

**Environmental and Social Safeguards Standards**

**Of Foreign Environmental Cooperation Center**

**Pest Management**

## **Chapter I Policy**

1. ESA shall confirm that all project-related pest management shall be implemented according to the provisions of integrated pest management (IPM)<sup>1</sup>; biological or environment-friendly control methods shall be promoted and used so as to reduce the reliance on chemical pest-control products.

2. Best management practices and the FAO code of conduct<sup>2</sup> shall be used to handle, store, use and dispose pest control products according to the laws and regulations of our country so as to reduce pest-related health and environmental risks as far as possible.

3. As necessary, IPM shall be promoted through policy, system and capacity construction, so as to control and monitor the sale and use of pest control products.

4. FECO does not finance the use or handling of formulated products that fall in WHO classes IA and IB<sup>3</sup>, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution, management and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

5. For any project identified to involve pest management issues, a pest management plan (PMP) will be prepared and submitted for public consultation and disclosure prior to appraisal.

## **Chapter II Institutional Structures**

FECO has designated a staff person as the institutional focal point for integrated pest management. This staff will be responsible for the coordination, implementation and oversight of FECO's standard on integrated pest management.

FECO maintains a pool of external specialists in the area of integrated pest management, taken from the field of agronomy, environmental management, chemistry and related disciplines, which will perform specialized functions in the implementation of FECO's standard on integrated pest management.

## **Chapter III Guidelines**

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<sup>1</sup> Integrated pest management (IPM) refers to a mix of farmer-driven, ecologically based pest control practices that seeks to reduce reliance on synthetic chemical pesticides. It involves (a) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them; (b) relying, to the extent possible, on nonchemical measures to keep pest populations low; and (c) selecting and applying pesticides, when they have to be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment.

<sup>2</sup> The FAO code of conduct refers to The Food and Agriculture Organization's International Code of Conduct on Pesticide Management (2013).

<sup>3</sup> [http://www.inchem.org/documents/pds/pdsother/class\\_2009.pdf](http://www.inchem.org/documents/pds/pdsother/class_2009.pdf)

## **Section I Requirements of ESA on Relevant Integrated Pest Management**

The following guidelines will be followed in relevant cases:

1. Analysis of the institutional and legal framework:

(1) The ability to manage the procurement, transportation, storage, use and disposal of the products used in pest control and their packages;

(2) The ability to monitor and forecast the occurrence and extent of diseases and insect pests, propose scientific management methods, and correctly select pesticides;

(3) The ability to develop and implement environment-friendly integrated pest management approaches.

2. Analysis of the proposed Integrated Pest Management Approach:

(1) Current and anticipated pest problems relevant to the project;

(2) Current and proposed integrated pest management practices;

(3) Relevant integrated pest management experience within the project area, country or region;

(4) Assessment of proposed or current integrated pest management approaches and recommendations for adjustment where necessary.

3. Pesticide Selection and Use and Impacts:

(1) Description of present, proposed and/or envisaged pesticide use and assessment of whether such use is in line with best management practices and the FAO code of conduct;

(2) Indication of type and quantity of pesticides envisaged to be financed by the project (in volume and dollar value) and/or assessment of likely increase in pesticide use resulting from the project;

(3) Chemical, trade, and common name of pesticide to be used and most likely dilution to be effective;

(4) Form in which pesticide will be used (e.g., pellet, spray, paint-on);

(5) Assessment of environmental, occupational and public health risks associated with the transport, local movement, storage, handling and use of the proposed chemicals (and diluents) under local circumstances and the disposal of empty chemical containers;

(6) Pre-requisites and/or measures required to reduce specific risks associated with envisaged pesticide use under the project (e.g., protective gear, training, upgrading of storage facilities, etc.);

(7) Basis for selection of pesticides authorized for procurement under the project, taking into consideration WHO and World Bank standards, the above hazards and risks, and availability of newer and less hazardous products and non-chemical techniques (e.g. bio-pesticides, biological control, traps, hormone lures).

## **Section II Integrated Pest Management Plan**

The main objective of the integrated pest management plan (IPMP) process is to ensure that pesticides are only used and as the last choices in the context of an Integrated Pest Management (IPM) program. For any project that is identified to involve pest management issues, an integrated pest management plan (IPMP) will be required. IPMP should include all the following topics:

- (i) pest management approach;
- (ii) pesticide selection and use;
- (iii) policy, regulatory framework, and institutional capacity;
- (iv) consultation;
- (v) monitoring and evaluation; and
- (vi) mitigation plan.

## **Chapter IV Procedures**

### **I. Stage of Eligibility Assessment**

Project proponents need to explain if the proposed project involves, or potentially causes impacts as a result of Pest Management. This information will be used by the institutional focal point to determine whether or not the standard on integrated pest management is triggered in the proposed project.

### **II. Stage of the Project Document Assessment**

If the standard on integrated pest management is triggered, a separate integrated pest management plan is required. Consultation and disclosure will be part of the IPMP preparation process, and affected parties and stakeholders will be notified of the decision to develop an IPMP and will be appropriately consulted in its formulation.

## Appendix I:

### Extremely Hazardous (Class Ia) Technical Grade Active Ingredients in Pesticide

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD <sub>50</sub> mg/kg	Remarks
Aldicarb [ISO]	116-06-3	2757	C	S	I-S	1	0.93	DS 53; EHC 121; HSG 64; IARC 53; ICSC 94; JMPR 1993, 1996a
Brodifacoum [ISO]	56073-10-0	3027	CO	S	R	1	0.3	DS 57; EHC 175; HSG 93
Bromadiolone [ISO]	28772-56-7	3027	CO	S	R	1	1.12	DS 88; EHC 175; HSG 94
Bromethalin [ISO]	63333-35-7	2588		S	R	1	2	
Calcium cyanide [C]	592-01-8	1575		S	FM	2	39	Adjusted classification; see note 1; ICSC 407
Captafol [ISO]	2425-06-1			S	F	5	5000	Adjusted classification; see note 2; HSG 49; IARC 53; ICSC 119; JMPR 1978, 1986a; see note 3
Chlorethoxyfos [ISO]	54593-83-8	3018	OP	L	I	1	1.8	Extremely hazardous by skin contact (LD <sub>50</sub> = 12.5 mg/kg); ICSC 1681
Chlormephos [ISO]	24934-91-6	3018	OP	L	I	2	7	ICSC 1682
Chlorophacinone [ISO]	3691-35-8	2588		S	R	1	3.1	DS 62; EHC 175
Difenacoum [ISO]	56073-07-5	3027	CO	S	R	1	1.8	EHC 175; HSG 95
Difethialone [ISO]	104653-34-1	2588		S	R	1	0.56	EHC 175
Diphacinone [ISO]	82-66-6	2588		S	R	1	2.3	EHC 175
Disulfoton [ISO]	298-04-4	3018	OP	L	I	1	2.6	DS 68; JMPR 1992, 1997a; ICSC 1408
EPN	2104-64-5	2783	OP	S	I	2	14	See note 4; ICSC 753
Ethoprophos [ISO]	13194-48-4	3018	OP	L	I-S	2	D26	DS 70; JMPR 2000; ICSC 1660; [Oral LD <sub>50</sub> = 33 mg/kg]
Flocoumafen	90035-08-8	3027		S	R	1	0.25	EHC 175; ICSC 1267
Hexachlorobenzene [ISO]	118-74-1	2729	OC	S	FST	5	D10000	Adjusted classification (notes 3 and 5); IARC 79; ICSC 895; EHC 195
Mercuric chloride [ISO]	7487-94-7	1624	HG	S	F-S	1	1	See note 3; ICSC 979
Mevinphos [ISO]	26718-65-0	3018	OP	L	I	1	D4	DS 14; ICSC 924; JMPR 1998b; [Oral LD <sub>50</sub> = 3.7 mg/kg]
Parathion [ISO]	56-38-2	3018	OP	L	I	2	13	See note 3; DS 6; HSG 74; IARC 30, Suppl. 7; ICSC 6; JMPR 1996b
Parathion-methyl [ISO]	298-00-0	3018	OP	L	I	2	14	See note 3; DS 7; EHC 145; HSG 75; ICSC 626; JMPR 1985c, 1996b

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD <sub>50</sub> mg/kg	Remarks
Phenylmercury acetate [ISO]	62-38-4	1674	HG	S	FST	2	24	Adjusted classification; see notes 3 and 6; <a href="#">ICSC 540</a>
Phorate [ISO]	298-02-2	3018	OP	L	I	1	2	DS 75; <a href="#">JMPR 1997b, 2005</a> ; <a href="#">ICSC 1060</a>
Phosphamidon	13171-21-6	3018	OP	L	I	2	7	See note 3; DS 74; <a href="#">ICSC 189</a> ; <a href="#">JMPR 1987b</a> CAS Nos for E and Z isomers 297-99-4 and 23783-98-4
Sodium fluoroacetate [C]	62-74-8	2629		S	R	1	0.2	DS 16; <a href="#">ICSC 484</a>
Sulfotep [ISO]	3689-24-5	1704	OP	L	I	1	5	<a href="#">ICSC 985</a>
Tebupirimfos [ISO*]	96182-53-5	3018	OP	L	I	1	1.3	Extremely hazardous by skin contact (LD <sub>50</sub> 9.4 mg/kg in rats)
Terbufos [ISO]	13071-79-9	3018	OP	L	I-S	1	e2	<a href="#">JMPR 1991, 2004</a>

EHC = Environmental Health Criteria Monograph; DS = Pesticide Data Sheet; HSG = Health and Safety Guide; IARC = IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; ICSC = International Chemical Safety Card; JMPR = Evaluation by the Joint FAO/WHO Meeting on Pesticide Residues.

## Appendix II:

### Highly Hazardous (Class Ib) Technical Grade Active Ingredients in Pesticide

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD <sub>50</sub> mg/kg	Remarks
Acrolein [C]	107-02-8	1092		L	H	2	29	EHC 127; HSG 67; IARC 63; ICSC 90
Allyl alcohol [C]	107-18-6	1098		L	H	3	64	Highly irritant to skin and eyes; ICSC 95; <i>Adjusted classification (see note 3)</i>
Azinphos-ethyl [ISO]	2642-71-9	2783	OP	S	I	2	12	DS 72; JMPR 1974
Azinphos-methyl [ISO]	86-50-0	2783	OP	S	I	2	16	DS 59; ICSC 826; JMPR 1992, 2009b
Blasticidin-S	2079-00-7	2588		S	F	2	16	
Butocarbexim [ISO]	34681-10-2	2992	C	L	I	3	158	JMPR 1986a; <i>Adjusted classification (see note 3)</i>
Butoxycarbexim [ISO]	34681-23-7	2992	C	L	I	3	D288	<i>Adjusted classification (see note 3)</i>
Cadusafos [ISO]	95465-99-9	3018	OP	L	N,I	2	37	JMPR 1992
Calcium arsenate [C]	7778-44-1	1573	AS	S	I	2	20	EHC 18, 224; IARC 84; ICSC 765; JMPR 1969
Carbofuran [ISO]	1563-66-2	2757	C	S	I	2	8	DS 56; ICSC 122; JMPR 1997b, 2003b, 2009a; <i>See note 2.</i>
Chlorfenvinphos [ISO]	470-90-6	3018	OP	L	I	2	31	ICSC 1305; JMPR 1995b
3-Chloro-1,2-propanediol [C]	96-24-2	2689		L	R	3	112	<i>Adjusted classification (see notes 1 and 3)</i>
Coumaphos [ISO]	56-72-4	2783	OP	S	AC,MT	2	7.1	ICSC 422; JMPR 1991
Coumatetralyl [ISO]	5836-29-3	3027	CO	S	R	2	16	
Cyfluthrin [ISO]	68359-37-5		PY	S	I	2	c15	JMPR 2008; <i>See note 9, p. 8</i>
Beta-cyfluthrin [ISO]	68359-37-5		PY	S	I	2	c11	JMPR 2008; <i>See note 9, p. 8</i>
Zeta-cypermethrin [ISO]	52315-07-8	3352	PY	L	I	3	e86	<i>See note 9, p. 8; HSG 22; ICSC 246; JMPR 2008; Adjusted classification (see note 3)</i>
Demeton-S-methyl [ISO]	919-86-8	3018	OP	L	I	2	40	DS 61, EHC 197; ICSC 705; JMPR 1990
Dichlorvos [ISO]	62-73-7	3018	OP	L	I	3	56	Volatile, DS 2; EHC 79; HSG 18; IARC 20, 53; ICSC 690; JMPR 1994; <i>Adjusted classification (see note 3)</i>
Dicrotophos [ISO]	141-66-2	3018	OP	L	I	2	22	ICSC 872
Dinoterb [ISO]	1420-07-1	2779	NP	S	H	2	25	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD <sub>50</sub> mg/kg	Remarks
DNOC [ISO]	534-52-1	2779	NP	S	I-S,H	2	25	JMPR 1965a; EHC 220; ICSC 462. See note 2.
Edifenphos [ISO]	17109-49-8	3018	OP	L	F	3	150	JMPR 1982. <i>Adjusted classification (see note 3)</i>
Ethiofencarb [ISO]	29973-13-5	2992	C	L	I	3	200	JMPR 1983. <i>Adjusted classification (see note 3)</i>
Famphur	52-85-7	2783	OP	S	I	2	48	
Fenamiphos [ISO]	22224-92-6	2783	OP	S	N	2	15	DS 92; ICSC 483; JMPR 1998b, 2003b
Fluecythrinat [ISO]	70124-77-5	3352	PY	L	I	3	e67	JMPR 1986b; see note 9, p.8; <i>Adjusted classification (see note 3)</i>
Fluoroacetamide [C]	640-19-7	2588		S	R	2	13	ICSC 1434. See note 2
Formetanate [ISO]	22259-30-9	2757	C	S	AC	2	21	
Furathiocarb	65907-30-4	2992	C	L	I-S	2	42	
Heptenophos [ISO]	23560-59-0	3018	OP	L	I	3	96	<i>Adjusted classification (see note 3)</i>
Isoxathion [ISO]	18854-04-8	3018	OP	L	I	3	112	<i>Adjusted classification (see note 3)</i>
Lead arsenate [C]	7784-40-9	1617	AS	S	L	2	e10	EHC 18, 224; IARC 84; ICSC 911; JMPR 1969
Mecarbam [ISO]	2595-54-2	3018	OP	Oil	I	2	36	JMPR 1987a
Mercuric oxide [ISO]	21908-53-2	1641	HG	S	O	2	18	ICSC 981; CICAD 50. See note 2
Methamidophos [ISO]	10265-92-6	2783	OP	S	I	2	30	HSG 79; ICSC 176; JMPR 1991, 2003b; See note 2
Methidathion [ISO]	950-37-8	3018	OP	L	I	2	25	JMPR 1998b; ICSC 1659
Methiocarb [ISO]	2032-65-7	2757	C	S	I	2	20	JMPR 1999
Methomyl [ISO]	16752-77-5	2757	C	S	I	2	17	DS 55, EHC 178; HSG 97; ICSC 177, JMPR 1989, 2002
Monocrotophos [ISO]	6923-22-4	2783	OP	S	I	2	14	See note 2; HSG 80; ICSC 181; JMPR 1996b
Nicotine [ISO]	54-11-5	1654		L		1	D50	ICSC 519
Omethoate [ISO]	1113-02-6	3018	OP	L	I	2	50	JMPR 1997a
Oxamyl [ISO]	23135-22-0	2757	C	S	I	2	6	DS 54; JMPR 1986b, 2003b
Oxydemeton-methyl [ISO]	301-12-2	3018	OP	L	I	3	65	JMPR 1990, 2003b; <i>Adjusted classification (see note 3)</i>
Paris green [C]	12002-03-8	1585	AS	S	L	2	22	Copper-arsenic complex
Pentachlorophenol [ISO]	87-86-5	3155		S	I,F,H	2	D80	See note 2; Irritant to skin; EHC 71; HSG 19; IARC 20, 53; ICSC 69

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD <sub>50</sub> mg/kg	Remarks
Propetamphos [ISO]	31218-83-4	3018	OP	L	I	3	106	<i>Adjusted classification (see note 3)</i>
Sodium arsenite [C]	7784-46-5	1557	AS	S	R	2	10	<a href="#">EHC 224</a> ; <a href="#">IARC 84</a> ; <a href="#">ICSC 1603</a>
Sodium cyanide [C]	143-33-9	1689		S	R	2	6	<a href="#">ICSC 1118</a> ; <a href="#">CICAD 61</a>
Strychnine [C]	57-24-9	1692		S	R	2	16	<a href="#">ICSC 197</a>
Tefluthrin	79538-32-2	3349	PY	S	I-S	2	c22	See note 9, p. 8
Thallium sulfate [C]	7446-18-6	1707		S	R	2	11	<a href="#">DS 10</a> , <a href="#">EHC 182</a> ; <a href="#">ICSC 336</a>
Thiofanox [ISO]	39196-18-4	2757	C	S	I-S	2	8	
Thiometon [ISO]	640-15-3	3018	OP	Oil	I	3	120	<a href="#">DS 67</a> ; <a href="#">ICSC 580</a> ; <a href="#">JMPR 1980</a> ; <i>Adjusted classification (see note 3)</i>
Triazophos [ISO]	24017-47-8	3018	OP	L	I	3	82	<a href="#">JMPR 1994, 2003b</a> ; <i>Adjusted classification (see note 3)</i>
Vamidotion [ISO]	2275-23-2	3018	OP	L	I	3	103	<a href="#">JMPR 1989</a> ; <a href="#">ICSC 758</a> ; <i>Adjusted classification (see note 3)</i>
Warfarin [ISO]	81-81-2	3027	CO	S	R	2	10	<a href="#">DS 35</a> , <a href="#">EHC 175</a> ; <a href="#">HSG 96</a> ; <a href="#">ICSC 821</a>
Zinc phosphide [C]	1314-84-7	1714		S	R	2	45	<a href="#">DS 24</a> , <a href="#">EHC 73</a> ; <a href="#">ICSC 602</a>

EHC = Environmental Health Criteria Monograph; DS = Pesticide Data Sheet; HSG = Health and Safety Guide; IARC = IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; ICSC = International Chemical Safety Card; JMPR = Evaluation by the Joint FAO/WHO Meeting on Pesticide Residues.