. subcapitata NOErC 6.83 mg/l			
		plants	G. fluitans NOEC 0.094 mg/l			
		other, if tested	C. riparius 28 d NOEC 35.7 mg/l (nom)			
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >100 mg/l (nom)			
		Daphnia	D. magna 48 h EC50 57.7 mg/l (mm)			
		algae	P. subcapitata 72 h ErC50 >72.5 mg/l (mm)			
		plants	G. fluitans 14 d EC50 (fronds) >0.190 mg/l			
		other, if tested				
	ADI					
Calculated EQS values	AA-QS_{water}		9,4	µg/l		
	AA-$QS_{BalticSea}$		0,94	µg/l		
	MAC-QS		19	µg/l	AF is 10, since the range in toxicity > 100 X	
	MAC-$QS_{BalticSea}$		1,9	µg/l		
	QS_{biota}	No data available				
	overall EQS		9,4	µg/l		
	overall $EQS_{BalticSea}$		0,94	µg/l		
	$QS_{sediment}$		0,357	mg/l	124 mg/kg orgC	QSsed

Compound	**Propiconazole**	data source	EC review report, DAR and LoEP
Degradation	in soil		DT50 29-70 d (20-25°C); DT50 430 d (10°C)
	hydrolytic, in water		pH 1-13 (70°C): stable
	in water		DT50 ~5 d
	in sediment		–
	in water/sediment system		DT50 485-636 d
	distribution		Max. in sediment 87.5 % at d 175
	comments		
Adsorption	LOG(K_{OW})		3.72 at 25 °C and pH 6.6
	K_{OC}		382 – 1789 (9 soils)
	LOG(Koc)		3,25 max
	dependent on pH?		No
Analysis	LOQ in water / soil		GC-ECD 0.1 µg/l; LC/MS 0.02 µg/l* / GC-NPD 0.04 mg/kg
Toxicity	mammals/birds, chronic		Mouse 120 d NOEC 20 mg/kg food (NOAEL 2.7 mg/kg bw/d)
	mammals/birds, acute		Rat LD50 ~1500 mg/kg bw
	aquatic organisms, chronic	fish	C. variegatus 100 d NOEC 0.068 mg/l
			BCF 116
		Daphnia	D. magna 21 d NOEC 0.31 mg/l
		algae	S. costatum 11 d EC10 <0.018 mg/l
		plants	
		other, if tested	C. riparius 28 d NOEC 4.0 mg/l ; 25 mg/kg sediment
	aquatic organisms, acute	fish	L. xanthurus 96 h LC50 2.6 mg/l; O. mykiss 4.3 mg/l
		Daphnia	D. magna 48 h EC50 10.2 mg/l
		algae	S. costatum 11 d EC50 0.021 mg/l
		plants	
		other, if tested	M. bahia 96 h LC50 0.51 mg/l
			C. virginica 96 h EC50 1.7 mg/l
	ADI	0.04	mg/kg bw/day
Calculated EQS values	$AA\text{-}QS_{water}$	1,8	µg/l
	$AA\text{-}QS_{BalticSea}$	0,18	µg/l
	MAC-QS	2,10	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	0,42	µg/l AF is 50, since an additional marine species (oyster) was tested
	QS_{biota}	0,222	mg/kg food QS_{water} 1,91 µg/l Value above AA-QS
			$QS_{BalticSea}$ 1,91 µg/l Value above AA-QS
	overall EQS	1,8	µg/l
	overall $EQS_{BalticSea}$	0,180	µg/l
	$QS_{sediment}$	0,25	mg/kg sediment QSsed

Compound	**Propoxycarbazone sodium**	data source	EC review report and DAR
Degradation	in soil		DT50 22.8–98.8 (n=8; 20 °C), DT50 50.2–217.4 d (10°C)
	hydrolytic, in water		pH 4-9: stable (25°C)
	in water		DT50 10.6-90.8 d
	in sediment		
	in water/sediment system		DT50 12.0-189.0 d
	distribution		Max. in sediment 21.4 % at d 100
	comments		
Adsorption	LOG(K_{OW})		pH 9: -1.59, pH 7: -1.55, pH 4: -0.30
	K_{OC}		12.9-106.2 (n = 5)
	LOG(Koc)		2,03 max
	dependent on pH?		No
Analysis	LOQ in water		HPLC-UV 1.0 µg/l; GC/MS 0.01 µg/l*
Toxicity	mammals/birds, chronic		Rat long-term and carc. NOEC 1000 mg/kg food (NOAEL 43 mg/kg bw/d)
	mammals/birds, acute		Bobwhite quail bird LD50 > 2000 mg/kg bw
	aquatic organisms, chronic	fish	P. promelas 35 d NOEC 105 mg/l
			BCF –
		Daphnia	D. magna 21 d NOEC 110 mg/l
		algae	S. capricornutum 96 h NOErC 0.53 mg/l
		plants	L. gibba 14 d LOErC 0.0088 mg/l = NOErC < 0.0088 mg/l
		other, if tested	
	aquatic organisms, acute	fish	O. mykiss 96b h LC50 >77.6 mg/l
		Daphnia	D. magna 48 h EC50 >107 mg/l
		algae	S. capricornutum ErC50 7.36 mg/l
		plants	L. gibba 14 d ErC50 0.0128 mg/l
		other, if tested	
	ADI	0.4	mg/kg bw
Calculated EQS values	$AA\text{-}QS_{water}$	0,88	µg/l
	$AA\text{-}QS_{BalticSea}$	0,088	µg/l
	MAC-QS	1,280	µg/l AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	0,128	µg/l
	QS_{biota}	LogKow <3	
	overall EQS	0,88	µg/l
	overall $EQS_{BalticSea}$	0,088	µg/l
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l	

Compound	**Prosulfocarb**	data source	EFSA conclusion report, final addendum and DAR						
Degradation	in soil		Lab. DT50 15.6 d; field DT50 10.1 d						
	hydrolytic, in water		pH 5-9: stable at 25°C (31 d)						
	in water		DT50 1.1 d						
	in sediment		–						
	in water/sediment system		DT50 264 d						
	distribution		–						
	comments								
Adsorption	LOG(K_{OW})		4.48 at pH 7.5 (30 °C); not pH dependant						
	K_{OC}		1367-2339						
	LOG(Koc)		3,37	max					
	dependent on pH?		No						
Analysis	LOQ in water		GC-MSD 0.1 µg/l; GC/MS 0.01 µg/l*						
Toxicity	mammals/birds, chronic		Rat repr. (parent) NOAEL 0.5 mg/kg bw/day = NOEC 6.25 mg/kg food						
	mammals/birds, acute		Rat LD50 1889 mg/kg bw						
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.31 mg/l (mm)						
			BCF	700					
		Daphnia	D. magna 21 d NOEC 0.045 mg/l						
		algae	P. subcapitata 72 h NOEC 0.009 mg/l (mm)						
		plants	L. gibba 14 d NOEC 0.079 mg/l						
		other, if tested	C. riparius 25 d NOEC 1.25 mg/l (nom)						
			Mesocosm NOEC 3 µg/l						
	aquatic organisms, acute	fish	O. mykiss 96 h EC50 0.84 mg/l (nom)					L/EC50	logL/EC50
		Daphnia	D. magna 48 h EC50 0.51 mg/l (mm)					0,84	-0,08
		algae	P. subcapitata 72 h ErC50 0.120 mg/l (mm)					0,51	-0,29
		plants	L. gibba 14 d EC50 (fronds) 0.69 mg/l (mm)					0,12	-0,92
		other, if tested						0,69	-0,16
							SD (LogL/EC50)	0,38	<0.5
	ADI	0.005	mg/kg bw/day						
Calculated EQS values	AA-QS_{water}	0,6	µg/l	AF is 5, since mesocosm study was used					
	AA-$QS_{BalticSea}$	0,06	µg/l						
	MAC-QS	12	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5					
	MAC-$QS_{BalticSea}$	1,2	µg/l						
	QS_{biota}	0,208	mg/kg food		QS_{water}	0,30	µg/l	Value set to AA-QS	
					$QS_{BalticSea}$	0,30	µg/l		
	overall EQS	0,3	µg/l	based on QSbiota					
	overall $EQS_{BalticSea}$	0,06	µg/l						
	$QS_{sediment}$	12,5	µg/l	QSsed	17,1	mg/kg orgC			

Compound	**Prothioconazole**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 0.07-1.27 d; median DT50 1.1 d (10°C)			
	hydrolytic, in water		pH 4-9: stable (25°C)			
	in water		DT50 0.8-1.0 days			
	in sediment					
	in water/sediment system		DT50 2.8-1.6 days			
	distribution		Max in sediment ~20 % at d 1			
	comments		Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.			
	metabolites		Soil: M01, M04			
			Water/sed systems: M04			
Adsorption	LOG(K_{OW})		pH 4: 4.16, pH 7: 3.82, pH: 9 2.00 (20°C)			
	K_{OC}		1765 (one soil tested)			
	LOG(Koc)		3,25			
	dependent on pH?		No information			
Analysis	LOQ in water		HPLC-MS/MS 0.1 µg/l			
Toxicity	mammals/birds, chronic		Rat repr. NOAEL (parental) 9.7 mg/kg bw/d = NOEC 121.3 mg/kg food			
	mammals/birds, acute		Bird LD50 > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 97 d ELS NOEC 0.308 mg/l			
			BCF 19,7			
		Daphnia	D. magna 21 d NOEC 0.56 mg/l			
		algae	P. subcapitata 96 h NOEC <0.371 mg/l			
		plants				
		other, if tested	C. riparius 28 d NOEC 9.14 mg/l			
					L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1.83 mg/l		1,83	0,26
		Daphnia	D. magna 48 h EC50 1.3 mg/l		1,3	0,11
		algae	P. subcapitata 96 h ErC50 2.18 mg/l		2,18	0,34
		plants		SD (LogL/EC50)		0,11 <0.5
		other, if tested				
	ADI	0.05	mg/kg bw/d			
Calculated EQS values	AA-QS_{water}	DT50 < 2 d				
	AA-$QS_{BalticSea}$	DT50 < 2 d				
	MAC-QS	130	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$	13	µg/l			
	QS_{biota}	DT50 < 2 d				
	$QS_{sediment}$	DT50 < 2 d				

Compound	Prothioconazole-S-methyl (M01)	data source	EFSA conclusion report and DAR				
	Formation		Aerobic soil: max. 14.6 % d 7				
	Degradation		DT50 soil 5.9-46.0 d; median: 17.7 d				
Adsorption	LOG(K_{OW})		–				
	K_{OC}		1974-2995 (n = 4)				
	LOG(Koc)		3,48	max			
	dependent on pH?		No				
Toxicity	mammals/birds, chronic		No data				
	mammals/birds, acute		No data				
Analysis	LOQ in water		Not determined				
	aquatic organisms, chronic	fish					
		Daphnia					
		algae	P. subcapitata 72 h NOEC <1.03 mg/l				
		plants					
		other, if tested					
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 1.8 mg/l			1,8	0,26
		Daphnia	D. magna 48 h EC50 2.8 mg/l			2,8	0,45
		algae	P. subcapitata 72 h ErC50 47.4 mg/l			47,4	1,68
		plants		SD (LogL/EC50)			0,77 >0.5
		other, if tested					
	ADI						
Calculated EQS values	AA-QS_{water}		1,8 µg/l				
	AA-$QS_{BalticSea}$		0,18 µg/l				
	MAC-QS		18 µg/l				
	MAC-$QS_{BalticSea}$		1,8 µg/l				
	QS_{biota}	No data					
	overall EQS		1,8 µg/l				
	overall $EQS_{BalticSea}$		0,18 µg/l				
	$QS_{sediment}$	No data					

Compound	Prothioconazole-desthio (M04)	data source							
	Formation		~40-50% in soil and water						
	Degradation		DT50 soil 7-34 d; median: 24.1 d						
			Distribution in sediment max. 26.9%						
Adsorption	K_{OC}		523-625 (n = 4)						
	LOG(Koc)		2,80	max					
	dependent on pH?		No						
Analysis	LOQ in water		HPLC-MS/MS 0.05 µg/l						
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 1.1 mg/kg bw /day = NOEC 22 mg/kg food						
	mammals/birds, acute		Bird LD50 > 2000 mg/kg bw						
	aquatic organisms, chronic	fish	O. mykiss 96 d ELS NOEC 3.34 µg/l						
			BCF	65					
		Daphnia	D. magna 21 d NOEC 0.10 mg/l						
		algae	S. subspicatus 96 h NOEC 0.052 mg/l						
		plants							
		other, if tested	C. riparius NOEC 2.0 mg/l						
								L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 6.63 mg/l					6,63	0,82
		Daphnia	D. magna 48 h EC50 >10 mg/l					10	1,00
		algae	S. subspicatus 96 h ErC50 0.55 mg/l					0,55	-0,26
		plants					SD (LogL/EC50)		0,68 >0.5
		other, if tested							
	ADI	0.01	mg/kg bw/d						
Calculated EQS values	$AA\text{-}QS_{water}$	0,334	µg/l						
	$AA\text{-}QS_{BalticSea}$	0,033	µg/l						
	MAC-QS	5,50	µg/l						
	$MAC\text{-}QS_{BalticSea}$	0,55	µg/l						
	QS_{biota}	0,733	mg/kg food		QS_{water}	10,9	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	10,9	µg/l	Value above AA-QS	
	overall EQS	0,334	µg/l						
	$overall\ EQS_{BalticSea}$	0,033	µg/l						
	$QS_{sediment}$	20	µg/l	QSsed	10,46	mg/kg org C			

Compound	**Pyraclostrobin**	data source	EC review report and DAR				
Degradation	in soil		DT50 12-101 d (20°C); DT50 > 120 d (5°C)				
	hydrolytic, in water		pH 5-9: stable (25°C)				
	in water		DT50 1-8.7 d				
	in sediment		–				
	in water/sediment system		DT50 27-29 d				
	distribution		Max. in sediment max 62 % at d 2				
	comments						
Adsorption	LOG(K_{OW})		3.99 (20 °C)				
	K_{OC}		6000 – 16000 (no average; high variance)				
	LOG(Koc)		4,20 max				
	dependent on pH?		No				
Analysis	LOQ in water		LC/MS-MS 0.05 µg/L; LC/MS 0.01 µg/l*				
Toxicity	mammals/birds, chronic		Mouse 90-day NOAEL 4 mg/kg bw/d = NOEC 33.2 mg/kg food				
	mammals/birds, acute		Bobwhite quail LD50 > 2000 mg/kg bw				
	aquatic organisms, chronic	fish	O. mykiss 98 d NOEC 0.002 mg/l				
			BCF 736				
		Daphnia	D. magna 21 d NOEC 0.004 mg/l				
		algae	P. subcapitata 72 h NOErC 0.843 mg/l				
		plants					
		other, if tested	C. riparius 28 d NOEC 0.040 mg/l				
			Mesocosm NOEC 0.008 mg/l				
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.006 mg/l				
		Daphnia	D. magna 48 h EC50 0.016 mg/l				
		algae	P. subcapitata 72 h ErC50 >0.843 mg/l				
		plants					
		other, if tested					
	ADI	0.03	mg/kg bw				
Calculated EQS values	$AA\text{-}QS_{water}$	0,2	µg/l				
	$AA\text{-}QS_{BalticSea}$	0,020	µg/l				
	MAC-QS	0,6	µg/l	AF is 10, since the range in toxicity > 100 X			
	$MAC\text{-}QS_{BalticSea}$	0,06	µg/l				
	QS_{biota}	0,369	mg/kg food		QS_{water}	0,50 µg/l	Value above AA-QS
					$QS_{BalticSea}$	0,50 µg/l	Value above AA-QS
	overall EQS	0,2	µg/l				
	overall $EQS_{BalticSea}$	0,020	µg/l				
	$QS_{sediment}$	0,4	µg/l	QSsed	2,4	mg/kg orgC	

Compound	**Pyrethrins**	data source	EC review report and DAR
Degradation	in soil		DT50 4.79 d (20°C); DT50 10.5 d (10°C)
	hydrolytic, in water		Pyrethrin 1: pH 5-7: stable; pH 9: DT50 17 d (25 °C)
	in water		DT50 0.7 -1.3 d
	in sediment		
	in water/sediment system		DT50 1.6-2.4 d
	distribution		Max. in sediment 20.4% at d 2
	comments		pyrethrin 1 = main representative of Pyrethrins
Adsorption	LOG(K_{OW})		Pyrethrin 1: 5.34, pyrethrin 2: 3.79, at 20°C, pH not specified
	K_{OC}		12472 – 74175
	LOG(Koc)		4,87 max
	dependent on pH?		No
Analysis	LOQ in water		GC/ECD 1 µg/l
Toxicity	mammals/birds, chronic		Rat long term and carc. and reproduction NOEC 100 mg/kg food (pyrethrin 1)
	mammals/birds, acute		Japanese quail LD50 40 mg/kg bw
	aquatic organisms, chronic	fish	P. promelas 35 d NOEC 1.9 µg/l (m)
			BCF 471
		Daphnia	D. magna 28 d NOEC 0.86 µg/l (m)
		algae	S. subspicatus 72 h NOEC 1.27 mg/l (mm)
		plants	
		other, if tested	C. riparius 28 d NOEC 9.68 µg/l (m)
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 5.2 µg/l (m)
		Daphnia	D. magna 48 h EC50 12 µg/l (m)
		algae	S. subspicatus 72 h EC50 > 1.27 mg/l (mm)
		plants	
		other, if tested	M. bahia 96 h LC50 1.4 µg/l (m)
			C. virginica 96 h EC50 87 µg/l
	ADI	0.04	mg/kg bw
Calculated EQS values	AA-QS_{water}	0,086	µg/l
	AA-$QS_{BalticSea}$	0,0086	µg/l
	MAC-QS	0,14	µg/l AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$	0,028	ng/l AF is 50, since an additional marine species (oyster) was tested
	QS_{biota}	3,333	mg/kg food QS_{water} 7,08 µg/l Value above AA-QS
			$QS_{BalticSea}$ 7,08 µg/l Value above AA-QS
	overall EQS	0,086	µg/l
	overall $EQS_{BalticSea}$	0,0086	µg/l
	$QS_{sediment}$	0,0968	µg/l QSsed 1,21 g/kg org C

Compound	**Pyridate**	data source	EC review report and DAR			
Degradation	in soil		DT50 0.2-1 d			
	hydrolytic, in water		DT50: pH 5 66.7 h; pH 7 17.8 h; pH 9 6.8 h (22°C)			
	in water		DT50 < 0.4 d			
	in sediment		–			
	in water/sediment system		DT50 <1 d			
	distribution					
	comments					
	metabolites		CL 9673			
Adsorption	LOG(K_{OW})		4,01			
	K_{OC}		Not derived			
	LOG(Koc)		–			
	dependent on pH?					
Analysis	LOQ in water		HPLC LOD 0.05 µg/l; LC/MS 0.01 µg/l*			
Toxicity	mammals/birds, chronic		Mammals repr. NOAEL 3.6 mg/kg bw/d = NOEC 30.0 mg/kg food			
	mammals/birds, acute		Bobwhite quail LD50 1269 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.08 mg/l			
			BCF 116			
		Daphnia	D. magna 21 d NOEC 0.01 mg/l			
		algae	A. flos-aquae 96 h NOEC > 2 mg/l			
		plants	L. gibba 7 d NOEC > 2 mg/l			
		other, if tested				
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 1.2 mg/l	L/EC50	logL/EC50	
		Daphnia	D. magna 48 h LC50 0.83 mg/l	1,20	0,08	
		algae	A. flos-aquae 96 h EC50 > 2.0 mg/l	0,83	-0,08	
		plants	L. gibba 7 d EC50 > 2.0 mg/l	2,00	0,30	
		other, if tested		2,00	0,30	
			SD (LogL/EC50)		0,19	<0.5
	ADI	0.036	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2d				
	$AA\text{-}QS_{BalticSea}$	DT50 < 2d				
	MAC-QS	83	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	$MAC\text{-}QS_{BalticSea}$	8,3	µg/l			
	QS_{biota}	DT50 < 2 d				
	$QS_{sediment}$	DT50 < 2 d				

Compound	CL 9673 (6-chloro-3-phenyl-pyridazin-4-ol)	data source	EC review report			
Formation			soil: max 88 % at d 3			
Degradation	in soil		18-23°C: DT50 15-55 d; 7° C: DT50 150 d			
	hydrolytic, in water		pH 5-9: stable			
	in water					
	in sediment					
	in water/sediment system					
	distribution		Max. in sediment: 46.7% at d 3			
	comments					
Adsorption						
	LOG(K_{OW})		pH 5: 1.85, pH 6: 1.37, pH 7: 0.50 (22°C)			
	K_{OC}		20-188			
	LOG(Koc)		2,27 max			
	dependent on pH?		Adsorption increased with increasing OM and decreasing pH			
Analysis	LOQ in water		HPLC-UV 0.05 µg/l			
Toxicity	mammals/birds, chronic		–			
	mammals/birds, acute		–			
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 20 mg/l			
			BCF –			
		Daphnia	D. magna 21 d NOEC 5 mg/l			
		algae	S. capricornutum 96 h NOEC 1.7 mg/l			
		plants				
		other, if tested				
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 20 mg/l	20,0	1,30	
		Daphnia	D. magna 48 hLC50 26.1 mg/l	26,1	1,42	
		algae	S. capricornutum 96 h EC50 4.93 mg/l	4,93	0,69	
		plants	SD LogL/EC50		0,39	<0,5
		other, if tested				
	ADI					
Calculated EQS values	$AA\text{-}QS_{water}$	170	µg/l			
	$AA\text{-}QS_{BalticSea}$	17	µg/l			
	MAC-QS	493	µg/l			
	$MAC\text{-}QS_{BalticSea}$	49,3	µg/l			
	QS_{biota}	LogKow <3				
	overall EQS	170	µg/l			
	overall $EQS_{BalticSea}$	17	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Pyrimethanil**	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 27.9-71.8 d (20°C)				
	hydrolytic, in water		pH 5-9: stable (22°)				
	in water		DT50 8.9-24 d				
	in sediment						
	in water/sediment system		DT50 40-121 d				
	distribution		Max. in sediment 68% at d 30				
	comments						
Adsorption	LOG(K_{OW})		2.84-3.00				
	K_{OC}		75-751				
	LOG(Koc)		2,88	max			
	dependent on pH?		Slightly increasing adsorption with decreasing pH				
Analysis	LOQ in water		LC/MS/MS 0.05 µg/l; GS/MS 0.02µg/l*				
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 5.4 mg/kg bw/day = NOEC 54.0 mg /kg food				
	mammals/birds, acute		Bobwhite quail and mallard LD50 > 2000 mg a.s./kg bw				
	aquatic organisms, chronic	fish	O. mykiss 91 d NOEC 0.07 mg/l				
			BCF	–			
		Daphnia	D. magna 21 d NOEC 0.94 mg/l				
		algae	P. subcapitata 96 h NOErC 1 mg/l				
		plants					
		other, if tested	C. riparius 28 d NOEC 4.0 mg/l				
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 10.56 mg/l			10,56	1,02
		Daphnia	D. magna 48 h EC50 2.9 mg/l			2,9	0,46
		algae	P. subcapitata 96 h ErC50 5.84 mg/l			5,84	0,77
		plants			SD (LogL/EC50)		0,28 <0.5
		other, if tested					
	ADI	0.17	mg/kg bw/day				
Calculated EQS values	AA-QS_{water}	7	µg/l				
	AA-$QS_{BalticSea}$	0,7	µg/l				
	MAC-QS	290	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$	29	µg/l				
	QS_{biota}	LogKow <3					
	overall EQS	7	µg/l				
	overall $EQS_{BalticSea}$	0,7	µg/l				
	$QS_{sediment}$	40	µg/l	QSsed	3,0	mg/kg org C	

Compound	**Quinoclamine**	data source	EFSA conclusion report and DAR					
Degradation	in soil		DT50 28 d					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 4.6 d					
	in sediment		–					
	in water/sediment system		DT50 15 d					
	distribution		Max. in sediment 35% at 2 d					
	comments							
Adsorption	LOG(K_{OW})		pH 11: 1.58 at 30 °C					
	K_{OC}		552-1264					
	LOG(Koc)		3,10	max				
	dependent on pH?		No					
Analysis	LOQ in water		GC-ECD 2 µg/l					
Toxicity	mammals/birds, chronic		Mouse long term and carc. NOAEL 0.38 mg/kg bw/day = NOEC 3.154 mg/kg food					
	mammals/birds, acute		Rat LD50 oral 200 < LD50 < 500 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.02 mg/l					
			BCF	–				
		Daphnia	D. magna 21 d NOEC 0.0021 mg/l					
		algae	S. subspicatus 72 h NOErC 0.0025 mg/l					
		plants	L. minor 7 d NOErC 0.04 mg/l					
		other, if tested	C. riparius 24 d NOEC 0.063 mg/l					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.063 mg/l			0,063	-1,20	
		Daphnia	D. magna 48 h EC50 2.15 mg/l			2,15	0,33	
		algae	S. subspicatus 72 h EC50 0.022 mg/l			0,022	-1,66	
		plants	L. minor 7 d ErC50 0.09 mg/l			0,09	-1,05	
		other, if tested			SD (LogL/EC50)		0,86	>0,5
	ADI	0.002	mg/kg bw/day					
Calculated EQS values	AA-QS_{water}	0,21	µg/l					
	AA-$QS_{BalticSea}$	0,021	µg/l					
	MAC-QS	0,22	µg/l					
	MAC-$QS_{BalticSea}$	0,022	µg/l					
	QS_{biota}	LogKow <3						
	overall EQS	0,21	µg/l					
	overall $EQS_{BalticSea}$	0,021	µg/l					
	$QS_{sediment}$	0,63	µg/l	QSsed	0,35	mg/kg org C		

Compound	**Rimsulfuron**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 25 d (20 °C); DT50 77 d (10 °C)	
	hydrolytic, in water			DT50: pH 5 ~5 d; pH 7 ~7 d; pH 9 4-11 h (25 °C)	
	in water			DT50 1-7 d	
	in sediment				
	in water/sediment system			DT50 1-11 d	
	distribution			Max. in sediment 12.6% at d 14	
	comments				
Adsorption	LOG(K_{OW})			pH 5: 0.288, pH 7: - 1.46 (25 °C)	
	K_{OC}			19-63	
	LOG(Koc)			1,80 max	
	dependent on pH?			No	
Analysis	LOQ in water			LC-MS/MS 0.05 µg/l; LC/MS 0.1 µg/l*	
Toxicity	mammals/birds, chronic			Rat long-term and carc. NOAEL 11.8 mg/kg bw/d = NOEC 236 mg/kg food	
	mammals/birds, acute			Bird LD50 > 2250 mg as/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 21 and 90 d NOEC 125 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 1 mg/l	
		algae		A. flos aquae 96 h NOErC 0.45 mg/l	
		plants		L. gibba 14 d NOEC 0.001 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		O. mykiss, L. macrochirus 96 h LC50 > 390 mg/l	
		Daphnia		D. magna 48 h EC50 >360 mg/l	
		algae		A. flos aquae 96 h ErC50 5.2 mg/l	
		plants		L. minor 14 d EC50 0.0046 mg/l	
		other, if tested			
	ADI		0.1	mg/kg bw	
Calculated EQS values	AA-QS_{water}		0,1	µg/l	
	AA-$QS_{BalticSea}$		0,010	µg/l	
	MAC-QS		0,46	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,046	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		0,1	µg/l	
	overall $EQS_{BalticSea}$		0,010	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Spirodiclofen**	data source	EFSA conclusion report and DAR						
Degradation	in soil		DT50 1.1-13 d; mean 7.3 d (20 °C); DT50 16 d (10°C; calc.)						
	hydrolytic, in water		DT50: pH 4 119.6 d; pH 7 52.1 d; pH 9 2.5 d (20°C)						
	in water		DT50 0.3-1.1 d						
	in sediment		DT50 2.5-4.4 d						
	in water/sediment system		DT50 2.3-4.2 d						
	distribution		Max. in sediment 68 % at d 1						
	comments								
Adsorption	LOG(K_{OW})		5.83 (pH 4); 5.1 (pH 7) (20°C)						
	K_{OC}		31037; estimated by HPLC						
	LOG(Koc)		4,49 max						
	dependent on pH?		No						
Analysis	LOQ in water		HPLC-MS/MS 0.05 µg/l						
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 8.1 mg/kg bw/d = NOEC 81 mg/kg food						
	mammals/birds, acute		Bobwhite quail LD50 > 2000 mg/kg bw						
	aquatic organisms, chronic	fish	O. mykiss 97 d ELS NOEC 0.00195 mg/l						
			BCF 491						
		Daphnia	D. magna 21 d NOEC 0.0111 mg/l						
		algae	P. subcapitata 96 h NOErC > 0.060 mg/l						
		plants							
		other, if tested	C. riparius 28 d NOEC 0.032 mg/l (im)						
							L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 > 0.0351 mg/l				0,0351	-1,45	
		Daphnia	D. magna 48 h EC50 > 0.0508 mg/l				0,0508	-1,29	
		algae	P. subcapitata 96 h ErC50 > 0.060 mg/l				0,06	-1,22	
		plants				SD (LogL/EC50)		0,12	<0.5
		other, if tested							
	ADI	0.015	mg/kg bw/day						
Calculated EQS values	$AA\text{-}QS_{water}$	0,20	µg/l						
	$AA\text{-}QS_{BalticSea}$	0,020	µg/l						
	MAC-QS	3,51	µg/l						
	$MAC\text{-}QS_{BalticSea}$	0,351	µg/l						
	QS_{biota}	0,900	mg/kg food		QS_{water}	1,83	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	1,83	µg/l	Value above AA-QS	
	overall EQS	0,20	µg/l						
	overall $EQS_{BalticSea}$	0,020	µg/l						
	$QS_{sediment}$	0,32	µg/l	QSsed	9,93	mg/kg org C			

Compound	**Sulfosulfuron**	data source		EC review report and DAR, LOEP	
Degradation	in soil			DT50 53-226 d (25 °C); >365 d (10 °C)	
	hydrolytic, in water			DT50: pH4 7 d; pH5 48 d; pH7 168 d; pH 9 156 d (25 °C)	
	in water			DT50 16.1-19.5 d	
	in sediment				
	in water/sediment system			DT50 19.8-32.2 d	
	distribution			Max. in sediment 11.8% at d 100	
	comments				
Adsorption	K_{OW}				
	LOG(K_{OW})			pH 5: 0.73, pH 7: -0.77, pH 9: -1.44	
	K_{OC}			5.3–89.0	
	LOG(Koc)			1,95 max	
	dependent on pH?			Adsorption increases with decreasing soil pH	
Analysis	LOQ in water			HPLC 0.1 µg/l; LC/MS 0.02 µg/l*	
Toxicity	mammals/birds, chronic			Mallard Duck NOEC 250 mg as/kg diet	
	mammals/birds, acute			Bird LD50 > 2250 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 87 d NOEC 100 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 102 mg/l	
		algae		S. capricornutum 72 h NOEC < 0.047 mg/l	
		plants		L. gibba 14 d NOEC 0.0005 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		C. carpio 96 h LC50 >91 mg/l	
		Daphnia		D. magna 48 h EC50 >96 mg/l	
		algae		S. capricornutum 72 h ErC50 0.669 mg/l	
		plants		L. gibba 14 d EC50 EC50 0.96 µg/l	
		other, if tested			
	ADI		0.24	mg/kg bw/d	
Calculated EQS values	AA-QS_{water}		0,05	µg/l	
	AA-$QS_{BalticSea}$		0,005	µg/l	
	MAC-QS		0,096	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,0096	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		0,05	µg/l	
	overall $EQS_{BalticSea}$		0,005	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Tebuconazole**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 >1 y (Recovery 67.4% after 365 d)			
	hydrolytic, in water		pH 5-9: stable (25 °C)			
	in water		Only one DT50 value of 42.6 d			
	in sediment		Agreed DT50 value 1000 d (> 1 y and no decline in 2 studies)			
	in water/sediment system		DT50 1 y			
	distribution		Not given			
	comments					
Adsorption	LOG(K_{OW})		3.7 at 20 °C, pH 7			
	K_{OC}		102-1249			
	LOG(Koc)		3,10 max			
	dependent on pH?		No			
Analysis	LOQ in water		GC-MS 0.05 µg/l			
Toxicity	mammals/birds, chronic		Dog long term and carc. NOAEL 3 mg/kg bw/day = NOEC 40.0 mg/kg food			
	mammals/birds, acute		Rat LD50 1700 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 83 d NOEC 0.012 mg/l (mm)			
			BCF 78			
		Daphnia	D. magna 21 d NOEC 0.010 mg/l (nom)			
		algae	S. subspicatus 72 h NOErC 1.0 mg/l			
		plants	L. gibba 14 d NOEC 0.0623 mg/l			
		other, if tested	M. bahia 28 d NOEC 0.035 mg/l (mm)			
			C. riparius 28 d EC10 2.45 mg/l (mm)	L/EC50	logL/EC50	
				4,4	0,64	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 4.4 mg/l (mm)	2,79	0,45	
		Daphnia	D. magna 48 h EC50 2.79 mg/l (mm)	3,8	0,58	
		algae	S. capricornotum 72 h ErC50 3.8 mg/l	5,3	0,72	
		plants	L. gibba 14 d EC50 0.144 mg/l (mm)	0,144	-0,84	
		other, if tested	M. bahia 96 h LC50 0.46 mg/l (mm)	0,46	-0,34	
			C. virginica 96 h EC50 3.0 mg/l (mm)	3	0,48	
				SD (LogL/EC50)	0,59	>0.5
			M. bahia not counted as "additional marine taxa", since as a crustacean it should have a different life form or feeding strategy from Daphnia			
	ADI	0.03	mg/kg bw/d			
Calculated EQS values	AA-QS_{water}	1	µg/l			
	AA-$QS_{BalticSea}$	0,1	µg/l			
	MAC-QS	1,44	µg/l			
	MAC-$QS_{BalticSea}$	2,88	µg/l	AF is 50, since an additional marine species (oyster) was tested		
	QS_{biota}	1,333	mg/kg food	QS_{water} 17,1 µg/l	Value above AA-QS	
				$QS_{BalticSea}$ 17,1 µg/l	Value above AA-QS	
	overall EQS	1	µg/l			
	overall $EQS_{BalticSea}$	0,1	µg/l			
	$QS_{sediment}$	24,5	µg/l	QSsed 2,5 mg/kg org C		

Compound	**Tepraloxydim**	data source	EC review report and DAR			
Degradation	in soil		DT50 5.2-14 d, mean 8.7 d (20 °C); DT50 20 d (10 °C)			
	hydrolytic, in water		pH 5: DT50 24.4 d; pH 7-9: stable (22°C)			
	in water		DT50 41.0-128.9 d			
	in sediment					
	in water/sediment system		DT50 48.6-171.4 d			
	distribution		Max. in sediment 9.9 % at d 14			
	comments					
Adsorption	LOG(K_{OW})		pH 4: 2.44, pH 7: 0.20, pH 9: -1.15			
	K_{OC}		0.3-77.2, mean 22.2			
	LOG(Koc)		1,89 max			
	dependent on pH?		Yes (low pH increases adsorption of a.s.)			
Analysis	LOQ in water		GC/MS 0.05 µg/l; GC/MS 0.1 µg/l*			
Toxicity	mammals/birds, chronic		Rat developm. NOAEL 40 mg/kg bw/day = NOEC 40 mg/kg food			
	mammals/birds, acute		Bird LD50 > 2000 mg/kg bw			
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 10 mg/l			
			BCF			
		Daphnia	D. magna 21 d NOEC 50 mg/l			
		algae	S. capricornutum 72 h NOEC 15 mg/l			
		plants	L. gibba 14 d NOEC 1.1 mg/l			
		other, if tested	–			
				L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 78.2 mg/l (m)	78,2	1,89	
		Daphnia	D. magna 48 h EC50 >100 mg/l	100	2,00	
		algae	S. capricornutum 72 h EbC50 76 mg/l	7,10	0,85	
		plants	L. gibba 14 d EC50 6.5 mg/l (m)	6,5	0,81	
		other, if tested	SD (LogL/EC50)		0,65	>0.5
	ADI	0.025	mg/kg bw/d			
Calculated EQS values	$AA\text{-}QS_{water}$	0,11	mg/l			
	$AA\text{-}QS_{BalticSea}$	0,011	mg/l			
	MAC-QS	0,065	mg/l	Value set to AA-QSwater		
	$MAC\text{-}QS_{BalticSea}$	0,0065	mg/l	Value set to AA-QSBalticSea		
	QS_{biota}	LogKow <3				
	overall EQS	0,11	mg/l			
	overall $EQS_{BalticSea}$	0,011	mg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	**Thiacloprid**	data source	EC review report and DAR			
Degradation	in soil		DT50 0.7-5.0 d, mean 1.3 d (20 °C); DT50 1.2-10.3 d (10 °C)			
	hydrolytic, in water		pH 5-9: stable			
	in water		DT50 6-11 d			
	in sediment					
	in water/sediment system		DT50 11-27 d			
	distribution		Max. in sediment 50 % at d 3			
	comments					
Adsorption	LOG(K_{OW})		1.26 at 20°C; unaffected by pH			
	K_{OC}		393-870 (mean 615)			
	LOG(Koc)		2,94	max		
	dependent on pH?		No			
Analysis	LOQ in water		HPLC-UV 0.05 µg/l			
Toxicity	mammals/birds, chronic		Rat long term and carc. NOAEL 25 mg/kg food = NOEC 500 mg/kg food			
	mammals/birds, acute		C. japonica LD50 49 mg/kg bw			
	aquatic organisms, chronic	fish	O.mykiss 97 d ELS NOEC 0.24 mg/l			
			BCF	–		
		Daphnia	D.magna 21 d NOEC 0.58 mg/l			
		algae	P. subcapitata 120 NOEC 18 mg/l			
		plants	L. gibba 15 d NOEC 46.8 mg/l			
		other, if tested	C. riparius 28 d NOEC 0.001 mg/l			
			Mesocosm NOEC < 0.00032 mg/l (NOEC for sediment dwellers)			
	aquatic organisms, acute	fish	L. macrochirus 96 h LC50 25.2 mg/l			
		Daphnia	D. magna 48 h EC50 > 85.1 mg/l			
		algae	S. subspicatus 72 h ErC50 96.7 mg/l			
		plants	L. gibba 15 d EC50 141.8 mg/l			
		other, if tested	H. azteca 96h LC50 0.0407 mg/l; EC50 0.024 mg/l			
			A. aquaticus 48 h EC50 0.0758 mg/l			
			G. pulex 48 h EC50 0.027 mg/l			
			S. personatum 48 h 0.1<EC50<1.0 mg/l			
			Ecydonurus sp. 48 h EC50 0.0077 mg/l			
	ADI		0.01	mg/kg bw/day		
Calculated EQS values	AA-QS_{water}		0,064	µg/l	AF is 5, since mesocosm study was used	
	AA-$QS_{BalticSea}$		0,0064	µg/l		
	MAC-QS		0,77	µg/l	AF is 10, since the range in toxicity > 100 X	
	MAC-$QS_{BalticSea}$		0,077	µg/l		
	QS_{biota}	LogKow <3				
	overall EQS		0,064	µg/l		
	overall $EQS_{BalticSea}$		0,0064	µg/l		
	$QS_{sediment}$		0,0032	µg/l	QSsed	1,2576 µg/kg org C

Compound	**Thiamethoxam**	data source		EC review report, DAR and LoEP	
Degradation	in soil			DT50 34-276 d, mean = 156 d (20° C); DT50 233 d (10°C)	
	hydrolytic, in water			pH 1-7: stable, pH 9: DT50 7.3-15.6 d	
	in water			DT50 22.9-38.2 d	
	in sediment				
	in water/sediment system			DT50 33.7-46.4 d	
	distribution			Max in sediment 36.6% at d 8	
	comments				
Adsorption	LOG(K_{OW})			-0.13 ± (0.0017) at 25°C	
	K_{OC}			33-177, mean 56	
	LOG(Koc)			2,25 max	
	dependent on pH?			No	
Analysis	LOQ in water / soil			HPLC-UV 0.5 µg/l; LC/MS 0.05 µg/l* / HPLC-MS/MS 0.002 mg / kg soil	
Toxicity	mammals/birds, chronic			Mice 90 d NOAEL 1.4 mg/kg bw/d = NOEC 10 mg/kg food	
	mammals/birds, acute			Mallard duck LD50 576 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 88 d NOEC 20 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 100 mg/l	
		algae		S. capricornutum 72 h NOEC 81.8 mg/l	
		plants		L. gibba 7 d NOEC 90.2 mg/l	
		other, if tested		C. riparius 30 d NOEC 0.010 mg/l, 0.10 mg/kg sediment	
				Microcosm NOEC 0.030 mg/l	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 >125 mg/l	
		Daphnia		D. magna 48 h EC50 >100 mg/l	
		algae		S. capricornutum 72 h EC50 >81.8 mg/l	
		plants		L. gibba 7 d EC50 >90.2 mg/l	
		other, if tested		Chaoborus sp. 48 h EC50 0.18 mg/l	
				C. virginica 96 h >119 mg/l	
				B. calyciforus (Rotifera) 24 h EC50 >100 mg/l	
				Cloeon sp. (Insecta) 48 h EC50 0.014 mg/l	
	ADI		0.026	mg/kg bw/day	
Calculated EQS values	AA-QS_{water}		1	µg/l	
	AA-$QS_{BalticSea}$		0,1	µg/l	
	MAC-QS		1,4	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,14	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		1	µg/l	
	overall $EQS_{BalticSea}$		0,1	µg/l	
	$QS_{sediment}$		0,001	mg/kg sediment	QSsed

Compound	**Thifensulfuron-methyl**	data source		EC review report and DAR	
Degradation	in soil			DT50 2-6 d (20 °C), 6.2-18.6 d (10 °C)	
	hydrolytic, in water			pH 5 4-6 d, pH 7 180 d, pH 9 90 d	
	in water			DT50 18-26 d	
	in sediment				
	in water/sediment system			DT50 15-27 d	
	distribution			No accumulation in sediment expected	
	comments				
Adsorption	LOG(K_{OW})			pH 5: 1.06, pH 7 -1.7, pH 9 -2.1	
	K_{OC}			13-55, mean 28	
	LOG(Koc)			1,74 max	
	dependent on pH?				
Analysis	LOQ in water			HPLC 0.050 µg/l; LC/MS 0.01 µg/l*	
Toxicity	mammals/birds, chronic			Rat long term & carc. NOAEL 0.96 mg/kg bw/d = NOEC 19.2 mg/kg food	
	mammals/birds, acute			A. platyrhynchos LD50 > 2510 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 250 mg/l	
				BCF <0.8	
		Daphnia		D. magna 21 d NOEC 100 mg/l	
		algae		NOEC not given but Lemna more sensitive	
		plants		L. minor 14 d NOEC 0.0005 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		O. mykiss and L. macrochirus 96 h LC50 > 100 mg/l	
		Daphnia		D. magna 48 h EC50 470 mg/l	
		algae		N. pelliculosa 48 h ErC50 0.0159 mg/l	
		plants		L. minor 14 d EC50 0.0013 mg/l	
		other, if tested			
	ADI		0.01	mg/kg bw/d	
Calculated EQS values	AA-QS		0,05	µg/l	
	AA-$QS_{BalticSea}$		0,005	µg/l	
	MAC-QS		0,13	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,013	µg/l	
	QS_{biota}	LogKow <3			
	overall AA-QS		0,05	µg/l	
	overall AA-$QS_{BalticSea}$		0,005	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Thiophanate-methyl**	data source		EC review report and DAR			
Degradation	in soil			DT50 0.61 d (20 °C)			
	hydrolytic, in water			DT50: pH 5 867 d, pH 7 36 d, pH 9 0.7 d (25 °C)			
	in water			DT50 2.9 d			
	in sediment						
	in water/sediment system			DT50 1.8 -3.7 d			
	distribution			Max. in sediment 8.1 % at 8 d			
	comments			Degradation ~ 2 d in soil, water and sediment; therefore no AA-QS values were derived.			
	metabolites			Carbendazim			
Adsorption	LOG(K_{OW})			1.45 ± 0.5 (pH 4-7)			
	K_{OC}			189-225			
	LOG(Koc)			2,35 max			
	dependent on pH?			Yes, stronger in acidic soils			
Analysis	LOQ in water			HPLC 0.05 µg/l			
Toxicity	mammals/birds, chronic			Rat long term & carc. NOEC 200 mg/kg food (NOAEL 8.8 mg/kg bw/d)			
	mammals/birds, acute			LD50 rat > 5000 mg/kg bw			
	aquatic organisms, chronic	fish		O. mykiss 28 d NOEC 0.32 mg/l			
				BCF –			
		Daphnia		D. magna 21 d NOEC 0.18 mg/l			
		algae					
		plants					
		other, if tested		C. riparius 28 d NOEC 0.5 mg/l			
						L/EC50	logL/EC50
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 1.07 mg/l		1,07	0,029
		Daphnia		D. magna 48 h EC50 5.4 mg/l		5,4	0,732
		algae		P. subcapitata 72 h ErC50 > 25.4 mg/l		25,4	1,405
		plants			SD (LogL/EC50)		0,688 > 0.5
		other, if tested					
	ADI		0.08	mg/kg bw			
Calculated EQS values	AA-QS	DT50 < 2 d					
	AA-$QS_{BalticSea}$	DT50 < 2 d					
	MAC-QS		10,7	µg/l			
	MAC-$QS_{BalticSea}$		1,07	µg/l			
	QS_{biota}	DT50 < 2 d					
	$QS_{sediment}$	DT50 < 2 d					

Compound	Carbendazim	data source	EC review report and DAR on thiophanate-methyl; EFSA conclusion report on carbendazim					
Formation	in soil		12.7-36.2 % at 64 d					
Degradation	in soil		DT50 23.1–57.8 d, mean 39.8 d (20°C)					
	hydrolytic, in water							
	in water							
	in sediment							
	in water/sediment system							
	distribution		Max. in sediment 42.6 % at 8 d					
	comments							
Adsorption	LOG(K_{OW})		pH 5: 1.4; pH 7-9: 1.5					
	K_{OC}		200-246					
	LOG(Koc)		2,39	max				
	dependent on pH?		No					
Analysis	LOQ in water		LC-MS/MS 0.1 µg/l					
Toxicity	mammals/birds, chronic		Rat 28 d developm. NOAEL 10 mg/kg bw/d = NOEC 100 mg/kg food					
	mammals/birds, acute		C. virginianus LD50 > 2250 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 21 d NOEC 0.0032 mg/l (nom)					
			BCF	–				
		Daphnia	D. magna 21 d NOEC 0.0015 mg/l (mm)					
		algae	P. subcapitata 72 h NOEC 0.5 mg/l					
		plants						
		other, if tested	C. riparius 28 d NOEC 0.0133 mg/l (nom)					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	l. punctatus 96 h LC50 0.019 mg/l (nom)			0,019	-1,72	
		Daphnia	D. magna 48 h EC50 0.15 mg/l (nom)			0,15	-0,82	
		algae	C. pyrenoidosa 48 h ErC50 0.34 mg/l			0,34	-0,47	
		plants			SD (LogL/EC50)		0,65	< 0.5
		other, if tested						
	ADI	0.02	mg/kg bw					
Calculated EQS values	AA-QS	0,15	µg/l					
	AA-$QS_{BalticSea}$	0,015	µg/l					
	MAC-QS	2	µg/l					
	MAC-$QS_{BalticSea}$	0,15	µg/l					
	QS_{biota}	LogKow <3						
	overall EQS	0,15	µg/l					
	overall $EQS_{BalticSea}$	0,015	µg/l					
	$QS_{sediment}$	0,133	µg/l	QSsed	26,6	µg/kg orgC		

Compound	**Thiram**	data source		EC review report and DAR				
Degradation	in soil			Median DT50 4.6 d (20°C); DT50 9.8 d (10°C)				
	hydrolytic, in water			DT50: pH 5 68.5 d, pH 7 3.5 d, pH 9 6.9 h				
	in water			DT50 32-46 h				
	in sediment							
	in water/sediment system			DT50 32-46 h				
	distribution			Not found in the sediment				
	comments			Degradation < 2 d in water and sediment; therefore no AA-QS values were derived.				
Adsorption	LOG(K_{OW})			1.73 (distilled water) no effect of pH				
	K_{OC}			2245-24526 ; median = 9629				
	LOG(Koc)			4,39	max			
	dependent on pH?			No				
Analysis	LOQ in water			HPLC (conf. LC-MS) 0.1 µg/l				
Toxicity	mammals/birds, chronic			Rat long term and carc. NOAEL 30 mg/kg food = NOEC 600 mg/kg food				
	mammals/birds, acute			Rat LD50 2750 mg/kg bw				
	aquatic organisms, chronic	fish						
				BCF	–			
		Daphnia						
		algae		P. subcapitata 120 h NOEC 0.0057 mg/l				
		plants						
		other, if tested		C. riparius mesocosm NOEC 1 mg/l				
				Mesocosm NOEC 0.001 mg/l				
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 0.046 mg/l		0,046	-1,34	
		Daphnia		D. magna 48 h EC50 0.011 mg/l		0,011	-1,96	
		algae		P. subcapitata 120 h EC50 0.065 mg/l		0,065	-1,19	
		plants			SD (LogL/EC50)		0,41	<0.5
		other, if tested						
	ADI		0.01	mg/kg bm/d				
Calculated EQS values	AA-QS_{water}	DT50 < 2 d						
	AA-$QS_{BalticSea}$	DT50 < 2 d						
	MAC-QS		1,1	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	MAC-$QS_{BalticSea}$		0,11	µg/l				
	QS_{biota}	DT50 < 2 d						
	$QS_{sediment}$	DT50 < 2 d						

Compound	**Tolclofos-methyl**	data source	EFSA conclusion report and DAR						
Degradation	in soil		DT50 2.0-5.4 d (20°C)						
	hydrolytic, in water		pH4-9: stable						
	in water		DT50 0.9-1.6 d						
	in sediment		DT50 19-27 d						
	in water/sediment system		DT50 15-16 d						
	distribution		Max. in sediment 73% at 3 d						
	comments								
Adsorption	LOG(K_{OW})		4.56 ± 0.017 (pH differences not expected)						
	K_{OC}		1649-6139 (mean 3620)						
	LOG(Koc)		3,79 mean						
	dependent on pH?		No						
Analysis	LOQ in water		GC/FDP 0.1 µg/l; GC/MS 0.005 µg/l*						
Toxicity	mammals/birds, chronic		Mouse long term and carc. NOAEL 6.4 mg/kg bw/d = NOEC 53.12 mg/kg food						
	mammals/birds, acute		Mouse LD50 3500 mg/kg bw						
	aquatic organisms, chronic	fish	O. mykiss 97 d NOEC 0.012 mg/l (m)						
			BCF 670						
		Daphnia	D. magna 21 d NOEC 0.026 mg/l (m)						
		algae	S. subspicatus 72 h NOEC 0.22 mg/l (mm)						
		plants							
		other, if tested	C. riparius 28 d NOEC 0.25 mg/l (nom)						
								L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.69 mg/l (m)					0,69	-0,16
		Daphnia	D. magna 48 h EC50 48 mg/l (m)					48	1,68
		algae	S. subspicatus 72 h ErC50 >1.1 mg/l (mm)					1,1	0,04
		plants				SD (LogL/EC50)			1,01 >0.5
		other, if tested							
	ADI	0.064	mg/kg bw/d						
Calculated EQS values	AA-QS_{water}	1,2	µg/l						
	AA-$QS_{BalticSea}$	0,12	µg/l						
	MAC-QS	6,9	µg/l						
	MAC-$QS_{BalticSea}$	0,69	µg/l						
	QS_{biota}	1,771	mg/kg food		QS_{water}	2,6	µg/l	Value above AA-QS	
					$QS_{BalticSea}$	2,6	µg/l	Value above AA-QS	
	overall EQS	1,2	µg/l						
	overall $EQS_{BalticSea}$	0,12	µg/l						
	$QS_{sediment}$	2,5	µg/l	QSsed	4,1	mg/kg org C			

Compound	**Tralkoxydim**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 0.8-10.8, mean 2.6 d (20 °C/pF2); 10°C: mean DT50 18.0 d	
	hydrolytic, in water			DT50: pH5 9 d; pH 7-9: stable	
	in water			DT50 43.9-92.9 d	
	in sediment				
	in water/sediment system			DT50 60.1-161.3 d	
	distribution			Max. in sediment 19.7 % at d 28	
	comments				
Adsorption	LOG(K_{OW})			2.1 at 20 °C; expected to decrease with increasing pH	
	K_{OC}			30-290	
	LOG(Koc)			2,46 max	
	dependent on pH?			Yes: Adsorption increases in acidic soil	
Analysis	LOQ in water			MS/MS 0.05µg/l; LC/MS 0.01 µg/l*	
Toxicity	mammals/birds, chronic			Rat 28 d developm. NOAEL 1 mg/kg bw/d = NOEC 8.33 mg/kg food	
	mammals/birds, acute			Rat LD50 934 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 96 h NOEC 4.6 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 2.1 mg/l	
		algae		P. subcapitata 96 h NOEC 1.5 mg/l (im)	
		plants		L. gibba 14 d NOEbC 0.14 mg/l (im)	
		other, if tested			
	aquatic organisms, acute	fish		L. macrochirus 96 h LC50 >6.1 mg/l (im)	
		Daphnia		D. magna 24 h EC50 >175 mg/l (im)	
		algae		P. subcapitata 96 h EC50 >5.1 mg/l; 120 h ErC50 21 mg/l (im)	
		plants		L. gibba 14 d EbC50 1.0 mg/l (im)	
		other, if tested			
	ADI		0.005	mg/kg bw/day	
Calculated EQS values	AA-QS_{water}		14	µg/l	
	AA-$QS_{BalticSea}$		1,4	µg/l	
	MAC-QS		100	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		10	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		14	µg/l	
	overall $EQS_{BalticSea}$		1,4	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Triadimenol**	data source	EFSA conclusion report and DAR					
Degradation	in soil		DT%= 47.3-158.4 d (20 °C/pF2)					
	hydrolytic, in water		pH5-9: stable					
	in water		Not calculated					
	in sediment							
	in water/sediment system		DT50 324-381 d; extrapolated beyond study duration					
	distribution		Max in sediment 52.3 % at d 17					
	comments							
Adsorption	LOG(K_{OW})		Isomer A: 3.08, isomer B: 3.28					
	K_{OC}		14-702					
	LOG(Koc)		2,85	max				
	dependent on pH?		No					
Analysis	LOQ in water / soil		GC/MS 0.05 µg/l; GC/MS 0.05 µg/l* / DFG 0.01 mg/kg; GC-MSD 0.05 mg/kg*					
Toxicity	mammals/birds, chronic		Rat repr. NOAEL 6 mg/kg bw/d = NOEC 50 mg/kg food					
	mammals/birds, acute		Rat LD50 689-752 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 3.13 mg/l					
			BCF	21				
		Daphnia	D. magna 21 d NOEC 0.1 mg/l					
		algae	P. subcapitata 72 h NOErC 0.97 mg/l					
		plants						
		other, if tested	C. riparius 28 d NOEC 0.1 mg/l, 0.667 mg/kg sed.					
						L/EC50	logL/EC50	
	aquatic organisms, acute	fish	L. idus melanotus 96 h LC50 17.4 mg/l			17,4	1,24	
		Daphnia	D. magna 48 h EC50 51 mg/l			51	1,71	
		algae	P. subcapitata 72 h ErC50 38 mg/l			38	1,58	
		plants			SD (LogL/EC50)		0,24	<0.5
		other, if tested						
	ADI	0.05	mg/kg bw/d					
Calculated EQS values	AA-QS_{water}	10	µg/l					
	AA-$QS_{BalticSea}$	1	µg/l					
	MAC-QS	1,74	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5				
	MAC-$QS_{BalticSea}$	0,174	mg/l					
	QS_{biota}	1,67	mg/kg food		QS_{water}	79,5	µg/l	Value above AA-QS
					$QS_{BalticSea}$	79,5	µg/l	Value above AA-QS
	overall EQS	10	µg/l					
	overall $EQS_{BalticSea}$	1	µg/l					
	$QS_{sediment}$	0,00667	mg/kg	QSsed				

Compound	**Triasulfuron**	data source		EC review report and DAR	
Degradation	in soil			DT50 33 -76 d; 10°C: DT50 49 d	
	hydrolytic, in water			pH 5: DT50 > 23 d; pH 7-9: stable	
	in water			DT50 189-245 d	
	in sediment			–	
	in water/sediment system			DT50 189-245 d	
	distribution			Negligible AR in sediment (< 5 %)	
	comments				
Adsorption					
	LOG(K_{OW})			pH 5: 1.1, pH 7: - 0.59, pH 9: - 1.8	
	K_{OC}			7-25	
	LOG(Koc)			1,40 max	
	dependent on pH?			No	
Analysis	LOQ in water			HPLC 0.05 µg/l (LOD); LC/MS 0.01 µg/l*	
Toxicity	mammals/birds, chronic			Mouse long term and carc. NOEC 10 mg/kg food (NOAEL 1.2 mg/kg bw/d)	
	mammals/birds, acute			Bobwhite quail LD50 > 2 150 mg/kg	
	aquatic organisms, chronic	fish		P. promelas 32 d NOEC 36.6 mg/l (mc)	
				BCF 1.2-1.3	
		Daphnia		D. magna 21 d NOEC (s) 10 mg/l	
		algae		P. subcapitata NOEC < 0.032 mg/l	
		plants		L. gibba 14 d NOEC 0.000018 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		Fish (5 species) 96 h LC50 > 100 mg/l	
		Daphnia		D. magna EC50 48 h > 100 mg/l	
		algae		P. subcapitata EC50 12 d 0.035 mg/l	
		plants		L. gibba 14 d EC50 0.000073 mg/l	
		other, if tested			
	ADI		0.01	mg/kg bw/d	
Calculated EQS values	$AA\text{-}QS_{water}$		0,0018	µg/l	
	$AA\text{-}QS_{BalticSea}$		0,00018	µg/l	
	MAC-QS		0,0073	µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$		0,00073	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		0,0018	µg/l	
	overall $EQS_{BalticSea}$		0,00018	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Tribenuron-methyl**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 5-20 d (20°C); 17-46 d (10°C)	
	hydrolytic, in water			ph 5: < 1 d, pH 7: ~16 d, pH 9: stable	
	in water			DT50 21-26 d	
	in sediment			–	
	in water/sediment system			DT50 24-27 d	
	distribution			Max. in sediment 20 % at d 7	
	comments				
Adsorption	LOG(K_{OW})			pH 5: 2.6, pH 7: 0.78, pH 9: 0.30	
	K_{OC}			9.8–74	
	LOG(Koc)			1,87 max	
	dependent on pH?			yes (higher adsorption in lower pH)	
Analysis	LOQ in water			LC/MS/MS 0.05 µg/l; 0.01 µg/l*	
Toxicity	mammals/birds, chronic			Rat long term and carc. NOEC 25 mg/kg food (NOAEL 1 mg/kg bw/day)	
	mammals/birds, acute			Rat LD50 > 5000 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 21 d NOEC 560 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 120 mg/l	
		algae		S. capricornutum 120 h NOEC 0.004 mg/l	
		plants		L. gibba 14 d NOEC 0.001 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 738 mg/l	
		Daphnia		D. magna 48 h EC50 > 894 mg/l	
		algae		S. capricornotum 120 h ErC50 0.112 mg/l	
		plants		L. gibba 14 d EC50 fronds 0.0043 mg/l	
		other, if tested			
	ADI		0.01	mg/kg bw/d	
Calculated EQS values	AA-QS		0,1	µg/l	
	AA-$QS_{BalticSea}$		0,01	µg/l	
	MAC-QS		0,43	µg/l	AF is 10, since the range in toxicity > 100 X
	MAC-$QS_{BalticSea}$		0,04	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		0,1	µg/l	
	overall $EQS_{BalticSea}$		0,01	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Trifloxystrobin**	data source		DAR and LoEP	
Degradation	in soil			DT50 0.3-3.6 d (20 °C); mean 0.67 d (20°C/–10kPa); DT50 1.2 d (10°C)	
	hydrolytic, in water			DT50: pH 5 480->1000 d; pH 7 ~40 d; pH 9 ~1-2 d	
	in water			DT50 1.1-1.2 d	
	in sediment				
	in water/sediment system			DT50 1.2-3.5 d	
	distribution				
	comments			Degradation < 2 d in soil, water and sediment; therefore no AA-QS values were derived.	
	metabolites			Metab. in soil: CGA321113; photolysis metab. in water: CGA 357261	
Adsorption	LOG(K_{OW})			25°C : 4.5 ± (0.0094)	
	K_{OC}			1642-3745 (6 soils)	
	LOG(Koc)			3,57 max	
	dependent on pH?			No	
Analysis	LOQ in water			HPLC-UV 0.05 µg/l (parent+CGA 321113); LC/MS 0.02 µg/l*	
				HPLC-UV, LOQ 0.01 mg/kg (soil)	
Toxicity	mammals/birds, chronic			Mammal repr. NOEC 50 mg/kg food (NOAEL 2.3 mg/kg bw/day)	
	mammals/birds, acute			C. virginianus LD50 > 2000 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 95 d ELS NOEC 0.0077 mg/l	
				BCF 431	
		Daphnia		D. magna 21 d NOEC 0.0027 mg/l	
		algae		S. subspicatus 72 h NOEC 0.0019 mg/l	
		plants		L. gibba 14 d NOEC 0.411 mg/l	
		other, if tested		C. riparius 28 d NOEC 0.2 mg/l	
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 0.015 mg/l	
		Daphnia		D. magna 48 h EC50 0.016 mg/l	
		algae		S. subspicatus 72 h EbC50 0.0053 mg/l	
		plants		L. gibba 14 d EC50 > 1.93 mg/l	
		other, if tested		M. bahia 96 h EC50 0.0086 mg/l	
				C. virginica 96 h 0.034 mg/l	
	ADI		0.1	mg/kg bw/day	
Calculated EQS values	$AA\text{-}QS_{water}$	DT50 < 2 d			
	$AA\text{-}QS_{BalticSea}$	DT50 < 2 d			
	MAC-QS		0,53	µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$		0,11	µg/l	AF is 50, since additional marine species (oyster) tested
	QS_{biota}	DT50 < 2 d			
	$QS_{sediment}$	DT50 < 2 d			

Compound	CGA 321113	data source	DAR and LoEP				
Formation	in soil		Aerobic: 85-97% at 7-28 d (n=9)				
	in water		Via hydrolysis at pH 7: 30-60 %, pH 9: 90-100 %; photolytic ~20 %				
Degradation	in soil		Mean (20°C/-10kPa): DT50 116d; 10°C DT50 380 d				
	hydrolytic, in water		pH 7-9: stable				
	in water		DT_{50} 170-320d				
	in sediment		DT_{50} 460-2940 d				
	in water/sediment system						
	distribution		Max in sediment 51.1% at d 102				
	comments						
Adsorption	LOG(K_{OW})		0.59 (at pH 7.02)				
	K_{OC}		84-194				
	LOG(Koc)		2,29	max			
	dependent on pH?						
Analysis	LOQ in water		HPLC-UV 0.05 µg/l, determined: parent and metabolite CGA 321113				
Toxicity	mammals/birds, chronic		No evidence of genotoxic activity				
	mammals/birds, acute		Rat LD 50 > 2000 mg/kg bw				
	aquatic organisms, chronic	fish					
		Daphnia	D. magna 21 d NOEC 3.2 mg/l				
		algae	P. subcapitata 72 h NOEC 18 mg/l				
		plants					
		other, if tested	C. riparius 28 d NOEC 25 mg/l				
					L/EC50	logL/EC50	
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >106 mg/l		106	2,03	
		Daphnia	D. magna 48 h EC50 >100 mg/l		100	2,00	
		algae	P. subcapitata 72 h EbC50 >100 mg/l		100	2,00	
		plants		SD (LogL/EC50)		0,01	<0.5
		other, if tested					
	ADI						
Calculated EQS values	AA-QS_{water}		64	µg/l			
	AA-$QS_{BalticSea}$		6,4	µg/l			
	MAC-QS		10	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-$QS_{BalticSea}$		1	mg/l			
	QS_{biota}	LogKow <3					
	overall EQS		64	µg/l			
	overall $EQS_{BalticSea}$		6,4	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l					

Compound	CGA 357261	data source	DAR and LoEP				
Formation	in soil		–				
	in water		water, photolytic: pH 5: ~40 %, pH7: 35-40 %				
Toxicity	aquatic organisms, chronic	fish					
		Daphnia					
		algae	S. subspicatus 72 h NOEbC 0.9 mg/l				
		plants					
		other, if tested					
						L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 0.9 mg/l			0,9	-0,05
		Daphnia	D. magna 48 h EC50 1.4 mg/l			1,4	0,15
		algae	S. subspicatus 72 h EbC50 1.4 mg/l			1,4	0,15
		plants			SD (LogL/EC50)		0,11
		other, if tested					
Calculated EQS values	$AA\text{-}QS_{water}$		0,9	µg/l	AF is 1000, since not enough chronic data		
	$AA\text{-}QS_{BalticSea}$		0,09	µg/l			
	MAC-QS		90	µg/l	AF is 10, since the range in toxicity > 100 X		
	$MAC\text{-}QS_{BalticSea}$		9	µg/l			
	QS_{biota}	–					
	$QS_{sediment}$	–					

Compound	**Triflusulfuron-methyl**	data source		EFSA conclusion report and DAR	
Degradation	in soil			DT50 6.5 d (20 °C); DT50 21 d (10°C)	
	hydrolytic, in water			DT50: pH 5 3.7 d, pH 7 32 d, pH 9 36 d	
	in water			DT50 ~25 d	
	in sediment			–	
	in water/sediment system			DT50 ~30 d	
	distribution			Max. in sed 22.5 % at d 7	
	comments				
Adsorption	LOG(K_{OW})			pH 5: 2.3, pH 7: 0.96, pH 9: -0.066 (25°C)	
	K_{OC}			25-52	
	LOG(Koc)			1,72 max	
	dependent on pH?			No	
Analysis	LOQ in water			LC/MS 0.05 µg/l; LC/MS 0.05 µg/l*	
Toxicity	mammals/birds, chronic			Rat repr. NOAEL 5.8 mg/kg bw = NOEC 48.3 mg/kg food	
	mammals/birds, acute			Bird LC50 > 2250 mg/kg bw	
	aquatic organisms, chronic	fish		O. mykiss 97 d NOEC 57.7 mg/l	
				BCF –	
		Daphnia		D. magna 21 d NOEC 11 mg/l	
		algae		P. subcapitata 120 h NOEC 0.036 mg/l	
		plants		L. gibba NOErC 14 d 0.0015 mg/l	
		other, if tested			
	aquatic organisms, acute	fish		O. mykiss 96 h LC50 730 mg/l	
		Daphnia		D. magna 48 h EC50 >960 mg/l	
		algae		P. subcapitata 120 h EC50 0.0463 mg/l	
		plants		L. gibba 14 d ErC50 0.0035 mg/l	
		other, if tested		M. aquaticum (form.) 14 d EC50 0.018 mg as/l	
	ADI		0.04	mg/kg/d	
Calculated EQS values	$AA\text{-}QS_{water}$		0,15	µg/l	
	$AA\text{-}QS_{BalticSea}$		0,015	µg/l	
	MAC-QS		0,35	µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$		0,035	µg/l	
	QS_{biota}	LogKow <3			
	overall EQS		0,15	µg/l	
	overall $EQS_{BalticSea}$		0,015	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l			

Compound	**Trinexapac-ethyl**	data source	EFSA conclusion report and DAR			
Degradation	in soil		DT50 (20 °C): 0.31 and 0.34 d			
	hydrolytic, in water		pH 5-7: stable (20°C); pH 9: DT50 10.9 d			
	in water		Average DT50 4.2 d			
	in sediment		DT50 0.86-5.3 d			
	in water/sediment system		DT50 3.8-5.2 d			
	distribution		Max. in sediment 6.0 %			
	comments					
	metabolite		Trinexapac (active substance)			
Adsorption	LOG(K_{OW})		-0,29 at pH 6,9, 25 °C			
	K_{OC}		60-629			
	LOG(Koc)		2,80 max			
	dependent on pH?		Yes, decreased sorption at increasing pH			
Analysis	LOQ in water		0.1 µg /l; LC/MS 0.02 µg/l*			
Toxicity	mammals/birds, chronic		Rat 90 d NOAEL 34 mg/kg bw/day = NOEC 340 mg/kg			
	mammals/birds, acute		Bird acute LD50 > 2000 mg/kg bw			
	aquatic organisms, chronic					
		fish	P. promelas 21 d (ELS) NOEC 0.41 mg/l			
			BCF 6,0			
		Daphnia	D. magna 48 h EC50 2.4 mg/l			
		algae	P. subcapitata 72 h NOErC 9.4 mg/l			
		plants	L. gibba 7 d NOErC 2.3 mg/l			
		other. if tested				
	aquatic organisms, acute				L/EC50	logL/EC50
		fish	I. punctatus 96 h LD50 35 mg/l		35	1,54
		Daphnia	D. magna 48 h EC50 >142.5 mg/l		142,5	2,15
		algae	A. flos-aquae 96 h ErC50 25.7 mg/l		25,7	1,41
		plants	L. gibba 7 d ErC50 27.4 mg/l		27,4	1,44
		other, if tested		SD (LogL/EC50)		0,35 <0.5
	ADI	0.32	mg/kg bw/day			
Calculated EQS values	QS_{water}	41	µg/l			
	$QS_{BalticSea}$	4,1	µg/l			
	MAC-QSwater	2,57	mg/l	AF is 10, since the SD (LogL/EC50) < 0.5		
	MAC-QSBalticsea	0,257	mg/l			
	QS_{biota}	LogKow <3				
	Overall EQS	41	µg/l			
	Overall EQSBalticsea	4,1	µg/l			
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l				

Compound	Trinexapac	data source	EFSA conclusion report and DAR				
Degradation	in soil		DT50 2.5-31.1 d, mean 11.7 d (20°C in 5 soils)				
	hydrolytic, in water		DT50: pH 4 79 d, pH 5 74 d (20°C)				
	in water		DT50 10.8-19.1 d, mean15.0 days (applied as parent)				
	in sediment						
	in water/sediment system		DT50 32.7-58.7 d				
	distribution		Max. in sediment 6.9%				
	comments						
Adsorption	LOG(K_{OW})		More polar than trinexapac-ethyl				
	K_{OC}		145-609				
	LOG(Kp)		2,78	max			
Analysis	dependent on pH?		yes				
Toxicity	LOQ in water		0.1 µg/l				
	mammals/birds		No information				
	aquatic organisms, chronic						
		fish					
			BCF	–			
		Daphnia					
		algae	A. flos-aquae 96 h NOErC 12.5 mg/l				
		plants	L. gibba 7 d EC50 NOErC 0.3 mg/l				
		other, if tested					
	aquatic organisms, acute				L/EC50	logL/EC50	
		fish	C. carpio and O. mykiss 96 h LD50 > 100 mg/l		>100	2,00	
		Daphnia	D. magna 48 h EC50 > 100 mg/l		>100	2,00	
		algae	A. flos-aquae 96 h EC50 17.5 mg/l		17,5	1,24	
		plants	L. gibba 7 d ErC50 2.5 mg/l		2,5	0,40	
		other, if tested		SD (LogL/EC50)		0,76	>0.5
	ADI	No information					
Calculated EQS values	QS_{water}	2,5	µg/l	AF is 1000, since not enough chronic data			
	$QS_{BalticSea}$	0,25	µg/l				
	MAC-QS	25	µg/l				
	MAC-QSbalticsea	2,5	µg/l				
	QS_{biota}	LogKow <3					
	Overall EQS	2,5	µg/l				
	Overall EQSBalticsea	0,25	µg/l				
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l					

Compound	**Triticonazole**	data source	EFSA conclusion report and DAR					
Degradation	in soil		DT50 151-429 d (22-25°C); DT50 224-707 d (10°C)					
	hydrolytic, in water		pH 5-9: stable					
	in water		DT50 158 d					
	in sediment							
	in water/sediment system		DT50 392 d					
	distribution		Max. in sediment 70 % at d 105					
	comments							
Adsorption								
	LOG(K_{OW})		3.29 ± 0.04 at 20 °C					
	K_{OC}		394-812, mean: 504					
	LOG(Koc)		2,91	max				
	dependent on pH?		No					
Analysis	LOQ in water		GC/MS LOQ 0.05 µg/l; LC/MS 0.1 µg/l*					
Toxicity	mammals/birds, chronic		Dog long term and carc. NOAEL 2.5 mg/kg bw/d = NOEC 100 mg/kg food					
	mammals/birds, acute		Rat and 6 species of bird: LD50 > 2000 mg/kg bw					
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 0.01 mg/l					
			BCF	94				
		Daphnia	D. magna 21 d NOEC 0.092 mg/l					
		algae	S. capricornutum 96 h NOEC ≥1 mg/l; A. flos-aquae 120 h NOEC <2.5 mg/l					
		plants	L. gibba 14 d NOEC 0.33 mg/l					
		other, if tested	C. riparius 26 d NOEC 0.0777 mg/l					
							L/EC50	logL/EC50
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 <3.6 mg/l				3,6	0,56
		Daphnia	D. magna 48 h EC50 9.0 mg/l				9,0	0,95
		algae	S. capricornotum 96 h ErC50 >1 mg/l				1,0	0,00
		plants	L. gibba 14 d EbC50 1.1 mg/l				1,1	0,04
		other, if tested				SD (LogL/EC50)		0,45
	ADI		0.025	mg/kg bw/d				
Calculated EQS values	$AA\text{-}QS_{water}$		1	µg/l				
	$AA\text{-}QS_{BalticSea}$		0,1	µg/l				
	MAC-QS		110	µg/l	AF is 10, since the SD (LogL/EC50) < 0.5			
	$MAC\text{-}QS_{BalticSea}$		11	µg/l				
	QS_{biota}		3,333	mg/kg food	QS_{water}	35,5 µg/l	Value above AA-QS	
					$QS_{BalticSea}$	35,5 µg/l	Value above AA-QS	
	overall EQS		1	µg/l				
	overall $EQS_{BalticSea}$		0,1	µg/l				
	$QS_{sediment}$		0,78	µg/l	QSsed	0,31 mg/kg org C		

Compound	**Tritosulfuron**	data source	DAR and LOEP	
Degradation	in soil		DT50 26 d (20 °C); DT50 42-271 d (10 °C)	
	hydrolytic, in water		DT50: pH 4 39-56 d; pH 7 > 62 d; pH9 7-20 d	
	in water		DT50 32-67 d	
	in sediment			
	in water/sediment system		DT50 36-77 d	
	distribution		Max. in sediment 14% at d 14	
	comments			
Adsorption	LOG(K_{OW})		0.62 pH 7 and -2.38 pH 10	
	K_{OC}		4-11 (mean 7)	
	LOG(Koc)		1,04 max	
	dependent on pH?		No	
Analysis	LOQ in water		LC-MS/MS 0.05 µg/l	
Toxicity	mammals/birds, chronic		Rat repr. NOEC 25 mg kg food (NOAEL 2.4 mg/kg bw/d)	
	mammals/birds, acute		Mallard duck and bobwhite quail LD50 > 2000 mg as/kg bw/d	
	aquatic organisms, chronic	fish	O. mykiss 28 d NOEC 21.5 mg/l	
			BCF –	
		Daphnia	D. magna 21 d NOEC 56 mg/l	
		algae	A. flos-aquae 96 h ErC10 0.06 mg/l	
		plants	L. gibba 7 d NOEC 0.0075 mg/l	
		other, if tested		
	aquatic organisms, acute	fish	O. mykiss 96 h LC50 >100 mg/l	
		Daphnia	D. magna 48 h EC50 >100 mg/l	
		algae	A. flos-aquae 96 h ErC50 >1 mg/l; P. subcapitata 72 h ErC50 1.09 mg/l	
		plants	L. gibba 7 d EC50 0.0476 mg/l	
		other, if tested		
	ADI	0.06	mg/kg bw	
Calculated EQS values	$AA\text{-}QS_{water}$	0,75	µg/l	
	$AA\text{-}QS_{BalticSea}$	0,075	µg/l	
	MAC-QS	4,76	µg/l	AF is 10, since the range in toxicity > 100 X
	$MAC\text{-}QS_{BalticSea}$	0,476	µg/l	
	QS_{biota}	LogKow <3		
	overall EQS	0,75	µg/l	
	overall $EQS_{BalticSea}$	0,075	µg/l	
	$QS_{sediment}$	No chironomus tested, since the chronic toxicity to Daphnia >0,1 mg/l		

Compound	**Zoxamide**	data source	EC review report and DAR						
Degradation	in soil		DT50 2.0-4.2 d, mean 2.8 d (20°C); DT50 7.7 d (10°C)						
	hydrolytic, in water		DT50: pH 4 16 d; pH 7 16 d; pH 9 8 d						
	in water		DT50 3 d						
	in sediment		DT50 0.8-10 d						
	in water/sediment system		DT50 3.8-6 d						
	distribution		Max. in sediment 23 % at d 14						
	comments								
Adsorption									
	LOG(K_{OW})		3.76 ± 0.04						
	K_{OC}		815 -1431 (mean 1224)						
	LOG(Koc)		3,16 max						
	dependent on pH?		No						
Analysis	LOQ in water		GC-ECD 0.05 µg/l; 0.02 µg/l*						
Toxicity	mammals/birds, chronic		Bird and rat repr. NOEC 1000 mg/kg food						
	mammals/birds, acute		C. virginianus LD50 >2000 mg/kg bw						
	aquatic organisms, chronic								
		fish	O. mykiss 95 d ELS NOEC 0.00348 mg/l						
			BCF 136						
		Daphnia	D. magna 21 d NOEC 0.039 mg/l						
		algae	S. capricornutum 120 h NOEC 0.004 mg/l						
		plants	L. gibba 14 d NOEC 0.009 mg/l						
		other, if tested	C. riparius 28 d NOEC 0.45 mg/l						
	aquatic organisms, acute							L/EC50	logL/EC50
		fish	O. mykiss 96 h LC50 0.16 mg/l					0,16	-0,80
		Daphnia	D. magna 48 h EC50 >0.78 mg/l					0,78	-0,11
		algae	S. subspicatus 96 h ErC50 0.018 mg/l					0,018	-1,74
		other, if tested					SD (LogL/EC50)		0,82 >0.5
	ADI	0.5	mg/kg bw/day						
EQS values	AA-QS_{water}	0,35	µg/l						
	AA-$QS_{BalticSea}$	0,035	µg/l						
	MAC-QS	0,180	µg/l	Value set to AA-QSwater					
	MAC-$QS_{BalticSea}$	0,018	µg/l	Value set to AA-QSBalticSea					
	QS_{biota}	33,333	mg/kg food		QS_{water}	0,2	mg/l	Value above AA-QS	
					$QS_{BalticSea}$	0,2	mg/l	Value above AA-QS	
	overall EQS	0,35	µg/l						
	overall $EQS_{BalticSea}$	0,03	µg/l						
	$QS_{sediment}$	4,5	µg/l	QSsed	3,67	mg/kg org C			

DOCUMENTATION PAGE

<table>
<tr><td>Publisher</td><td colspan="2">Finnish Environment Institute (SYKE)</td><td>Date
May 2011</td></tr>
<tr><td>Author(s)</td><td colspan="3">Venla Kontiokari and Leona Mattsoff</td></tr>
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<tr><td>Theme of publication</td><td colspan="3">Environmental protection</td></tr>
<tr><td>Parts of publication/ other project publications</td><td colspan="3"></td></tr>
<tr><td>Abstract</td><td colspan="3">Plant protection products are used in agriculture and forestry to protect crops from weeds, pests and plant diseases. These products are developed to be toxic to target species, but they are often toxic to non-target species also. Since they are spread purposely into the environment, they may also leach to surface waters.

The Water Framework Directive (WFD) of the European Parliament and Council was adopted in 2000. The purpose of this Directive is the protection of inland surface and ground waters. The WFD aims for a reduction of discharges of hazardous substances, and good chemical status should be achieved in aquatic environments. Considering plant protection products, good chemical status is achieved when the concentrations of active substances in surface waters do not exceed the environmental quality standards set for those substances. In this publication EQS values have been set for all active substances on the market in Finland in 2010 based on the EU draft guidance document. In addition, the derived EQS values have been compared to monitoring data available for plant protection products.

Moreover, the environmental quality standards support the implementation of the Framework Directive on Sustainable Use of Pesticides. This directive necessitates that the amount and risks of plant protection products used should be decreased. This is achieved when risk mitigation options are used if the measured concentrations exceed the environmental quality standards.</td></tr>
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<tr><td>Julkaisun osat/ muut saman projektin tuottamat julkaisut</td><td colspan="3"></td></tr>
<tr><td>Tiivistelmä</td><td colspan="3">Kasvinsuojeluaineita käytetään maa- ja metsätaloudessa torjumaan rikkakasveja, tuhoeläimiä ja kasvitauteja. Kasvinsuojeluaineet on kehitetty myrkyllisiksi torjuttaville eliöille, mutta usein ne ovat myrkyllisiä myös muille eliöille. Koska niitä levitetään tarkoituksella ympäristöön, saattaa niitä kulkeutua myös pintavesiin.

EU:ssa annettiin vuonna 2000 Euroopan parlamentin ja neuvoston ns. vesipuitedirektiivi, jonka tarkoituksena on ehkäistä pinta- ja pohjavesien tilan heikkeneminen koko EU:n alueella. Direktiivin mukaan haitallisten aineiden aiheuttamaa pilaantumista on vähennettävä ja vesistöissä tulee saavuttaa hyvä kemiallinen tila. Kasvinsuojeluaineiden osalta tämä tila saavutetaan siten, että kasvinsuojeluaineiden pitoisuudet vesistössä eivät ylitä niille asetettuja ympäristönlaatunormeja. Tässä julkaisussa on asetettu alustavat ympäristönlaatunormit kaikille Suomessa 2010 markkinoilla oleville tehoaineille EU:ssa laaditun ohjeluonnoksen mukaan. Lisäksi ympäristönlaatunormeja on verrattu Suomessa seurannassa mitattuihin pitoisuuksiin.

Ympäristönlaatunormien asettaminen palvelee myös torjunta-aineista annettua ns. kestävän käytön puitedirektiiviä, joka edellyttää myös kasvinsuojeluaineiden käytöstä aiheutuvien riskien vähentämistä. Tähän päästään monitoroinnilla ja riskinvähennystoimilla, mikäli kasvinsuojeluaineiden pitoisuudet ylittävät asetetut ympäristönlaatunormit.</td></tr>
<tr><td>Asiasanat</td><td colspan="3">ympäristönlaatunormi, kasvinsuojeluaineet, torjunta-aineet, kemikaalit, vesistökuormitus, haitallisten aineiden seuranta, monitorointi</td></tr>
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PRESENTATIONSBLAD

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<tr><td>Utgivare</td><td colspan="3">Finlands miljöcentral (SYKE)</td><td>Datum
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<tr><td>Publikationens delar/ andra publikationer inom samma projekt</td><td colspan="4"></td></tr>
<tr><td>Sammandrag</td><td colspan="4">Växtskyddsmedel används i jord- och skogsbruket för att bekämpa ogräs, skadedjur och växtsjukdomar. Växtskyddsmedlen har utvecklats så att de är giftiga för de organismer som ska bekämpas, men ofta är de giftiga också för andra organismer. Eftersom de sprids avsiktligt i miljön kan de transporteras också ut i ytvattnen.

Europaparlamentets och rådets ramdirektiv för vatten antogs år 2000 i EU. Dess syfte är att förhindra att yt- och grundvattnens status inom EU försämras. Enligt direktivet ska förorening orsakad av skadliga ämnen minskas och en god kemisk status uppnås i vattendragen. Beträffande växtskyddsmedel uppnås denna status så att halterna växtskyddsmedel i vattendraget inte överstiger de miljökvalitetsnormer som uppställts för dem. I denna publikation presenteras förslag till miljökvalitetsnormer för alla verksamma ämnen som fanns på marknaden 2010 enligt det utkast till anvisning som uppgjorts i EU. Därtill har miljökvalitetsnormerna jämförts med de halter som uppmätts vid uppföljning i Finland.

Uppställningen av miljökvalitetsnormer tjänar också ramdirektivet för hållbar användning av bekämpningsmedel som förutsätter att riskerna från användningen av växtskyddsmedel minskas. Detta mål nås genom uppföljning och åtgärder för att minska riskerna ifall halterna växtskyddsmedel överstiger de uppställda miljökvalitetsnormerna.</td></tr>
<tr><td>Nyckelord</td><td colspan="4">miljökvalitetsnorm, växtskyddsmedel, bekämplingsmedel, kemikalier, vattendrag, uppföljning av skadliga ämnen, monitoring</td></tr>
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<tr><td>Tryckeri/tryckningsort och -år</td><td colspan="4"></td></tr>
</table>

In this publication the principles of calculating environmental quality standards (EQS) for all active substances of plant protection products on the market in Finland in 2010 have been presented. Plant protection products are used in agriculture and forestry to protect crops from weeds, pests and plant diseases. These substances have been selected since they are developed to be toxic and are intentionally released into the environment.

Environmental quality standards (EQSs) for all active substances are set as part of the implementation of the Water Framework Directive (WFD). The purpose of this Directive is the protection of inland surface and ground waters. Considering plant protection products, good chemical status is achieved when the concentrations of active substances in surface waters do not exceed the EQS values set for those substances.

Moreover, the environmental quality standards support the implementation of the Framework Directive on Sustainable Use of Pesticides. This directive necessitates that the amount and risks of plant protection products used should be decreased and specific measures should be taken to protect among others surface waters. This target is achieved in surface waters when risk mitigation options are used if the measured concentrations exceed the environmental quality standards.

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PROPOSAL OF ENVIRONMENTAL QUALITY STANDARDS FOR PLANT PROTECTION PRODUCTS
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