

Summary of Public Comments Received on the Draft Screening Assessment Report for Biphenyl (Chemical Abstracts Service Registry Number 92-52-4)

Comments on the draft Screening Assessment report (SAR) for biphenyl were provided by the countries listed below, via the Organisation for Economic Cooperation and Development (OECD) Cooperative Chemicals Assessment Programme for the 4th Meeting of Cooperative Chemicals Assessment Programme (CoCAM4) in April 2013 by the following organizations and countries:

- Denmark
- Netherlands
- OECD Secretariat
- Switzerland
- United Kingdom
- United States

A summary of comments and responses is included below, organized by topic:

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Topic	Comment	Response
Bioaccumulation	The indicated bioconcentration factor (BCF) of 2835 from Meador et al. (1995) is actually a bioaccumulation factor (BAF).	Agreed, the value of 2835 is actually a BAF. However, the study in which this values is reported, Meador et al. (1995), was found to have low reliability and therefore the value of 2835 has been removed.
Bioaccumulation	The Klimisch code of 3 for the Freitag study (1982) indicates that the study is unreliable.	The Freitag study has been removed from the SAR because of its low reliability.
Bioaccumulation	Additional BCF values from the European Chemicals Agency (ECHA) website should be added to the Screening Assessment Report (SAR).	Additional BCF values from the ECHA website have been added to the SAR. These include a BCF of 1900 from a 1974 study with rainbow trout (<i>Oncorhynchus mykiss</i>) and a BCF of 2422 from a 1989 study with eastern oyster (<i>Crassostrea virginica</i>).
Bioaccumulation	Based on certain classification schemes, the BCF	The SAR has been revised to indicate that biphenyl has some potential to bioaccumulate

	values from a number of studies do not support the conclusion that biphenyl has low bioaccumulation potential. The conclusion should be revised to state that biphenyl has moderate bioaccumulation potential.	in organisms.
Environmental Fate	The input parameters used for the Level III fugacity modelling should be included in the SAR. When using the phys-chem property data from the SAR, slightly different results were obtained.	The Level III fugacity modelling was re-run using revised parameters, and the results have been updated in the SAR. The fugacity modelling input parameters also have been added to the SAR.
Environmental Fate	The results of the mesocosm study in the screening assessment somewhat contradict the Level III fugacity modelling for surface water releases. More discussion of this in the screening assessment is warranted, and the fugacity modelling and Sewage Treatment Plant (STP) statement need rationalizing.	The Level III fugacity modelling was re-done using a half-life in water of 17 days. The half-life of 17 days was estimated using Catalogic 2013 (successor to the Catobol model), which used the experimental biological oxygen demand (BOD) of 66% to derive this half-life. The proportion of biphenyl deposited to sediment following surface water release (~11%) is now more consistent with the results of the mesocosm study.
Environmental Fate	The conclusion about biodegradability should clearly distinguish between persistence and ready biodegradability. Additional information about biodegradability test results from the Concise International Chemical Assessment Documents (CICAD) and the ECHA website also should be added to the SAR.	Ready and inherent biodegradability test results have been identified from the ECHA website and added to the SAR. This will clarify and strengthen the conclusion that biphenyl is readily and inherently biodegradable. The OECD 301C study summarized in the CICAD appears to be the same as the key biodegradation study on the ECHA website.
Environmental Fate	It should be indicated whether the half-lives in water (ranging up to 2.8 months) are based on test data or quantitative structure-activity relationship (QSAR) models.	Clarification has been added to the SAR to indicate which half-lives are based on experimental data and which are based on modelled data.
Environmental Fate	Please note that the overall conclusion from BLOWIN (v. 4.10) is “not readily biodegradable.”	The methodology for interpreting modelled persistence results has been refined and indicates that biphenyl is readily biodegradable. The Catalogic 2013 model was run, and all model results support the conclusion that biphenyl is readily biodegradable in water.
Environmental Fate	Additional detail should be provided about the medium and mode of degradation.	Detail on the medium and mode of degradation has been added to the SAR.
Environmental Fate	There is a discrepancy between the conclusion that	The characteristic travel distance (CTD) for biphenyl has been recalculated using two

	biphenyl has moderate potential for long-range transport in air and the statement that biphenyl degrades rapidly in the atmosphere.	different approaches, with consistent results. A CTD of 391 km was calculated using the TaPL3 model (2000) and a CTD of 394 km was calculated using the OECD POPs Tool (Scheringer 2006). These results mean that biphenyl is considered to have a low potential for long-range transport in air (<i>i.e.</i> CTD < 700 km). This is in agreement with the statement that it degrades rapidly in atmosphere, and the SAR has been revised accordingly.
Ecotoxicity	Provide additional detail about the predicted toxicity value for the earthworm.	Additional information about the predicted toxicity value for the earthworm has been added to the SAR.
Ecotoxicity	Details about the MATC value (0.23 mg/L) for the 24 hour <i>Daphnia</i> study (Gersich) should be added. Rather than using the Maximum Allowable Toxic Concentration (MATC) please use the No Observed Effects Concentration (NOEC) (0.17 mg/L) from the 21-day <i>Daphnia magna</i> study (Gersich <i>et al.</i> 1989) as the value for chronic toxicity. Alternatively, use the lower value for (NOEC = 40 µg/L) from the Gersich study to characterize the aquatic toxicity of biphenyl. Consider replacing the 24-hour LC ₅₀ of 1.3 mg/L for <i>Daphnia magna</i> with the 48-hour LC ₅₀ of 0.36 mg/L.	Details about the MATC value are not required in the SAR because the MATC value was not chosen as the CTV. The chronic (21-day) NOEC and LOEC values, as well as the 48 hour LC ₅₀ of 0.36 mg/L from the <i>Daphnia</i> study by Gersich <i>et al.</i> (1989), have been added to the SAR. The CTV chosen for characterizing effects to aquatic organisms is now the lowest acute value (48-hour LC ₅₀ of 0.36 mg/L for <i>Daphnia</i>);.
Ecotoxicity	Items 10, 16, and 29 in the robust study summary (RSS) for the Gersich study need to be revised. Consideration also should be given to adding the Klimisch reliability scores to the data.	Revisions have been made to the robust study summary (RSS) for the Gersich <i>et al.</i> (1989) study. RSSs, which document the reliability of studies, are now part of the supporting documentation for the SAR.
Ecotoxicity	Consider adding data from the ECHA website about the 48-hour <i>Daphnia magna</i> , and chronic fish endpoints. Consider expanding the summary of the available data for aquatic toxicity.	The 48-hour LC ₅₀ for <i>Daphnia</i> has been added to the SAR (based on Gersich <i>et al.</i> (1989)). The 87-day NOEC and LOEC for Rainbow trout from the 1988 study indicated as reliable (with restrictions) on the ECHA website also has been added.

Ecotoxicity	Remove the 3-hour EC50 of 1.28 mg/L for reduction in photosynthesis in algae.	The indicated study has been removed from the SAR because the exposure period is unacceptably low.
Ecotoxicity	Provide additional information about the <i>Lactuca sativa</i> 7-day study.	The SAR has been revised to state that the CTV selected for soil organisms is the lettuce (<i>Lactuca sativa</i>) 7-day EC50 of 54 mg/kg soil, wet weight. For this value, the measure of growth was biomass (wet weight). This information has been added to the SAR.
Ecotoxicity	Add the scientific names for all test organisms.	Scientific names have been added to the SAR (where necessary).
Ecotoxicity	Confirm the reliability of the Donkin <i>et al.</i> (1989) study on <i>Mytilus edulis</i> (blue mussel).	<p>The Donkin <i>et al.</i> (1989) study was found to have low reliability. Additionally, the blue mussel EC₅₀ value from the Donkin <i>et al.</i> (1989) study is no longer considered appropriate for use as a critical toxicity value (CTV) in the risk characterization for sediment-dwelling organisms.</p> <p>Reference to the BCF from the Donkin <i>et al.</i> (1989) study has been removed from the discussion in the SAR concerning bioaccumulation potential.</p>