




FSC® INTERNATIONAL STANDARD

Indicators and thresholds for the identification of 'highly hazardous' pesticides (HHP)

FSC-STD-30-001 V1-0 EN



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INDICATORS AND THRESHOLDS FOR THE IDENTIFICATION OF 'HIGHLY HAZARDOUS' PESTICIDES (HHP)

FSC-STD-30-001 V1-0 EN

The Forest Stewardship Council® (FSC) is an independent, not for profit, non-government organization established to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests.

FSC's vision is that the world's forests meet the social, ecological, and economic rights and needs of the present generation without compromising those of future generations.

A Objective

The objective of this Standard is to provide technical indicators and associated thresholds to identify pesticides that FSC considers to be 'highly hazardous'.

B Scope

This Standard is mandatory for FSC certificate holders (and applicants for certification) and FSC-accredited certification bodies.

C Effective and validity dates

Approval date	17 th November 2014
Publication date	10 th February 2015
Effective date	10 th March 2015
Period of validity	until February 2020 (or until replaced or withdrawn)

D References

The following referenced documents are relevant for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

FSC-POL-30-001 FSC Pesticides Policy

FSC-PRO-01-004 Processing Pesticide Derogation Applications

FSC normative documents superseded and replaced by this standard

FSC-GUI-30-001 FSC Pesticides Policy: Guidance on Implementation and Annexes

E Terms and definitions

For the purpose of this procedure, the terms and definitions given in *FSC-STD-01-002 FSC Glossary of Terms*, *FSC-POL-30-001 FSC Pesticides Policy*, and the following apply:

Active ingredient: chemical compound in a pesticide, that prevents, destroys, repels, or mitigates a pest, or is a plant regulator, defoliant, desiccant or nitrogen stabilizer.

VERSION HISTORY

FSC-GUI-30-001 V1-0: initial version approved by FSC Board of Directors in December 2005.

FSC-GUI-30-001 V2-0 was approved by the FSC Board of Directors in May 2007 following a revision of the pesticide derogation procedure.

FSC-STD-30-001 V1-0: replacing the normative section of the guideline to bring the criteria, indicators and thresholds in line with the established documented system of the FSC Normative Framework. The indicators and thresholds were updated to bring them back in line with latest developments in regulatory systems and science and technology.

PART I – GENERAL BACKGROUND

Background

FSC's revised Pesticides Policy (FSC-POL-30-001) was approved by the FSC Board of Directors in December 2005.

The Policy requires the establishment of technical indicators and thresholds for the identification of pesticides recognized by FSC as being particularly ('highly') hazardous, based on their active ingredients. These indicators and thresholds and the resulting list of pesticides recognized by FSC as being 'highly hazardous' are listed in Part II and Addendum of this Standard respectively.

Criteria to be evaluated in the determination of hazard.

FSC has selected the following criteria to be evaluated in the determination of hazard:

1. Acute toxicity to mammals and birds
2. Carcinogenicity
3. Mutagenicity to mammals
4. Developmental and reproductive toxin
5. Endocrine disrupting chemical (EDC)
6. Acute toxicity to aquatic organisms
7. Persistence in soil or water and soil sorption potential and bio-magnification and bio-accumulation
8. International legislation
9. Dioxins (residues or emissions)
10. Heavy metals

The basis for selection of the indicators and thresholds was discussed in detail in the paper: *Use of Chemical Pesticides in Certified Forests: clarification of FSC Criteria 6.6, 6.7 and 10.7* (S. Radosevich, M. Lappé & B. Addlestone (2000) FSC-US).

This work was reviewed in detail in *Review of the Forest Stewardship Council's Pesticide Indicators and Thresholds* (2005) by Pesticides Action Network–UK (PAN-UK), followed by reviews of the indicators and thresholds by a panel of experts in 2007 and 2013.

Indicators and thresholds

Whilst the indicators and thresholds for identifying 'highly hazardous' pesticides are benchmarked by the best science available, the ultimate choice of indicators and thresholds to identify pesticides considered as 'highly hazardous' is a socially determined decision in the FSC system. Thus, based on the available scientific information about use of pesticides and their associated impacts, the FSC system sets a bar above which certain pesticides are considered unacceptable for use in FSC certified forests.

In the case of the FSC system the choices of indicators and thresholds were first specified in 2002 after consideration of existing norms used by organizations such as the World Health Organization (WHO) and US Environmental Protection Agency (EPA) followed by extensive consultation with social, environmental and economic stakeholders.

The indicators and thresholds are reviewed and revised periodically and as necessary according to the latest scientific available information. The decision for revision rests with the FSC Board of Directors and is implemented by a panel of experts under the supervision of the FSC Policy and Standards Unit.

Consequences of pesticides listed as 'highly hazardous'

The listing of a pesticide as 'highly hazardous' does not mean that the pesticide cannot be used under any circumstances. Nor does the fact, that a pesticide is not on this list, mean that it is 'safe'. Inclusion on the list means that FSC considers the pesticide as 'highly hazardous' in relation to one or more of the specified indicators. In order to reduce the risk of negative environmental or social impacts these pesticides shall be avoided, and should only be used in FSC-certified forests and plantations if there is no viable alternative. This implies that non-chemical methods or less hazardous (pesticides shall be preferred, and that ultimately, use of the most hazardous pesticides should be eliminated.

Therefore, pesticides included on the FSC list of 'highly hazardous' pesticides shall not be used in FSC-certified forests unless there is no viable alternative. In order to implement this, FSC requires that Organizations wishing to use these 'highly hazardous' pesticides must justify such use through a specific process which includes consultation with social, environmental and economic stakeholders. This is the 'derogation' process, described in more detail in *FSC-PRO-01-004*.

PART II – CRITERIA, INDICATORS AND THRESHOLDS FOR THE IDENTIFICATION OF ‘HIGHLY HAZARDOUS’ PESTICIDES (HHP).

Criteria	Indicator and threshold for inclusion on FSC list of ‘highly hazardous’ pesticides	Sources of information
Criterion 1. Acute toxicity to mammals and birds	<p>1.1. A pesticide is considered ‘highly hazardous’ if it contains any active ingredient that is:</p> <ul style="list-style-type: none"> a) ‘Extremely hazardous’ (Class Ia) or ‘Highly hazardous’ (Class Ib), according to <u>WHO¹ Recommended Classification of Pesticides by Hazard</u>, OR b) Acutely toxic for rats and birds: acute oral LD50 for rats/birds ≤ 200 mg/kg body weight (or most sensitive mammal/bird), OR c) ‘Fatal if inhaled’ (H330) according to the <u>GHS²</u> as classified by national/ international authorities. 	<p>WHO & IPCS: The WHO recommended classification of pesticides by hazard and guidelines to classification. International Programme on Chemical Safety (IPCS) & World Health Organization (WHO). Geneva.</p> <p>The FOOTPRINT Pesticide Properties DataBase: http://sitem.herts.ac.uk/aeru/footprint/index2.htm</p> <p>The Pesticide Manual British Crop Protection Council (BCPC): http://bcpdata.com/pm.html</p> <p>Regulation (EC) No 1272/2008 of The European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 and its amendments and other national legislation implementing the GHS</p>

1 World Health Organization

2 Globally Harmonized System of Classification and Labelling of Chemicals

Criteria	Indicator and threshold for inclusion on FSC list of 'highly hazardous' pesticides	Sources of information
Criterion 2. Carcinogenicity	<p>2.1. A pesticide is considered 'highly hazardous' if it contains any active ingredient that is in any of the following categories by classification systems:</p> <ul style="list-style-type: none"> a) Group 1: 'The agent (mixture) is carcinogenic to humans' or Group 2A: 'The agent (mixture) is probably carcinogenic to humans', according to the <u>IARC</u>³, OR b) Group A (Carcinogenic to Humans) (1986 Guidelines) or Group B (Probably Carcinogenic to Humans) (1986 Guidelines) or Known/Likely human carcinogen (1996 Guidelines) or Carcinogenic to humans (1999 and 2005 Guidelines-current) or Likely to be carcinogenic to humans (1999 and 2005 Guidelines - current), according the <u>EPA</u>⁴, OR c) Category IA (Known to have carcinogenic potential for humans) or category IB (Presumed to have carcinogenic potential for humans), as classified by national/ international authorities according to <u>classification for carcinogens of the GHS</u>⁵. 	<p>US EPA: Chemicals Evaluated for Carcinogenic Potential. Office of Pesticide Programs, U.S. Environmental Protection Agency (US EPA).</p> <p>IARC: Agents reviews by the IARC Monographs. Volumes 1-102 International Agency for Research on Cancer (IARC), Lyon, France</p> <p>Regulation (EC) No 1272/2008 of The European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 and its amendments and other national legislation implementing the GHS.</p>
Criterion 3. Mutagenicity to mammals	<p>3.1 A pesticide is considered 'highly hazardous' if it contains any active ingredient that is in any of the following categories:</p> <ul style="list-style-type: none"> a) Category IA (Substances known to induce heritable mutations in germ cells of humans) or Category IB (Substances which should be regarded as if they induce heritable mutations in the germ cells of humans), as classified by national/ international authorities according to the <u>classification for mutagenicity of the GHS</u>⁵. 	<p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 and its amendments and other national legislation implementing the GHS.</p>

3 International Agency for Research on Cancer

4 Carcinogenicity classification by the US Environmental Protection Agency

5 Global Harmonized System of Classification and Labelling of Chemicals

Criteria	Indicator and threshold for inclusion on FSC list of 'highly hazardous' pesticides	Sources of information
Criterion 4. Developmental and reproductive toxin	<p>4.1 A pesticide is considered 'highly hazardous' if it contains any active ingredient that is in any of the following categories:</p> <p>a) Category IA (Known human reproductive toxicant) or Category IB (Presumed human reproductive toxicant), as classified by national/ international authorities according to the <u>classification for reproductive toxicants of the GHS⁶</u>.</p>	<p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 and its amendments and other national legislation implementing the GHS.</p>
Criterion 5. Endocrine disrupting chemical (EDC)	<p>5.1 A pesticide is considered 'highly hazardous' if it contains any active ingredient that is classified as:</p> <p>a) Category 1 (Substances for which endocrine activity have been documented in at least one study of a living organism) according to the <u>EU⁷ list of potential endocrine disruptors</u>, OR</p> <p>b) Category 2 (Suspected human carcinogens) of the classification for carcinogens of the GHS⁶ AND Category 2 (Suspected human reproductive toxicant) of the <u>classification for reproductive toxicants of the GHS⁶</u></p>	<p>EC (2000): Towards the establishment of a priority list of substances for further evaluation of their role in endocrine disruption – preparation of a candidate list of substances as a basis for priority setting, European Commission, Delft.</p> <p>EC (2004): Commission Staff Working Document SEC (2004) 1372 on implementation of the Community Strategy for Endocrine Disruptors – a range of substances suspected of interfering with the hormone systems of humans and wildlife (COM (1999) 706), European Commission, Brussels.</p> <p>EC (2007): Commission staff working document on the implementation of the "Community Strategy for Endocrine Disruptors" – a range of substances suspected of interfering with the hormone systems of humans and wildlife (COM (1999) 706), (COM (2001) 262) and (SEC (2004) 1372), SEC(2007).</p>

6 Global Harmonized System of Classification and Labelling of Chemicals

7 European Union

Criteria	Indicator and threshold for inclusion on FSC list of 'highly hazardous' pesticides	Sources of information
		Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 and its amendments and other national legislation implementing the GHS.
Criterion 6. Acute toxicity to aquatic organisms	6.1. A pesticide is considered 'highly hazardous' if it contains any active ingredient that: a) has aquatic toxicity LC50/EC50 < 50 µg/l, using Daphnia as the test organism or other invertebrate or vertebrate aquatic organisms that show greater sensitivity than Daphnia. Acute test duration up to 96 hours.	The FOOTPRINT Pesticide Properties DataBase: http://sitem.herts.ac.uk/aeru/footprint/index2.htm The Pesticide Manual British Crop Protection Council (BCPC): http://bcpcdata.com/pm.html
Criterion 7. Persistence in soil or water and soil sorption potential AND Bio-magnification, bio-accumulation	7.1 A pesticide is considered 'highly hazardous' if it contains any active ingredient that is considered: a) Persistent (DT50> 90 days), COMBINED WITH b) Low soil sorption coefficient (Koc < 300ml/g), AND/OR c) High water solubility (> 30mg/l) AND 7.2. it has the potential to accumulate in animal/human tissue: a) Bio-concentration factor (BCF) for the active ingredient is ≥ 1000, OR b) Octanol-water partition coefficient (KOW) for the active ingredient is > 1000 i.e. logP (KOW) > 3 Note: BCF data shall supersede the logP (KOW) data.	The FOOTPRINT Pesticide Properties DataBase: http://sitem.herts.ac.uk/aeru/footprint/index2.htm The Pesticide Manual British Crop Protection Council (BCPC): http://bcpcdata.com/pm.html

Criteria	Indicator and threshold for inclusion on FSC list of 'highly hazardous' pesticides	Sources of information
Criterion 8. International legislation	<p>8.1 A pesticide is considered 'highly hazardous' if:</p> <ul style="list-style-type: none"> a) It is banned by international agreement under the Persistent Organic Pollutants POP convention (Stockholm Convention), OR b) It is listed in Annex III of the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, OR c) It is listed as ozone depleting substance under the Montreal Protocol on Substances that Deplete the Ozone Layer. 	<p>Stockholm Convention on Persistent Organic Pollutants (POPs) at http://www.pops.int</p> <p>Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade at http://www.pic.int</p> <p>Montreal Protocol on Substances that Deplete the Ozone Layer at http://ozone.unep.org/</p>
Criterion 9. Dioxins (residues or emissions)	<p>9.1 A pesticide is considered 'highly hazardous' if:</p> <ul style="list-style-type: none"> a) it is contaminated with any dioxins at a level of 10 part per trillion (corresponding to 10 ng/kg) or greater of tetrachlorodibenzo-pdioxin (TCDD) equivalent (TEQ), or it produces such an amount of dioxin(s) when burned. 	<p>Stockholm Convention and national monitoring data</p>
Criterion 10. Heavy metals	<p>10.1 A pesticide is considered 'highly hazardous' if it contains any of the following heavy metals as active ingredient, inert or known impurity:</p> <ul style="list-style-type: none"> a) lead (Pb), OR b) cadmium (Cd), OR c) arsenic (As), OR d) mercury (Hg) 	<p>The Pesticide Manual British Crop Protection Council (BCPC): http://bcpdata.com/pesticide-manual.html</p>