

Form for submission of information specified in Annex F of the Stockholm Convention pursuant to Article 8 of the Convention

Chemical name (as used by the POPs Review Committee)	Pentadecafluorooctanoic acid (CAS No: 335-67-1, PFOA, perfluorooctanoic acid), its salts and PFOA-related Compounds (chemical identity according to UNEP/POPS/POPRC.12/11/Add.2)
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Explanatory note:

1. This chemical is undergoing a risk management evaluation. It has already satisfied the screening criteria set out in paragraph 4 (a) of Article 8 of the Convention. A risk profile has also been completed for this chemical in accordance with paragraph 6 of Article 8 and with Annex E to the Convention.

Introductory information	
Name of the submitting Party/observer	Norwegian Environment Agency
Contact details (name, telephone, e-mail) of the submitting Party/observer	Trine Celius Ph. +47 46743086 Trine.celius@miljodir.no
Date of submission	09.12.2016

Additional Annex E information	
(i) Production data, including quantity and location	0
(ii) Uses	-
(iii) Releases, such as discharges, losses and emissions	<p>Long range transport seems to be the main source of PFOA in the Norwegian environment. "Survey of national sources, PFOA in Norway". http://www.miljodirektoratet.no/old/klif/publikasjoner/2354/ta2354.pdf</p> <p>Potential PFOA Precursors: Literature study and theoretical assessment of abiotic degradation pathways leading to PFOA. M-231/2014 http://www.miljodirektoratet.no/Documents/publikasjoner/M231/M231.pdf</p> <p>PFOA isomers salts and precursors- Literature study and evaluation of physico chemical properties (TA-2944/2012): http://www.miljodirektoratet.no/old/klif/publikasjoner/2944/ta2944.pdf</p> <p>Investigation of outdoor textiles with respect to determine the content of ionic perfluorinated substances (PFASs) http://www.miljodirektoratet.no/Documents/publikasjoner/M306/M306.pdf</p> <p>Analysis of per- and polyfluorinated compounds in articles: http://www.miljodirektoratet.no/Documents/publikasjoner/M360/M360.pdf</p> <p>Forest soil were able to degrade precursors to PFOA: Dasu K, Lee LS. Aerobic biodegradation of toluene-2,4-di(8:2 fluorotelomer urethane) and hexamethylene-1,6-di(8:2 fluorotelomer urethane) monomers in soils. Chemosphere. 2016 Feb;144:2482-8. doi: 10.1016/j.chemosphere.2015.11.021.</p>

Explanatory note:

2. This information was requested for preparation of the risk profile in accordance with Annex E of the Convention. Please provide any additional or updated information.

(a) Efficacy and efficiency of possible control measures in meeting risk reduction goals (provide summary information and relevant references):	
(i) Describe possible control measures	See the latest draft of the PFOA REACH restriction proposal written by Germany and Norway.
(ii) Technical feasibility	
(iii) Costs, including environmental and health costs	

Explanatory note:

3. "Risk reduction goals" refers to targets or goals to reduce or eliminate releases from intentional production and use, unintentional production, stockpiles and wastes and to reduce or avoid risks associated with long-range environment transport.

4. Possible control measures could include the following:

- (a) Prohibition or restriction of production, use, import and export;
- (b) Control of discharges or emissions;
- (c) Replacement of the chemical by alternatives;
- (d) Termination of processes which could lead to unintentional release of the chemical;
- (e) Clean-up of contaminated sites;
- (f) Environmentally sound management of obsolete stockpiles;
- (g) Prohibition of reuse and recycling of wastes or stockpiles;
- (h) Establishment of exposure limits in the workplace;
- (i) Establishment of maximum residue limits in water, soil, sediment or food.

5. The following factors may influence the efficacy and efficiency of possible control measures:

- (a) Legal, administrative, and enforcement measures in place including adequately trained personnel;
- (b) Monitoring measures in place including of suitable laboratory and monitoring capability;
- (c) Risk communication system and public participation;
- (d) Accessibility of alternative chemicals or processes;
- (e) Accessibility of safe installations and technology to eliminate stockpiles.

6. Technical feasibility refers to whether a control measure already exists or is expected to be developed in the foreseeable future and possible challenges to its implementation. The following factors may be considered:

- (a) What measures would be needed to effectively prohibit or restrict production and use;
- (b) Chemical or non-chemical alternatives which are already in use or which could be phased-in;
- (c) National standards for best available techniques and best environmental practices (BAT/BEP) and inventory of installations meeting the BAT/BEP standards;
- (d) Projects in progress involving elimination of stockpiles and clean-up of contaminated sites.

7. If relevant, provide information on uses for which there may be no suitable alternative or for which the analysis of social and economic factors justifies the inclusion of an exemption to any control measure adopted by the Conference of the Parties. Identify critical uses by detailing the negative impact on society that would result if no exemption is permitted. Explain why the exemption is technically or scientifically necessary and why potential alternatives are not technically or scientifically viable. In addition, provide a list of sources taken into account in arriving at the conclusion that no alternatives exist for a particular use.

8. Where relevant and possible costs should be expressed in United States dollars per year.

(b) Alternatives (products and processes) (provide summary information and relevant references):	
(i) Describe alternatives	
(ii) Technical feasibility	
(iii) Costs, including environmental and health costs	
(iv) Efficacy	
(v) Risk	
(vi) Availability	
(vii) Accessibility	

Explanatory note:

9. Alternatives could include chemical and non-chemical alternatives such as a substitute chemical, material, product, system, production process or strategy for a specified end use of the chemical under consideration. Provide a brief description of any alternative product or process and, if appropriate, the sectors, uses or users for which it would be relevant. If several alternatives can be envisaged for the chemical under consideration, including non-chemical alternatives, provide information under this section for each alternative.

10. Technical feasibility refers to whether an alternative technology exists and is applicable or is expected to be developed in the foreseeable future. Specify for each proposed alternative whether it has actually been implemented, whether it has only reached the trial stage or whether it is just a proposal. If an alternative has not been tried or tested, information on projected impacts may also be useful.

11. Evaluation of costs should include environmental and health costs.

12. Evaluation of efficacy should include any information on performance, benefits, costs and limitations of potential alternatives.

13. Evaluation of risk should include any information on whether a proposed alternative has been thoroughly tested or evaluated in order to avoid inadvertently increasing risks to human health and the environment. It should also include any information on potential risks associated with untested alternatives and any increased risk over the life-cycle of alternatives, including manufacture, distribution, use, maintenance and disposal.

14. Availability refers to whether an alternative is on the market and ready for immediate use.

15. Accessibility refers to the extent to which geographic, legal or other limiting factors affect whether an alternative can be used. Information or comments on improving the availability and accessibility of alternatives may also be useful.

16. Specify if the information provided is connected to the specific needs and circumstances of developing countries.

(c) Positive and/or negative impacts on society of implementing possible control measures (provide summary information and relevant references):	
(i) Health, including public, environmental and occupational health	Control measures will have positive impacts on human health since we are still exposed to PFAS in our everyday environment. PFPA and precursors was measured in indoor dust in Norwegian homes. See recent report: "PFAS in house dust". http://www.miljodirektoratet.no/Documents/publikasjoner/M430/M430.pdf
(ii) Agriculture, including aquaculture and forestry	
(iii) Biota (biodiversity)	
(iv) Economic aspects	

(v) Movement towards sustainable development	
(vi) Social costs	

Explanatory note:

17. Social and economic considerations could include:

(a) Information on the impact, cost and benefits to the local, national and regional economy, including the manufacturing sector and industrial and other users (e.g., capital costs and benefits associated with the transition to the alternatives), and impacts on agriculture and forestry;

(b) Information on the impact on the wider society associated with the transition to alternatives, including the negative and positive impacts on public, environmental and occupational health. Consideration should also be given to the positive and negative impacts on the natural environment and biodiversity;

(c) Information on the costs and benefits associated with environmentally sound management of waste and stockpiles of the chemical under consideration and the clean-up of contaminated sites.

18. Information should be provided on how control measures fit within national sustainable development strategies and plans. Developing countries, countries with economies in transition and small island developing States should describe their need for technical assistance to implement certain control measures.

(d) Waste and disposal implications (in particular, obsolete stocks of pesticides and clean-up of contaminated sites) (provide summary information and relevant references):	
(i) Technical feasibility	Ongoing remediation of PFAS contaminated soil due to use of AFFF at airports and fire training areas
(ii) Costs	

Explanatory note:

19. The information provided on technical feasibility and costs should take the local context into account. This is particularly important for developing countries, countries with economies in transition, and small island developing States that require technical and financial assistance.

(e) Access to information and public education (provide summary information and relevant references):
http://www.miljostatus.no/

Explanatory note:

20. Please provide details on access to information and public education with respect to both control measures and alternatives.

(f) Status of control and monitoring capacity (provide summary information and relevant references):
PFOA are included in our monitoring programs.

Explanatory note:

21. With regard to control capacity, the information required is on legislative and institutional frameworks for the chemical under consideration and their enforcement.

22. With regard to monitoring capacity, the information required is on the technical and institutional infrastructure for the environmental monitoring and bio-monitoring of the chemical under consideration. Please provide information on monitoring work relating to the Convention's priority matrices (ambient air, maternal milk, human blood) and other health or environmental matrices (water, soil, sediment, food, aquatic and telluric fauna, migratory birds, etc.).

(g) Any national or regional control actions already taken, including information on alternatives, and other relevant risk management information:

The Norwegian Environment Agency published an amendment to the consumer products regulation in 2014 banning the use of PFOA in consumer products and textiles. This has a transitional period allowing the import and sale of products before phase out. In detail the following apply:

2-32. Consumer products containing perfluorooctanoic acid

From 1 June 2014, it is prohibited to manufacture, import, export and make available on the market textiles, carpets and other coated consumer products that contain perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA (CAS nr. 335-67-1, 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 376-27-2, 3108-24-5), when the content of the substance in the product's individual parts is greater than or equal to 1 µg/m². Individual parts comprise the materials of which the product is manufactured, and the product's individual components.

From 1 June 2014, it is prohibited to manufacture, import, export and make available on the market consumer products that contain perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA (CAS nr. 335-67-1, 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 376-27-2, 3108-24-5), when the content of the substance in the product's individual parts is greater than or equal to 0.1 weight percent.

The prohibitions on manufacture and export will not apply until 1 January 2016 to:

- a) adhesives, foil or tape in semiconductors,
- b) photographic coatings for film, paper or printing plate.

The prohibitions on import and sale will not apply until 1 January 2018 to products for which it can be documented that the manufacture took place prior to the prohibitions in paragraphs 1 to 2, cf. paragraph 3 came into force.

The above prohibitions do not apply to food packaging, food contact materials and medical devices. The prohibitions shall not apply to spare parts for consumer products made available for sale prior to 1 June 2014.

For consumer products, this section shall prevail over other provisions of this regulation.

Explanatory note:

23. Actions or measures taken could include prohibitions, phase-outs, restrictions, clean-up of contaminated sites, waste disposal, economic incentives and other initiatives that are not legally binding.

24. Information could include details on whether these control actions have been cost-effective in providing the desired benefits and have had a measurable impact on reducing levels of the chemical in the environment and have contributed to risk reduction.

(h) Other relevant information for the risk management evaluation:**Explanatory note:**

25. Please provide any other relevant information for the risk management evaluation.

I. Other information requested by the Committee:

Explanatory note:

26. The Committee may identify specific information required for the process of preparing a risk management evaluation in addition to Annex F information. Please provide any such information that you may have as indicated in the letter from the Secretariat inviting Parties and observers to provide information.

General guidance on submission of information specified in Annex F

A. Procedure

1. In accordance with paragraph 7 (a) of Article 8 of the Convention, if the Persistent Organic Pollutants Review Committee decides on the basis of a chemical's risk profile that the chemical is likely as a result of its long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted, consideration of the proposal for listing the chemical in Annexes A, B and/or C proceeds to the next step.

2. The Committee at that point invites Parties and observers to submit information relating to the social and economic considerations specified in Annex F of the Convention. Based on the submitted information, the Committee prepares a draft risk management evaluation that includes an analysis of possible control measures for the chemical.

B. How to submit information

3. Annex F information may be submitted to the Secretariat using a form provided by the Committee. The form may be obtained from the Convention focal points and from the Convention website. It is preferable that Annex F information be submitted in electronic format in English; information may be submitted, however, in the other official languages of the United Nations (Arabic, Chinese, French, Russian and Spanish) and in hard copy. Please note that if you are completing the form electronically, the size of the boxes will adjust to the amount of text inserted and, thus, a complete form may be longer than the current number of pages. If you are completing a paper hard copy of the form, please include additional pages as required. The deadline for submitting information is indicated in the letter from the Secretariat inviting Parties and observers to provide information.

C. Reminders to those submitting information

4. Parties and observers providing annex F information should provide it in a concise manner with clear and precise references. If information on a specific item is not available, please so indicate. The information does not have to be national in nature; information from international sources maybe cited.

5. If possible and relevant provide additional information to support the Committee's scientific considerations in preparing the risk management evaluation such as study methods, tissue concentrations for comparative purposes and citations including original copies of papers that are not readily available in the public domain. Information which is not peer-reviewed may still be useful for the Committee.

6. The explanatory notes under each item have been developed by the Persistent Organic Pollutants Review Committee to guide and assist submissions; they have no legal status.

D. Possible control measures under the Stockholm Convention

7. The possible control measures under the Stockholm Convention for a given chemical are as follows:

(a) **Listing of the chemical in Annex A:** This would mean elimination of the production, use, export and import of the chemical. The Conference of the Parties might decide to provide for specific exemptions or to restrict the general exemptions laid down in paragraph 5 of Article 3 and notes (i)–(iii) of Annex I. It might also add provisions that would apply specifically to the chemical (as is currently done for PCBs in Part II of Annex A). These additional provisions can cover a wide range of control measures such as restriction of certain uses, labelling requirements, waste management requirements or provision of information to users along with a requirement to report on progress toward elimination at certain intervals;

(b) **Listing of the chemical in Annex B:** This would mean restriction of the production, use, export and import of the chemical. If it decides to list the chemical in Annex B the Conference of the Parties will also specify acceptable purposes for the chemical in Annex B. It might also decide to provide for specific exemptions or to restrict the general exemptions laid down in paragraph 5 of Article 3 and notes (i)–(iii) of Annex II. It might also add provisions that would apply specifically to the chemical (as is currently done for DDT in Part II of Annex B). These additional provisions can include the establishment of a register, a requirement to notify the Secretariat or other intergovernmental organizations regarding intent to use the substance, and a requirement for reporting on quantities used and conditions of use. Such provisions may also require the development and implementation of an action plan that includes the implementation of suitable alternatives and covers a wide range of control measures such as labelling or the provision of information to users;

(c) **Listing of the chemical in Annex C:** This Annex is applicable only to unintentionally produced chemicals. Listing in Annex C would mean that the chemical would become subject to measures to prevent, reduce or eliminate the unintentional formation and release of the chemical. The Conference of the Parties might also include any further amendments of Annex C that would be necessary to address the chemical (e.g., additional source categories, additional process control methods or additional pollution prevention options);

(d) Listing of the chemical in Annexes A, B and/or C also make the chemical subject to the **control provisions of Article 6 on stockpiles and waste**. These provisions include obligations to develop strategies for identifying products and articles in use that contain the chemical; to identify, to the extent practicable, stockpiles and waste; to manage such stockpiles safely; and to ensure that wastes are disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed.

8. It should be noted that the same chemical can be listed in Annexes A, B and/or C.

E. Guidance for information collection

9. A guidance document entitled “Handbook for effective participation in the work of the POPs Review Committee” contains the methodology for the identification and compilation of information required by the Committee. The handbook is available on the Convention’s website and hard copies may be obtained upon request to the Secretariat.

10. It is suggested that each Party establish an ad hoc working group, perhaps building on the committee established to develop the Party’s national implementation plan, to assist the national focal point to collect and submit relevant information effectively.

11. Most of the information on use patterns, alternatives, production volumes, regulations and other measures taken to reduce releases could be provided by the Governments and by non-governmental organizations, including manufacturers and users from the industrial sector. Some information can be found in official Government documents or provided by non-governmental organizations such as industrial sectors while other information may be found in the so-called grey literature. Grey literature refers to literature that is not available through publishers or conventional bibliographic sources such as databases or indexes. Examples of grey literature include technical reports, fact sheets, patents, government documents, technical documents and unpublished works.

12. To collect relevant information from various sectors a national survey could be carried out using questionnaires. A literature review on possible control measures may also be useful.

13. The following are some other potential sources of information:

- (a) International literature;
- (b) Databases;
- (c) Government sources, legislation;
- (d) National expertise (e.g., universities, institutes/research centres, non-governmental organizations, trade unions);
- (e) Industries (e.g., producers, importers, suppliers, users).