

Supplementary guidance for the
completing of
**Harmonised Offshore Chemical
Notification Format (HOCNF) 2000**
for Norwegian sector

**Harmonised Offshore Chemical Notification Format
OSPAR Recommendation 2000/5**

Version: May 2007

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Introduction

This guidance document is meant to address the differences between the "OSPAR Guidelines for Completing the Harmonised Offshore Chemical Notification Format (HOCNF) (2005-13)" and the "Norwegian regulations relating to conduct of activities in the petroleum activities (the Activities Regulations, 2006), section 56a, Ecotoxicological testing of chemicals".

When necessary, and in order to indicate the differences, quotations from both the "OSPAR guidelines" and "the Activities Regulations" have been stated.

Abbreviations / explanations

SFT: Norwegian Pollution Control Authority.

OSPAR: Oslo-Paris Commission for the protection of the Marine Environment of the North-East Atlantic.

OECD: Organisation for Economic Co-operation and Development.

PLONOR list: OSPAR List of Substances/Preparations Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment.

Substance: The OSPAR definition of a substance is: "a chemical element or compound in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition".

Log P_{ow}: The logarithm to the ratio of a chemical's solubility in octanol in proportion to water.

EC50: The value quoted on the algae toxicity test. The concentration of a chemical substance that will effect the growth rate of 50% of the algae.

LC50: The value quoted on Crustacean, Fish and Sediment Reworker test. The concentration of a chemical substance that will kill 50% of the test animals.

BOD28: The value quoted on the biodegradation test. Refers to the percentage biodegradation of a chemical substance after 28 days.

BCF: Bioconcentration factor.

SDS: Safety Data Sheet.

Part 1: General Information

1.1 Trade name

When changing a product's composition, it is requested that a new Trade name is given. In this way it will be easier for both the Operating Oil Companies and the Norwegian Pollution Control Authorities to judge a product's environmental properties.

1.2 Supplier and background information

Mandatory.

1.3 Use

State the product's Group, Function and Dose rate.

1.4 Discharge

The current Operating Oil Company is responsible for discharge applications to SFT,

1.5 Fate

As per *OSPAR § 1.5 Fate*.

1.6 Composition

OSPAR § 1.6, 21: *In all applications concerning chemicals used offshore, the names of all deliberately added substances within a preparation shall be reported to the competent national authorities. Sufficient information must be available to operators to allow them to properly assess the chemicals they use.*

OSPAR § 1.6, 23: *The full chemical composition must be given when submitting the form to government bodies. The complete and precise composition of the substance or preparation should be reported, including each "active" substance, "inert" substance, solvent and additive substance and their proportions, using CAS numbers and recognised chemical formulae or recognised chemical names for all substances.*

For Norway: In all applications concerning chemicals used offshore, the names of all deliberately added substances within a preparation shall be reported to the current operating oil company.

Substances which are claimed to be on the PLONOR list must be stated with CAS number. This CAS number must match the CAS number given on the PLONOR list. If available, CAS number should also be provided for all classified substances, ref "FOR 1997-12-19 nr 1323 Norwegian instructions for the compilation and distribution of SDS on hazardous chemicals".

Non hazard labelled substances may be listed only with the chemical functional group of the substance. These functional groups must describe the substance in such a way that the Operating Oil Company is able to perform an environmental evaluation. In case the supplier chooses to omit the exact chemical name, these must be documented internally, and be handed SFT when asked for.

Molecular weight should be stated as exactly as possible, but may be listed as an interval or as </> (greater / less).

Some products and substances change their chemical structure and/or performance during usage (e.g. because of high temperature, pressure or reaction with other chemicals). Any such change must be fully explained in the comments section.

Concentration intervals (in percentage) may be used instead of exact concentration. They should be listed according to "Norwegian instructions for the compilation and distribution of SDS on hazardous chemicals":

0 - 0,1 0 - 1 1 - 5 5 - 10 10 - 30 30 - 60 60 - 100

If desired, the concentration ranges as given in the OSPAR HOCNF guidelines may be used. Shorter intervals are also accepted.

1.7 Hazardous substances

As for *OSPAR § 1.7 Contents*.

1.8 Hazard labelling

The substances' individual hazard labelling, and the R- and S- sentences must be stated either in the HOCNF or in an attached SDS sheet.

An attached SDS must be according to "Norwegian instructions for the compilation and distribution of SDS on hazardous chemicals".

1.9 General physical properties

Section 1.9 "General physical properties" must be fulfilled.

1.10 Specific physical properties

Section 1.10 "specific physical properties" must be fulfilled. The product's density must be stated, either exactly or, if not applicable, in an interval.

Surface active substances must be given with the "fraction released / discharge factor".

Documentation on other fraction released data for surfactants may also be entered here. "Others" (with no information) are given a "discharge factor" = 1.

Part 2: Ecotoxicological Information

OSPAR Part 2, 31: *Ecotoxicological information can be mandatory, conditional or optional. If the offshore chemical is on the PLONOR List or all the relevant ecotoxicological information has already been submitted to the authority, Part 2 of Appendix 1 to OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF) need not be completed.*

For Norway: It is not sufficient to submit the ecotoxicological information to the Norwegian authorities instead of to the current Operating Oil Company, who is responsible for the HOCNF information towards SFT. The operators need to have access to the HOCNF, completed as explained in this guidance document.

All ecotoxicological tests must be performed on deliberately added substances. Test report number, methodology and test results must be registered. The GLP approved laboratory must be given with full address.

Norwegian Activities Regulations: *For products on OSPAR's PLONOR list, HOCNF Part 1 and Part 3 must be completed.*

2.1.1 Partitioning and bioaccumulation potential (LogP_{ow})

OSPAR §2.1 34: Log Pow is used for two purposes. In the pre-screening (OSPAR Recommendation 2000/4) to advise on bioaccumulation potential and in the CHARM model to estimate how a substance partitions between oil and water with the aim of predicting the environmental concentration (PEC). As a consequence of this dual use of log Pow data, whenever a range of log Pow values is quoted in the report, the maximum and minimum value should be stated in the HOCNF. The maximum values will be used for estimating bioaccumulation potential and the minimum as an indication of the potential of the substance to partition into the water phase.

Norwegian Activities Regulations: Organic substances shall be tested according to OECD 117 "Partition Coefficient (n-octanol/water), High Performance Liquid Chromatography (HPLC) Method" or OECD 107 "Partition Coefficient (n-octanol/water): Shake Flask Method". For substances where standardised tests are not applicable, as for surfactants, a calculation or scientific evaluation of the bioaccumulation potential shall be performed. Scientific evaluations shall be documented and preferably be performed by an independent party.

Substances with molecular weight > 700 do not need to be tested for bioaccumulation potential and are not anticipated to bioaccumulate. For substances which do not need log P_{ow} information, one of the following conclusions stated in the comments section:

- "The substance is inorganic and bioaccumulation data are not relevant".
- "The substance is PLONOR listed and bioaccumulation data are not required".
- "The substance has a MW > 700, and is not anticipated to bioaccumulate".
- "The substance already has a BCF-test, and logP_{ow} data are not required".

If the bioaccumulation potential is known to be very high, a value of log P_{ow} > 5 may be stated without further documentation.

When using the HPLC- method (OECD 117), if the span of peaks is greater than 2, then an alternate method such as OECD 107 should be considered. When using OECD 117, all peaks with an area > 5% should be stated with the corresponding log P_{ow} value and %-area under peak. The log P_{ow} for the substance is taken to be the highest log P_{ow} peak with area > 5%. An example is given below. In this case the log P_{ow} for the substance is 5,2.

| Peak nr. | Log P _{ow} | Area |
|----------|---------------------|------|
| 1 | 1,5 | 75,0 |
| 2 | 2,9 | 15,0 |
| 3 | 5,2 | 5,1 |
| 4 | 5,9 | 4,9 |

Weighted average Log Pow should be calculated by adding all peaks multiplied with corresponding areas. In the example above, Weighted average is: Log Pow=2,1

To perform oil/water distribution analysis using the HPLC- method (OECD 117), all peaks with an area above 5% should be stated, and with the corresponding log P_{ow} value and %-area under the peak. The area percentage is normalised to 100%. Weighted average log P_{ow} is calculated as a weighted average of the P_{ow}-values (SUM of P_{ow} x areal/100)^(#). Log P_{ow} is calculated as log^(#). An example is given below:

| Peak nr. | Log P _{ow} ⁽¹⁾ | Area ⁽²⁾ | %-area ⁽³⁾ | Normalised area ⁽⁴⁾ | P _{ow} = 10 ^{logP_{ow}} ⁽⁵⁾ | Average P _{ow} : (4)* (5)/100 |
|----------|------------------------------------|---------------------|-----------------------|-----------------------------------|---|---|
| 1 | 0.8 | 145000 | 34.0 | 35.03 | 6.31 | 2.21 |
| 2 | 1.3 | 268888 | 63.1 | 64.97 | 19.95 | 12.96 |
| 3 | 3.2 | 12450 | 2.9 | | N/A | |
| Sum | | 426338 | 100.0 | 100.00 | | 15.17 |

Note: If applicable, the values typed in **bold** must be entered into the logP_{ow} table in the HOCNF.

$$\text{Weighted average log P}_{ow} = \text{log } 15.17 = 1.2$$

2.1.2 Bioconcentration factor (BCF)

When a BCF test has been used, the report should conclude whether the substance has a potential for bioaccumulation or not.

2.2 Biodegradability

OSPAR § 2.2:

42. ... Authorities may accept data from freshwater tests according to OECD Guidelines for Testing of Chemicals, 1992, 301 A-F if these are already available.

44. Aerobic inherent biodegradability may be required by authorities. The standard test methods for inherent biodegradability are: OECD Guidelines for testing of chemicals, 1981 302 A-C.

46. Biodegradability tests on poorly soluble materials should follow the recommendations set out in ECETOC Technical Report No. 20 (1986) Annex III of OECD 1992 301 and ISO Guidance Document ISO 10634.

47. For substances or substances in preparations which qualify for a sediment reworker toxicity test, an anaerobic biodegradation test may be conducted in addition to aerobic tests. If such a test is not conducted, the substance will be assumed to be non-biodegradable in anaerobic conditions.

48. Anaerobic biodegradability testing should be carried out following the recommendations set out in e.g. the draft OECD guideline: "Aerobic and anaerobic transformation in aquatic sediment systems", OECD 308, OECD 2000. Data from anaerobic screening tests conducted with digested sewage sludge (e.g. ISO 11734) cannot be used for predicting the biodegradation potential in sediments. Anaerobic biodegradability data are not relevant for water soluble materials which do not adsorb to surfaces.

49. Authorities may require additional biodegradation data, e.g. seawater simulation studies, seabed survey.

Norwegian Activities Regulations: Chemicals that consist of several substances shall be tested for the individual organic substance's biodegradability. The substances shall preferably be tested in accordance with the seawater test OECD 306 "Biodegradability in Seawater". If this test is not applicable for the test substance, one of the following seawater tests shall be performed:

- Marine CO₂ evolution test (mod. Sturm), modified OECD 301 B
- Marine BODIS test (for uløselige stoff) modifisert ISO/TC 147/SC 5 N141
- Marine CO₂ headspace test, modifisert ISO/TC 147/SC 5/WG 4 N182

For substances known to be toxic to micro organisms (e.g. biocides), SFT must be contacted if alternative tests are planned to be used.

For substances with moderate biodegradability (equivalent to BOD₂₈ from 20 to 60%) also the properties of the degradation products shall be evaluated.

If alternative test methods (i.e fresh water tests) for finding relevant biodegradation data are planned to be used, this has to be clarified with SFT, and relevant information supporting the biodegradation data should be sent directly to SFT.

Substances with Norwegian environmental category "yellow" and which have moderate biodegradability ($20\% \leq \text{BOD}_{28} < 60\%$) must be further evaluated. The hazardous properties of the degradation products of these substances must be assessed and one of the following three Y-phrases must be stated:

Y1: The chemical is expected to biodegrade completely.

Y2: The chemical is expected to biodegrade to products which are not environmentally hazardous. State likely biodegradation endpoint with documented properties

Y3: The chemical is expected to biodegrade to products which may be environmentally hazardous.

- In case of insufficient knowledge of the breakdown products, these will need to be categorized as potentially environmental hazardous based on the precaution principal.
- Environmentally hazardous is defined by PBT, CMR, vPvB and the intentions in §56 b (black), but test results are not required!

See Appendix 1 "SKIM recommendation for assessment of degradation products".

Biodegradation data is not required for substances in one or more of the following categories:

- "The substance is inorganic and biodegradation data are not relevant".
- "The substance is PLONOR listed and biodegradation data are not required".

A note should be made in the comments section of 2.2.1 indicating which phrase applies.

If the substance is known to be non-biodegradable, a value of BOD₂₈ = 0% may be stated, without further documentation.

2.3 Tainting

As per OSPAR § 2.3 Tainting.

2.4 Aquatic toxicity

Norwegian Activities Regulations: *The fish test must be applied to all components. This include also toxicity for components that was on the marked prior to 01.01.2002. Fish test is **not** required if the substance is:*

- *Inorganic and has a toxicity to algae and / or crustacean of EC/LC50 \leq 1 mg/l.*
- *Organic and has a toxicity to algae and/or crustacean of EC/LC50 \leq 10 mg/l.*

OSPAR: § 2.4 52: *...A comparative suite of alternative marine or freshwater species are also acceptable if tests are conducted to recognised protocols.*

OSPAR: § 2.4 55: *Where freshwater data is provided, tests must be conducted on representative algae, crustacean and fish, and conducted to recognised International standards. Data must be generated by laboratories working to Good Laboratory Practice or equivalent internationally recognised standards and a full reference must be given for the source of the data. In the case of published data, a copy of the original paper must also be provided detailing a full description of the test procedures.*

Norwegian Activities Regulations: *In case results from alternative toxicity tests (ref OSPAR guidelines 52 a.b.c., 53) are desired, documentation must be presented to- and be clarified with SFT.*

State whether the EC/LC50 value was based on nominal (n) or measured (m) exposure concentration or on the water accommodated fraction (WAF).

For some simple acids and bases, toxicity testing is not relevant. This should be explained in the comments section.

2.5 Adsorbability

As per OSPAR § 2.5 Adsorbability.

2.6 Mammalian toxicity

As per OSPAR § 2.6 Mammalian toxicity.

Part 3: Confirmation statement

The supplier must sign the last page of the HOCNF to confirm the data.