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Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Chemical Review Committee
Fifth meeting
Rome, 23–27 March 2009
Item 4 (b) (iv) of the provisional agenda*

Listing of chemicals in Annex III to the Rotterdam Convention: review of notifications of final regulatory actions to ban or severely restrict a chemical: mirex

Mirex

Note by the Secretariat

1. Under Article 5 of the Rotterdam Convention, when the Secretariat has received at least one notification from each of two prior informed consent (PIC) regions containing the information required in Annex I to the Convention, it shall forward the notifications and accompanying documentation to the members of the Chemical Review Committee. The Committee shall review the documentation provided in such notifications and, in accordance with the criteria set out in Annex II to the Convention, recommend to the Conference of the Parties whether the chemical in question should be included in Annex III to the Convention and whether a decision guidance document should be drafted.

2. At its second meeting, the Chemical Review Committee reviewed one notification of final regulatory action related to mirex from North America (Canada). The Committee concluded that the notification met the requirements of the Rotterdam Convention. The rationale for the Committee's conclusion may be found in document UNEP/FAO/RC/CRC.5/7/Add.1.

3. The Secretariat has subsequently received two additional notifications relating to mirex that meet the information requirements of Annex I from Latin America and the Caribbean (Cuba and Uruguay). Summaries of those notifications were included in PIC Circular XII of December 2000 and PIC Circular XXVIII of December 2008, respectively. The notifications, as received from the notifying countries, are set out in the annex to the present note.

* UNEP/FAO/RC/CRC.5/1.

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4. The supporting documentation provided by Uruguay and Cuba is set out in documents UNEP/FAO/RC/CRC.5/7/Add.2 and Add.3, respectively.

5. A list of other notifications previously considered by the Chemical Review Committee is set out in document UNEP/FAO/RC/CRC.5/INF/4.

Annex

Notification of final regulatory action for mirex by Canada

Notification of final regulatory action for mirex by Uruguay (English and Spanish)

Notification of final regulatory action for mirex by Cuba (English and Spanish)

Environment Canada Environnement Canada

Ottawa, ON
K1A 0H3

28 AOUT 2008

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Subject: Notifications of Final Regulatory Action

We are pleased to submit a Notification of Final Regulatory Action to Ban or Severely Restrict a Chemical for the following substances:

- Dichlorodiphenyl trichloroethane (DDT), CAS 50-29-3
- Hexachlorobutadiene (HCBD), CAS 87-68-3
- 2-Metholxyethanol (2-ME), CAS 109-86-4
- *N*-Nitrosodimethylamine (NDMA), CAS 62-75-9
- Pentachlorobenzene (QCB), CAS 608-93-5
- Tetrachlorobenzenes (TeCB), CAS 12408-10-5, 84713-12-2, 634-90-2, 634-66-2, 95-94-3

In addition, we are submitting amendments to previously submitted Notifications of Final Regulatory Action to Ban or Severely Restrict a Chemical for the following substances:

- Benzidine and Benzidine dihydrochloride, CAS 92-87-5 (benzidine), 531-85-1 (benzidine dihydrochloride)
- Chloromethyl methyl ether (CMME), CAS 107-30-2
- Hexachlorobenzene (HCB), CAS 118-74-1
- Mirex, CAS 2385-85-5
- NCC ether, CAS 94097-88-8

Note that these Notification amendments are the result of amendments to the *Prohibition of Certain Toxic Substances Regulations, 2005*. These amendments are not expected to result in a change to the management of these substances in Canada.

Canada

If you have any questions regarding these notifications, please contact Sandi Moser at (819) 953-2335 or sandi.moser@ec.gc.ca.

Sincerely,

France Jacovella
Designated National Authority – Industrial Chemicals
Executive Director
Chemicals Management Division
Environment Canada
351 St. Joseph Blvd., 17th Floor
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cc. Trish MacQuarrie, Designated National Authority – Pesticides

ROTTERDAM CONVENTION

SECRETARIAT FOR THE ROTTERDAM CONVENTION
ON THE PRIOR INFORMED CONSENT PROCEDURE
FOR CERTAIN HAZARDOUS CHEMICALS AND PESTICIDES
IN INTERNATIONAL TRADE

UNEP

FORM FOR NOTIFICATION
OF FINAL REGULATORY ACTION TO BAN OR SEVERELY RESTRICT A CHEMICAL

Country: CANADA

SECTION 1 IDENTITY OF CHEMICAL SUBJECT TO THE FINAL REGULATORY ACTION

1.1	**Common name**	Mirex
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	Dodecachloropentacyclo [5.3.0.$0^{2,6}$.$0^{3,9}$.$0^{4,8}$] decane
1.3	**Trade names and names of preparations**	GC-1283; ENT 25719; Dechlorane; Dechlorane 4070; Dechlorane Plus; $C_{10}Cl_{12}$; Ferriamicide; HRS 1276; Bichlorendo

1.4	**Code numbers**	
1.4.1	CAS number	2385-85-5
1.4.2	Harmonized System customs code	Not Available
1.4.3	Other numbers (specify the numbering system)	RTECS PC8225000

1.5 Indication regarding previous notification on this chemical, if any

1.5.1 ☐ This is a first time notification of final regulatory action on this chemical.

1.5.2 ☒ This notification replaces all previously submitted notifications on this chemical.
Date of issue of the previous notification: 2000/05/17

SECTION 2 FINAL REGULATORY ACTION

2.1 The chemical is: ☐ **banned** **OR** ☒ **severely restricted**

2.2 Information specific to the final regulatory action

2.2.1 Summary of the final regulatory action

The *Prohibition of Certain Toxic Substances Regulations, 2005* prohibit the manufacture, use, sale, offer for sale and import of toxic substances listed in Schedules 1 and 2 to the Regulations. Mirex is found in Schedule 1, which lists prohibited toxic substances subject to total prohibition, with the exception of incidental presence.

2.2.2 Reference to the regulatory document, e.g. where decision is recorded or published

Prohibition of Certain Toxic Substances Regulations, 2005 (SOR/2005-41) under the *Canadian Environmental Protection Act, 1999*.

2.2.3 Date of entry into force of the final regulatory action

May 15, 2005

2.3 Category or categories where the final regulatory action has been taken

2.3.1 All use or uses of the chemical in your country prior to the final regulatory action

Technical mirex contains approximately 95% mirex and 2.5% chlordecone. It has been used worldwide against fire ants, termites and other insect pests. However, mirex was never registered for use as an agricultural pesticide in Canada. It has mainly been used as a fire retardant agent in plastics, rubber, paint paper and electrical goods. It has also been used as a pyrotechnic for generating white smoke.

2.3.2 Final regulatory action has been taken for the category ☒ Industrial

Use or uses prohibited by the final regulatory action

The Regulations prohibit the manufacture, use, sale, offer for sale or import of mirex, with the exceptions listed below.

Use or uses that remain allowed (only in case of a severe restriction)

The Regulations do not apply to the incidental presence of mirex, or for use in a laboratory for scientific research purposes or as a laboratory analytical standard.

2.3.3 Final regulatory action has been taken for the category ☐ Pesticide

Formulation(s) and use or uses prohibited by the final regulatory action

Formulation(s) and use or uses that remain allowed (only in case of a severe restriction)

2.4 Was the final regulatory action based on a risk or hazard evaluation? ☒ **Yes**

☐ **No** (If no, you may also complete section 2.5.3.3)

2.4.1 If yes, reference to the relevant documentation, which describes the hazard or risk evaluation

Mirex, Environmental Health Criteria Document, Health and Welfare Canada, Health Protection Branch, 77-EHD-12, September 1977, 168 p.

Mirex in Canada, A report of the task force on mirex, April 1 1977 to the Environmental Contaminants Committee of Fisheries & Environment Canada and Health & Welfare Canada, Technical Report 77-1, 153 p.

2.4.2 Summary description of the risk or hazard evaluation upon which the ban or severe restriction was based.

2.4.2.1 Is the reason for the final regulatory action relevant to human ☒ Yes

health?

☐ No

If yes, give summary of the hazard or risk evaluation related to human health, including the health of consumers and workers

Note: Mirex was assessed under the original *Canadian Environmental Protection Act* (CEPA). While the Act was updated in 1999, the conclusions of the assessment remain the same. This notification is based on the assessment and therefore references the original Act. Information provided here was current at the time of the original notification.

Mirex is specified on the List of Toxic Substances in Schedule I to the *Canadian Environmental Protection Act* (CEPA). The assessment of substances to determine if they are "toxic" under the CEPA is a shared responsibility of Environment Canada and Health Canada. Environment Canada assesses the environmental risks, and Health Canada assesses the human health risks. An assessment was conducted to determine if a substance is likely to harm the environment or the health of humans, taking into account the likelihood and magnitude of releases at levels occurring in the Canadian environment. Thus "toxic" in the context of CEPA is a function of both the inherent properties of a substance and the amounts, concentrations, or nature of entry of the substance in the Canadian environment.

The assessment process thus provides a framework for making science-based decisions on the effective management of toxic substances that are of concern. The determination of whether or not a substance is "toxic" must be based on sound, scientifically reliable data. Under CEPA, a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that

(a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;

(b) constitute or may constitute a danger to the environment on which life depends; or

(c) constitute or may constitute a danger in Canada to human life or health.

The main sources of mirex in Canada were located in New York State (U.S.) in the Niagara River and the Oswego River where chemical manufacturing and fire retardant production plants were located.

Canadian human exposure to mirex was generally minimal except in the group partially or wholly dependent on a diet of fish or fish-eating birds from Lake

Ontario and the St. Lawrence River. A second, very small, group at risk were those hunters that occasionally ate meals of game birds.

In humans, mirex is stored mainly in fat tissue, where it is not broken down. Mirex has been demonstrated to cause cancer in experimental animals and possibly carcinogenic to humans.

International

In response to the increasing international awareness concerning the environmental and human health risks associated with certain persistent organic pollutants (POPs) mirex was identified as one of the priority substances for consideration in the negotiation of a Protocol for POPs under the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution.

Due to increasing concern about the risks to human health and the environment posed by persistent organic pollutants, the United Nation Environment Program (UNEP) has initiated a process to evaluate the need to develop a global legally-binding instrument for managing these substances. At the invitation of the UNEP Governing Council the Intergovernmental Forum for Chemical Safety (IFCS) submitted a report to the Governing Council for consideration in 1997. The report concluded that there was sufficient scientific knowledge to warrant immediate international action to protect human health and the environment and to develop a global legally binding instrument to that effect. Mirex was one of the initial 12 substances to be considered under this initiative.

Expected effect of the final regulatory action

Mirex was found to meet the criteria for Track 1 substance under Canada's Toxic Substance Management Policy and as such is to be virtually eliminated from the environment. The prohibition on manufacture, use, sale, offer for, sale, or import of mirex, will work towards the objective of virtual elimination.

2.4.2.2 Is the reason for the final regulatory action relevant to the environment? ☒ Yes ☐ No

If yes, give summary of the hazard or risk evaluation related to the environment

Note: Mirex was assessed under the original *Canadian Environmental Protection Act* (CEPA). While the Act was updated in 1999, the conclusions of the assessment remain the same. This notification is based on the assessment and therefore references the original Act. Information provided here was current at the time of the original notification.

Mirex is specified on the List of Toxic Substances in Schedule I to the *Canadian Environmental Protection Act* (CEPA). The assessment of substances to determine if they are "toxic" under the CEPA is a shared responsibility of Environment Canada and Health Canada. Environment Canada assesses the environmental risks, and Health Canada assesses the human health risks. An assessment was conducted to determine if a substance is likely to harm the environment or the health of humans, taking into account the likelihood and magnitude of releases at levels occurring in the Canadian environment. Thus "toxic" in the context of CEPA is a function of both the inherent properties of a substance and the amounts, concentrations, or nature of entry of the substance in the Canadian environment.

The assessment process thus provides a framework for making science-based decisions on the effective management of toxic substances that are of concern. The determination of whether or not a substance is "toxic" must be based on sound, scientifically reliable data. Under CEPA, a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that

(d) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;

(e) constitute or may constitute a danger to the environment on which life depends; or

(f) constitute or may constitute a danger in Canada to human life or health.

The main sources of mirex in Canada were located in New York State (U.S.) in the Niagara River and the Oswego River where chemical manufacturing and fire retardant production plants were located. This transboundary movement of mirex into Canadian waters resulted in contamination of fish and fish-feeding birds with the results that mirex contaminated several ecosystems in Canada. Mirex is biologically active, accumulates in food chains, is extremely persistent and is dispersed in the environment.

Sufficient data were not available to enable a meaningful calculation of either an acceptable or tolerable level of mirex in the Canadian environment with respect to wildlife and aquatic life. It should be noted that the U.S. EPA set the maximum concentration of mirex permissible in water for fresh water and marine aquatic life at 0.001 µg/L. This value was obtained through the use of an application factor of 0.01 times the lowest concentration at which effects have been noted in crayfish, the most sensitive species tested.

Quantitative information describing the persistence of mirex was limited. However, the available information consistently indicated that the substance is persistent in the environment. For example, 12 years after its application to clay soil, 50% of the mirex originally applied was recovered as mirex and mirex-related compounds with mirex representing between 65-70% of the total residues. Mirex decomposition in the environment takes place chiefly by photolysis. Anaerobic decomposition by microorganisms can occur, but it is not extensive. Mirex is also recognized to be subject to long-range transport and has been demonstrated to persist in sediment.

On the basis of the available information, it was concluded that mirex is persistent in the environment. Mirex can accumulate in living tissues. In experimental work with aquatic organisms, all species at all trophic levels have been found to accumulate this substance. Bioaccumulation factors of 15,000 and 51,000 have been observed in lake trout captured in Lake Ontario and fathead minnows.

A comparison of concentrations of mirex in lake trout, a predator species, with those in smelt, a prey species, gives a ratio of 1.26, indicating that biomagnification is occurring. A biomagnification factor of 10^6 for mirex between its concentration in water of Lake Ontario and the St. Lawrence River and in beluga whale oil has been reported.

In experimental studies with birds, mirex has been shown to accumulate, particularly in fatty tissues. A study showed that mirex fed to roosters accumulated to about 100 times the concentration in the feed in thirty-two weeks. When the roosters were given clean food the mirex residues slowly decreased. Similar studies were conducted on mammals with similar findings. On the basis of the available information, it was concluded that mirex is a bioaccumulative substance.

Expected effect of the final regulatory action

Mirex was found to meet the criteria for Track 1 substance under Canada's Toxic Substance Management Policy and as such is to be virtually eliminated from the environment. The prohibition on manufacture, use, sale, offer for, sale, or import of mirex, will work towards the objective of virtual elimination.

2.5 Other relevant information regarding the final regulatory action

2.5.1 Estimated quantity of the chemical produced, imported, exported and used

	Quantity per year (MT)	Year
produced	Never manufactured in Canada	Not

		Applicable
imported	146	1963-1976
exported	Not Available	Not Available
used	Not Available	Not Available

2.5.2 Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions

Any state and region in a similar situation may find these Regulations relevant.

2.5.3 Other relevant information that may cover:

2.5.3.1 Assessment of socio-economic effects of the final regulatory action

For the original prohibition, the Task Force on mirex recommended formal control for the importation and use of mirex. The Task Force considered there were no uses for which mirex was indispensable in Canada. There were substitute materials for the main uses of mirex. In fact, at the time of the investigation, mirex was probably no longer marketed in Canada nor stockpiled. Therefore its use could be prohibited, as a preventative measure, without major economic or social disruption and without increasing the risk of fire hazard to the public from products that require fire retardant additives.

The amended Regulations continue previous prohibitions and therefore represent no change in Canadian activities related to this substance.

2.5.3.2 Information on alternatives and their relative risks, e.g. IPM, chemical and non-chemical alternatives

Fire retardancy in compositions formerly including mirex has been achieved through the use of substitutes or through the use of alternative plastics technology. The Task Force on mirex recognized however that there was a need to assess the hazard of substitute materials particularly the other organochlorine Dechloranes and their transformation products. No information on such assessment was found since the publication of the Task Force's report (April 1977).

2.5.3.3 Basis for the final regulatory action if other than hazard or risk evaluation

Not applicable.

2.5.3.4 Additional information related to the chemical or the final regulatory action, if any

Not available.

SECTION 3 PROPERTIES

3.1 Information on hazard classification where the chemical is subject to classification requirements

International classification systems e.g. WHO, IARC, etc.	**Hazard class**
IARC	Group 2B: possible human carcinogen

Other classification systems e.g. EU, USEPA	**Hazard class**
Not Available	Not Available
Not Available	Not Available

3.2 Further information on the properties of the chemical

3.2.1 Description of physico-chemical properties of the chemical

Mirex occurs as white, odorless crystals with the flowing properties: Melting point: 485 °C Vapour pressure: $3x10^{-7}$ mm Hg at 25 °C Practically insoluble in water. Soluble in dioxane, xylene, benzene, carbon tetrachloride, and methyl ethyl ketone.

Reference

Contaminant Profiles, Mirex, Health Canada (http://www.hc-sc.gc.ca/ehp/ehd/catalogue/bch_pubs/98ehd211/con_profiles.pdf)

3.2.2 Description of toxicological properties of the chemical

Data on the human health effects are not available. The primary organs affected by mirex in experimental animals are the liver, kidney, eyes, and thyroid.

Acute Effects

- Diarrhea due to hemorrhagic intestines.
- Increase in hematocrit.
- Hepatic effects (adaptive and toxic effects).
- Dermal/ocular effects (hair loss, production of cataracts in very young, mild epidermal proliferation; in mice).
- Toxic effects to the thyroid.
- Adrenal gland hypertrophies and releases increased levels of corticosterone.
- Decreases in serum glucose levels.
- Decreases in body weight or body weight gain greater than 10 percent.
- Abnormal behaviour (lethargy, weakness, hyper-excitability, tremors, convulsions).

Chronic Effects (Noncancer)

- Renal effects.
- Decreases in body weight or body weight gain greater than 10 percent.
- Non-precancerous lesions of the liver

Reproductive/Developmental Effects

- Reproductive and developmental effects in female and male rats.

Genotoxicity

- No information available.

Carcinogenicity

- An increased incidence of hepatocellular adenomas have been noted, but only in animals having hepatotoxicity.
- IARC has classified mirex as possibly carcinogenic to humans, based on sufficient evidence in animals, but inadequate evidence of carcinogenicity in humans.

Data

LD_{50} (rabbit, dermal): 800 mg/kg

LD_{50} (male & female rat, dermal): > 2,000 mg/kg

LD_{50} (rat, intraperitoneal): 365 mg/kg

LD_{50} (rat, intraperitoneal (corn oil)): 700 ppm

LD_{50} (mouse, intraperitoneal (corn oil)): 330 ppm

LD_{50} (female rat, oral): 365 mg/kg to 600 ± 102 mg/kg

LD_{50} (female rat, oral (corn oil)): 600 mg/kg

LD_{50} (male rat, oral (corn oil)): 740 mg/kg

LD_{50} (male rat, oral): 306 ± 71 mg/kg

LD_{50} (male & female rat, oral (peanut oil)): > 3,000 mg/kg

LD_{50} (mouse, oral): 15 - 30 ppm (90 days)

LD_{50} (female rat, oral): 6 mg/kg (90 days)

LD_{50} (rat, oral): 100 ppm

LC_{50} (female rat, oral): 275 ppm (30 days)

LC_{50} (male rat, oral): 607 ppm (30 days)

Reference

Contaminant Profiles, Mirex, Health Canada
(http://www.hc-sc.gc.ca/ehp/ehd/catalogue/bch_pubs/98ehd211/con_profiles.pdf)
Mirex, Environmental Health Criteria Document, Health and Welfare Canada, Health Protection Branch, 77-EHD-12, September 1977, 168 p.

3.2.3 Description of ecotoxicological properties of the chemical

Acute Effects

- Data available suggest that mirex can be toxic to plants and unicellular organisms but probably at relatively high concentrations.
- Avian species as a group appear to be relatively insensitive to the toxic effects of mirex.
- Several marine species are extremely sensitive to mirex, particularly crayfish, crabs and shrimps. At concentrations of mirex as low as 0.1 µg/L toxic effects were noted in crayfish, shrimp and crab juveniles exposed for 3 weeks experimentally.

Data

LD_{50} (mallard duck, oral): 2,400 mg/kg

LD_{50} (coturnix quail, oral): 10,000 ppm

LD_{50} (pheasant, oral): 1,400 - 1,600 ppm

LD_{50} (young male grackle, oral): 750 ppm (12 days)

LD_{50} (adult male cowbird, oral): 750 ppm (12 days)

LD_{50} (adult female red-winged blackbird, oral): 750 ppm (11 days)

LD_{50} (young female starling, oral): 750 ppm (9 days)

LD_{50} (quail, intraperitoneal): 300 mg/kg

Reference
Mirex, Environmental Health Criteria Document, Health and Welfare Canada, Health Protection Branch, 77-EHD-12, September 1977, 168 p.

SECTION 4 DESIGNATED NATIONAL AUTHORITY

Institution	Environment Canada Environmental Stewardship Branch Chemical Sectors Directorate Chemical Management Division
Address	Place Vincent Massey 351 St. Joseph Blvd., 17th Floor Gatineau, Quebec, K1A 0H3 CANADA
Name of person in charge	France Jacovella
Position of person in charge	Executive Director, Chemical Management Division
Telephone	(819) 956-5263
Telefax	(819) 944-0007
E-mail address	CDS-SDC@ec.gc.ca

Date, signature of DNA and official seal: France Jacovella

PLEASE RETURN THE COMPLETED FORM TO:

Secretariat for the Rotterdam Convention
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00100 Rome, Italy
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Fax: (+39 06) 5705 6347
E-mail: pic@pic.int

OR

Secretariat for the Rotterdam Convention
United Nations Environment
Programme (UNEP)
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CH – 1219 Châtelaine, Geneva, Switzerland
Tel: (+41 22) 917 8177
Fax: (+41 22) 917 8082
E-mail: pic@pic.int

Definitions for the purposes of the Rotterdam Convention according to Article 2:

(a) 'Chemical' means a substance whether by itself or in a mixture or preparation and whether manufactured or obtained from nature, but does not include any living organism. It consists of the following categories: pesticide (including severely hazardous pesticide formulations) and industrial;

(b) 'Banned chemical' means a chemical all uses of which within one or more categories have been prohibited by final regulatory action, in order to protect human health or the environment. It includes a chemical that has been refused approval for first-time use or has been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process and where there is clear evidence that such action has been taken in order to protect human health or the environment;

(c) 'Severely restricted chemical' means a chemical virtually all use of which within one or more categories has been prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed. It includes a chemical that has, for virtually all use, been refused for approval or been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment;

(d) 'Final regulatory action' means an action taken by a Party, that does not require subsequent regulatory action by that Party, the purpose of which is to ban or severely restrict a chemical.

Secretariat for the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

UNEP

FORM FOR NOTIFICATION OF FINAL REGULATORY ACTION TO BAN OR SEVERELY RESTRICT A CHEMICAL

IMPORTANT: See instructions before filling in the form

COUNTRY: EASTERN REPUBLIC OF URUGUAY

PART I: PROPERTIES, IDENTIFICATION AND USES

1.	**IDENTITY OF CHEMICAL**	
1.1	**Common name**	Mirex
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	Dodecachloropentacyclo[5.2.1.02,6.03,9.05,8]decane
1.3	**Trade names and names of preparations**	Attamex, Dechlorane, Dechlorane 4070, Dechlorane 515, Dechlorane plus 515, Declorano, Dodecacloro, Ferriamicide, Fire ant Bait, Formuquin, GC 1283, HRS 1276, Mart drim cebo, Mirex, Mirenex, Paramex, Perchlodecone, Super Isca, Zomcoop, Zompex.
1.4	**Code numbers**	
1.4.1	**CAS number**	2385-85-5
1.4.2	**Harmonized System customs code**	
1.4.3	**Other numbers (specify the numbering system)**	N° RTECS PC8225000
1.5	**Indication regarding previous notification on this chemical, if any**	
1.5.1	❑ This is a first time notification of final regulatory action on this chemical.	
1.5.2	❑ This is a modification of a previous notification of final regulatory action on this chemical. The sections modified are: _____ x This notification replaces all previously submitted notifications on this chemical.	
	Date of issue of the previous notification: 22 September 1989; 23 September 1997; 22 June 2004	

PLEASE RETURN THE COMPLETED FORM TO:

Secretariat for the Rotterdam Convention
Plant Protection Service
Plant Production and Protection Division, FAO
Viale delle Terme di Caracalla
00100 Rome, Italy

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OR

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Fax: (+41 22) 797 3460
E-mail: pic@unep.ch

1.6 Information on hazard classification where the chemical is subject to classification requirements	
International classification systems	**Hazard class**
WHO	(obsolete pesticide, cod. 0773)
IARC	Group 3B (possible carcinogenic for humans)
Other classification systems	**Hazard class**

1.7	**Use or uses of the chemical**
1.7.1	X **Pesticide**
	Describe the uses of the chemical as a pesticide in your country:
	Insecticide. Mainly used to control ants
1.7.2	❑ **Industrial**
	Describe the industrial uses of the chemical in your country:

1.8	**Properties**
1.8.1	**Description of physico-chemical properties of the chemical**
	Aspect: crystalline white solid odourless Formula: C10 CL12 Molecular weight: 545.59 Point of fusion: 485°C Steam pressure(20°C): $3x10^{-7}$ mmHg Density: ---- Solubility in water: 0.6 mg/L Solubility in organic solvents: Dioxano (15.3%); Xileno (14.4%); Bencene (12.3%); CCl_4 (7.2%) Kow logP : 5.28 Constant of Henry's: 839,37 Pascal-m^3 /mol Ref.: Toxicological Profile for Mirex and Chlordecone. U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. September 2002
1.8.2	**Description of toxicological properties of the chemical**
	Acute Toxicity: Oral - LD50 rats: 306 a >3000mg/Kg - LD50 guinea pigs M: 250 mg/Kg; F: 125 mg/Kg - LD50 dog M: 1000 mg/Kg - LD50 (skin) rabbit: 800 mg/Kg The substance can be absorbed by inhalation of aerosol, ingestion and through the skin Acute intoxication can produce migraine, irritability, loss of appetite, excitement, recurrent convulsions, depression of respiratory system with pulmonary edema and coma. Contact with skin or eyes can produce irritation Ref.: Pan-American Health Organization (OPS) World Health Organization (WHO)
1.8.3	**Description of ecotoxicological properties of the chemical**

	High potential of bioaccumulation and biomagnification. Very persistent in soils, average life: 4.2-12.5 days in air; 0.34-1.14 years in water and 3.4-10 years in soil. Light toxicity for fish, moderate for crustaceans and from light to medium for birds. It is considered not mobile on soils. Very resistant to degradation, not soluble in water, strongly linked to aquatic sediments. Highly persistent. Average life 10 years. Ref.: Pan-American Health Organization (OPS) World Health Organization (WHO)

PART II: FINAL REGULATORY ACTION

2.	**FINAL REGULATORY ACTION**	
2.1	**The chemical is:**	**X banned** **OR** **❑ severely restricted**
2.2	**Information specific to the final regulatory action**	
2.2.1	**Summary of the final regulatory action**	
	Products formulated with Mirex are included in the Stockholm Convention for POP's because their high toxicity, persistence and bioaccumulation, and can lead to severe negative effects for the environment and the human health. The use of these products has been banned in Uruguay and in several countries too, this measure does not represent an impact on trade and domestic production. There are alternatives less harmful for plagues control, which, in turn, allow the application of the environmental national policy for the protection of the environment. (Law#17283, Art. 6th. 28 November 2002). Considering the above mentioned, it is prohibited import, production and use, in any means or under whatever regime throughout the country, of products based on mirex.	
2.2.2	**Reference to the regulatory document**	
	Decree 375/2005. President of the Eastern Republic of Uruguay. Montevideo 3 October 2005.	
2.2.3	**Date of entry into force of the final regulatory action**	
	3 October 2005	

2.3	**Was the final regulatory action based on a risk or hazard evaluation?**	**❑ Yes ❑ No**
	If yes, give information on such evaluation	
	It was based on the inherent hazards of mirex-based products. This substance is under the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's. Its persistency, bioaccumulation and high toxicity represent a high risk for the environment and the human health	
	Reference to the relevant documentation	
	Substance included under the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's.	

2.4	**Reasons for the final regulatory action**	
2.4.1	**Is the reason for the final regulatory action relevant to the human health?**	**X Yes ❑ No**
	If yes, give summary of the known hazards and risks presented by the chemical to human health, including the health of consumers and workers	
	It is based on the inherent harms of mirex-based products. The substance is included in the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's. Its persistency, bioaccumulation and high toxicity represent a high risk for the human health	
	Reference to the relevant documentation	
	Substance included under the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's	
	Expected effect of the final regulatory action	
	Prohibiting import, production and use of products mirex-based, will reduce all possibilities of human exposition, reducing consequently the associated risks for the human health.	

2.4.2	**Is the reason for the final regulatory action relevant to the environment?**	**X Yes ❑ No**
	If yes, give summary of the known hazards and risks to the environment	

	It is based on the inherent harms of mirex-based products. The substance is included in the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's. Its persistency, bioaccumulation and high toxicity represent a high risk for the environment and all living organisms
	Reference to the relevant documentation
	Substance included under the PIC Procedure (FAO/UNEP) and under Stockholm Convention for POP's
	Expected effect of the final regulatory action
	Prohibiting import, production and use of products mirex-based, will reduce risks for fauna, flora and the ecosystem in general

2.5	**Category or categories where the final regulatory action has been taken**	
2.5.1	**Final regulatory action has been taken for the chemical category**	❑ **Industrial**
	Use or uses prohibited by the final regulatory action	
	Prohibited all uses	
	Use or uses that remain allowed	

2.5.2	**Final regulatory action has been taken for the chemical category**	X **Pesticide**
	Formulation(s) and use or uses prohibited by the final regulatory action	
	All uses and all formulations mirex-based	
	Formulation(s) and use or uses that remain allowed	

2.5.3 Estimated quantity of the chemical produced, imported, exported and used, where available.

	Quantity per year (MT)	Year
Produced		
Imported		
Exported		
Used		

2.6	**Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions**
	It is not expected any relevant negative effect in other Countries or Regions

2.7	**Other relevant information that may cover:**
2.7.1	**Assessment of socio-economic effects of the final regulatory action**
	It is not expected any relevant socioeconomic effect, because the alternatives are not costly

2.7.2	**Information on alternatives and their relative risks**
2.7.3	**Relevant additional information**

PART III : GOVERNMENT AUTHORITIES

Ministry/Department and authority responsible for issuing/enforcing the final regulatory action	
Institution	Ministry of Livestock, Agriculture and Fisheries
Address	Millàn 4703
Telephone	+5982 3098410 ext. 103

Telefax	
E-mail address	halmirati@mgap.gub.uy
Designated National Authority	
Institution	Ministry of Livestock, Agriculture and Fisheries
Address	Millàn 4703
Name of person in charge	Ing. Agr. Humberto Almirati
Position of person in charge	Director of General Direction of Agricultural Services
Telephone	+5982 3098410 ext. 103
Telefax	
E-mail address	halmirati@mgap.gub.uy

Date, signature of DNA and official seal: _____

Secretaría del Convenio de Rotterdam sobre el procedimiento de consentimiento fundamentado previo aplicable a ciertos plaguicidas y productos químicos peligrosos objeto de comercio internacional

UNEP

FORMULARIO
NOTIFICACIÓN DE MEDIDA REGLAMENTARIA FIRME PARA PROHIBIR O RESTRINGIR RIGUROSAMENTE UN PRODUCTO QUÍMICO

IMPORTANTE: Véanse las instrucciones antes de rellenar el formulario

PAÍS: REPÚBLICA ORIENTAL DEL URUGUAY

PARTE I: PROPIEDADES, IDENTIFICACIÓN Y USOS

1.	**IDENTIDAD DEL PRODUCTO QUÍMICO**	
1.1	**Nombre común**	Mirex
1.2	**Nombre del producto químico en una nomenclatura internacionalmente reconocida (por ejemplo, la de la UIQPA), si tal nomenclatura existe**	1,1a,2,2,3,3a,4,5,5a,5b,6-dodecacloroacta-hidro-1,3,4-meteno-1H-ciclobuta[*cd*]pentaleno.
1.3	**Nombres comerciales y nombres de las preparaciones**	Attamex, Dechlorane, Dechlorane 4070, Dechlorane 515, Dechlorane plus 515, Declorano, Dodecacloro, Ferriamicide, Fire Ant Bait, Formuquin, GC 1283, HRS 1276, Mart drim cebo, Mirex, Mirenex, Paramex, Perchlodecone, Super Isca, Zomcoop, Zompex.
1.4	**Números de código**	
1.4.1	**Número CAS**	2385-85-5
1.4.2	**Código aduanero del Sistema Armonizado**	
1.4.3	**Otros números (especificar el sistema de numeración)**	RTECS PC8225000

1.5	**Indicación respecto de una notificación anterior sobre este producto químico, si la hubiere**
1.5.1	θ La presente es una primera notificación de una medida reglamentaria firme respecto de este producto químico.
1.5.2	θ La presente es una modificación de una medida reglamentaria firme de una notificación presentada anteriormente respecto de este producto químico. Xθ Esta notificación sustituye todas las notificaciones presentadas con anterioridad respecto de este producto químico.

SÍRVASE ENVIAR DE VUELTA EL FORMULARIO RELLENADO A:

Secretaría del Convenio de Rotterdam
Plant Protection Service
Plant Production and Protection Division, FAO
Viale delle Terme di Caracalla
00100 Rome, Italy
Téléfono: (+39 06) 5705 3441
Fax: (+39 06) 5705 6347
Correo electrónico: pic@fao.org

O

Secretaría del Convenio de Rotterdam
UNEP Chemicals
11-13, Chemin des Anémones
CH – 1219 Châtelaine, Geneva, Switzerland
Téléfono: (+41 22) 917 8296
Fax: (+41 22) 917 8082
Correo electrónico: pic@pic.int

	Fecha de emisión de la notificación anterior: 22 de setiembre de 1989; 23 de setiembre de 1997; 22 de junio de 2004

1.6 Información sobre clasificación de peligros, si el producto químico está sujeto a requisitos de clasificación

Sistemas de clasificación internacionales	Categoría de peligro
OMS	(plaguicida obsoleto, cód. 0773)
IARC	Grupo 2B (posible carcinógeno en humanos)
Otros sistemas de clasificación	**Categoría de peligro**

1.7 Uso o usos del producto químico

1.7.1 X θ **Plaguicida**

Describa los usos del producto químico como plaguicida en su país:

Insecticida. Usado principalmente para control de hormigas.

1.7.2 θ **Industrial**

Describa los usos industriales del producto químico en su país:

1.8 Propiedades

1.8.1 Descripción de las propiedades fisico-químicas

Aspecto:	Sólido cristalino inodoro blanco
Fórmula:	$C_{10}Cl_{12}$
Peso Molecular	545.59
Punto de Fusión:	485 °C
Presión de vapor (20°C):	$3x10^{-7}$ mmHg
Densidad	-----
Solubilidad en agua (25°C)	0.6 mg/L
Solubilidad en solventes orgánicos:	Dioxano (15.3 %); Xileno (14.3%); Benceno (12.3%); CCl_4 (7.2%).
Kow logP:	5.28
Constante de Ley de Henry	839,37 pascal-m3/mol

Ref.: Toxicological Profile for Mirex and Chlordecone. U.S. Departament of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. September 2002

1.8.2 Descripción de las propiedades toxicológicas

	Toxicidad aguda. Oral - DL50 (oral) rata: 306 a > 3000 mg/kg. - DL50 (oral) conejillo de indias M: 250 mg/kg; F: 125 mg/kg. - DL50 (oral) perro M: 1000 mg/kg. - DL50 (piel) conejo: 800 mg/kg. Puede ser absorbido por las vías respiratoria, digestiva y dérmica. La intoxicación aguda produce cefalea, irritabilidad, pérdida del apetito, excitación, convulsiones recurrentes, depresión del sistema respiratorio con edema pulmonar y coma. El contacto con la piel o los ojos puede producir irritación. Ref.: Organización Panamericana de la Salud (OPS) Organización Mundial de la Salud (OMS)
1.8.3	**Descripción de las propiedades ecotoxicológicas**
	Posee alto potencial de bioacumulación y biomagnificación. Es muy persistente en el suelo con una vida medioa de 4.2-12.5 días en el aire; 0.34-1.14 años en el agua y de 3.4 años hasta 10 años en el suelo. Presenta toxicidad ligera para peces; moderada en crustáceos y ligera a mediana para aves. Se considera inmóvil en el suelo. Es muy resistente a la degradación, insoluble en agua, se liga fuertemente a los sedimentos acuáticos. Es altamente persistente Es Vida media: hasta 10 años Ref.: Organización Panamericana de la Salud (OPS) Organización Mundial de la Salud (OMS)

PARTE II. MEDIDA REGLAMENTARIA FIRME

2.	**MEDIDA REGLAMENTARIA FIRME**
2.1	**El producto químico está: X prohibido O rigurosamente restringido**
2.2	**Información específica sobre la medida reglamentaria firme**
2.2.1	**Resumen de la medida reglamentaria firme** Los productos a base de Mirex están incluidos en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes por ser elevadamente tóxicos, persistentes y bioacumulables, pudiendo producir serios efectos negativos para el ambiente y la salud humana. El uso de estos productos ya ha sido prohibido en Uruguay y en varios países, no presentando esta medida un impacto sobre el comercio y la producción nacional. Existen productos sustitutos menos nocivos para el control de plagas, que a la vez permiten asegurar la aplicación de los principios de la política ambiental nacional de protección del ambiente. (Artículo 6º de la Ley Nº17.283, de 28 de noviembre de 2002). Considerando lo anteriormente expuesto, se prohibe la introducción, producción, y la utilización, en cualquier forma o bajo cualquier régimen en todo el país, de productos a base de mirex.
2.2.2	**Referencia al documento reglamentario** Decreto 375/2005. Decreto del Presidente de la República Oriental del Uruguay. Montevideo, 3 de octubre 2005.
2.2.3	**Fecha de entrada en vigor de la medida reglamentaria firme** 3 de Octubre de 2005.

2.3	**La medida reglamentaria firme se tomó sobre la base de una evaluación de los riesgos o peligros?**	θ **Sí** θ **No**
	En caso afirmativo, proporcione información sobre dicha evaluación	
	Se realizó en base a los peligros inherentes a los productos a base de mirex. Esta sustancia está incluida en el Procedimiento de Consentimiento Fundamentado Previo (FAO/PNUMA) y en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes. Su persistencia, bioacumulación y su elevada toxicidad, presentan un elevado riesgo para el ambiente y la salud humana en general.	
	Referencia a la documentación pertinente	
	Sustancia incluida en el Procedimiento de Consentimiento Fundamentado Previo. (FAO/PNUMA) Sustancia incluida en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes	

2.4	**Motivos para tomar la medida reglamentaria firme**	
2.4.1	**El motivo por el que se adoptó la medida reglamentaria firme guarda relación con la salud humana?**	**X**θ **Sí** θ **No**
	En caso afirmativo, proporcione un resumen de los peligros y los riesgos conocidos que el producto químico plantea para la salud humana, incluida la salud de los consumidores y de los trabajadores	
	Se realizó en base a los peligros inherentes a los productos a base de mirex. Esta sustancia está incluida en el Procedimiento de Consentimiento Fundamentado Previo (FAO/PNUMA) y en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes. Su persistencia, bioacumulación y su elevada toxicidad, presentan un elevado riesgo para la salud humana.	
	Referencia a la documentación pertinente	
	Sustancia incluida en el Procedimiento de Consentimiento Fundamentado Previo. (FAO/PNUMA) Sustancia incluida en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes.	
	Efecto previsto de la medida reglamentaria firme	
	Prohibir la introducción, producción y la utilización de productos a base de mirex reducirá todas las posibles vías de exposición humana, con la consecuente disminución de los riesgos asociados a la salud.	

2.4.2	**El motivo por el que se adoptó la medida reglamentaria firme guarda relación con el medio ambiente?**	**X**θ **Sí** θ **No**
	En caso afirmativo, proporcione un resumen de los peligros y riesgos conocidos respecto del medio ambiente	
	Se realizó en base a los peligros inherentes a los productos a base de mirex. Esta sustancia está incluida en el Procedimiento de Consentimiento Fundamentado Previo (FAO/PNUMA) y en el Convenio de Estocolmo sobre Contaminantes Orgánicos Persistentes. Su persistencia, bioacumulación y su elevada toxicidad, presentan un elevado riesgo para el ambiente y para los organismos que en él habitan.	
	Referencia a la documentación pertinente	

	Sustancia incluida en el Procedimiento de Consentimiento Fundamentado Previo. (FAO/PNUMA) Sustancia incluida en el Convenio de Estocolmo sobre Contamnantes Orgánicos Persistentes.
	Efecto previsto de la medida reglamentaria firme Prohibir la introducción, producción y la utilización de productos a base de mirex en todo el país reducirá los riesgos para la fauna, la flora y para el ecosistema en general.

2.5	**Categoría o categorías con respecto a las cuales se ha adoptado la medida reglamentaria firme**	
2.5.1	**La medida reglamentaria firme se ha tomado para la categoría del producto químico**	θ **Industrial**
	Uso o usos prohibidos por la medida reglamentaria firme Son prohibidas todos los usos	
	Uso o usos que se siguen autorizando	

2.5.2	**La medida reglamentaria firme se ha tomado para la categoría del producto químico**	Xθ **Plaguicida**
	Formulación (o formulaciones) y uso (o usos) prohibidos por la medida reglamentaria firme Son prohibidas todas las formas de uso y todas las formulaciones a base de mirex.	
	Formulación o formulaciones y uso o usos que se siguen autorizando	

2.5.3 Estimación de las cantidides del producto químico producido, importado, exportado y utilizado, en los casos en que se disponga de ese dato, si fuese posible

	Cantidad al año (TM)	**Año**
Se produce		
Se importa		
Se exporta		
Se usa		

2.6	**Indicación, en la medida de lo posible, de la probabilidad de que la medida reglamentaria firme afecte a otros Estados o regiones**
	No se espera ningún efecto negativo importante en otros Estados o regiones.

2.7	**Información adicional pertinente que puede incluir:**

2.7.1	**Una evaluación de los efectos socioeconómicos de la medida reglamentaria firme** No se espera un efecto socioeconómico importante ya que existen productos sustitutos que no difieren significativamente en los costos.

2.7.2	**Información sobre alternativas y sus riesgos relativos**
2.7.3	**Información complementaria pertinente**

PARTE III: AUTORIDADES GUBERNAMENTALES

Ministerio/Departamento y autoridad encargada de la emisión/aplicación de la medida reglamentaria firme	
Institución	Ministerio de Ganadería Agricultura y Pesca
Dirección	Millán 4703
Teléfono	+ 5982 3098410 interno 103
Telefax	
Dirección electrónica	halmirati@mgap.gub.uy
Autoridad nacional designada	
Institución	Ministerio de Ganadería Agricultura y Pesca
Dirección	Millán 4703
Nombre de la persona responsable	Ing. Agr. Humberto Amirati
Cargo de la persona responsable	Director de la Dirección General de Servicios Agrícolas
Teléfono	+ 5982 3098410 interno 103
Telefax	
Correo electrónico	halmirati@mgap.gub.uy

Fecha, firma de la autoridad nacional designada y sello oficial: _____

Ing. Agr. HUMBERTO ALMIRATI LOMBARDI
DIRECTOR GENERAL
PROGRAMA 004
M.G.A.R • SERVICIOS AGRICOLAS

Secretariat for the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

UNEP

FORM FOR NOTIFICATION OF FINAL REGULATORY ACTION TO BAN OR SEVERELY RESTRICT A CHEMICAL

IMPORTANT: See instructions before filling in the form

COUNTRY: CUBA

PART I: PROPERTIES, IDENTIFICATION AND USES

1.	**IDENTITY OF CHEMICAL**	
1.1	**Common name**	MIREX
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	Dodecachloropentacyclo[5.2.1.02,6.03,9.05,8]decane
1.3	**Trade names and names of preparations**	MIREX
1.4	**Code numbers**	
1.4.1	**CAS number**	2385-85-5
1.4.2	**Harmonized System customs code**	
1.4.3	**Other numbers (specify the numbering system)**	

1.5	**Indication regarding previous notification on this chemical, if any**
1.5.1	x This is a first time notification of final regulatory action on this chemical.
1.5.2	❑ This is a modification of a previous notification of final regulatory action on this chemical. The sections modified are: _____ ❑ This notification replaces all previously submitted notifications on this chemical.
	Date of issue of the previous notification: _____

PLEASE RETURN THE COMPLETED FORM TO:

Secretariat for the Rotterdam Convention
Plant Protection Service
Plant Production and Protection Division, FAO
Viale delle Terme di Caracalla
00100 Rome, Italy

Tel: (+39 06) 5705 3441
Fax: (+39 06) 5705 6347
E-mail: pic@fao.org

OR

Secretariat for the Rotterdam Convention
UNEP Chemicals
11-13, Chemin des Anémones
CH – 1219 Châtelaine, Geneva, Switzerland

Tel: (+41 22) 917 8183
Fax: (+41 22) 797 3460
E-mail: pic@unep.ch

1.6 Information on hazard classification where the chemical is subject to classification requirements	
International classification systems	**Hazard class**
OMS II (acute oral toxicity)	
Other classification systems	**Hazard class**

1.7	**Use or uses of the chemical**
1.7.1	x **Pesticide**
	Describe the uses of the chemical as a pesticide in your country:
	To control cutters ants
1.7.2	❑ **Industrial**
	Describe the industrial uses of the chemical in your country:

1.8	**Properties**
1.8.1	**Description of physico-chemical properties of the chemical**
	Slightly soluble in water and highly soluble in organic solvents. The compound degrades very slowly through the sunlight and the pH of soil and water. Only degrades by microbial via. The chemical tends to accumulate in different compartments of the environment and in foods containing fat.

1.8.2	**Description of toxicological properties of the chemical**
	Mirex is toxic orally and through skin contacts (especially liquid formulations) as well as thru inhalation of dust. It acts as a stimulant of the central nervous system. After accidental ingestion or over exposure, the symptoms that may occur are headache, dizziness, nausea, vomiting, weakness in the legs and convulsions. Organochlorines can cause respiratory depression. It also sensitizes the heart to endogenous catecholamine causing ventricular fibrillation and cardiac arrest in severe cases.
1.8.3	**Description of ecotoxicological properties of the chemical**
	The Mirex is one of the most stable organochlorine insecticides. Although its levels in the environment in general are low, is widespread in the environment biotic and abiotic. Mirex is accumulated and biomagnified. It's strongly absorbed in sediments and has low solubility in water. The delayed onset of its toxic effects and mortality is typical of Mirex poisoning. The long-term toxicity of Mirex is uniformly high. It's toxic for a range of aquatic organisms, being particularly sensitive shellfishes. Although there is no field data available, the adverse effects of long-term exposure at low levels of Mirex, combined with its persistence, suggest that its use is a environmental risk in the long term.

PART II: FINAL REGULATORY ACTION

2.	**FINAL REGULATORY ACTION**	
2.1	**The chemical is:** X **banned** **OR** ❑ **severely restricted**	
2.2	**Information specific to the final regulatory action**	
2.2.1	**Summary of the final regulatory action**	
	Prohibited importation and use of all pesticides formulations containing the active ingredient Mirex, for its high persistence in the environment and bioaccumulation in living beings and for being a substance of high toxicity to humans.	
2.2.2	**Reference to the regulatory document**	
	Resolution 49/2001, Ministry of Public Health	
2.2.3	**Date of entry into force of the final regulatory action**	
	1 November 2001	

2.3	**Was the final regulatory action based on a risk or hazard evaluation?**	❑ **Yes** X **No**
	If yes, give information on such evaluation	
	Reference to the relevant documentation	

2.4	**Reasons for the final regulatory action**	
2.4.1	**Is the reason for the final regulatory action relevant to the human health?**	X **Yes** ❑ **No**
	If yes, give summary of the known hazards and risks presented by the chemical to human health, including the health of consumers and workers	
	Mirex residues in body tissues of people exposed Bio-accumulation in living beings Highly toxic to humans.	
	Reference to the relevant documentation	
	Expected effect of the final regulatory action	
	Gradual reduction of toxic effects due to the appearance of Mirex residues in human tissues	

2.4.2	**Is the reason for the final regulatory action relevant to the environment?**	X **Yes** ❑ **No**
	If yes, give summary of the known hazards and risks to the environment	
	Mirex residues in different environments (water, soil, sediment, etc.) as well as in the tissues of birds and other species and in the fauna and flora. High persistence in the environment	
	Reference to the relevant documentation	

	Expected effect of the final regulatory action
	Reduction of toxic effects on various species of wild fauna and flora

2.5	**Category or categories where the final regulatory action has been taken**	
2.5.1	**Final regulatory action has been taken for the chemical category**	❑ **Industrial**
	Use or uses prohibited by the final regulatory action	
	Use or uses that remain allowed	

2.5.2	**Final regulatory action has been taken for the chemical category**	X **Pesticide**
	Formulation(s) and use or uses prohibited by the final regulatory action	
	All pesticide formulations containing the active ingredient mirex. Banned all uses	
	Formulation(s) and use or uses that remain allowed	

2.5.3 Estimated quantity of the chemical produced, imported, exported and used, where available.

	Quantity per year (MT)	**Year**
Produced		
Imported	5 Tm/year	
Exported		
Used	4.6 Tm/year	

2.6	**Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions**

2.7	**Other relevant information that may cover:**
2.7.1	**Assessment of socio-economic effects of the final regulatory action**

2.7.2	**Information on alternatives and their relative risks**
	There are several alternatives as abamectin and fipronil baits
2.7.3	**Relevant additional information**

PART III : GOVERNMENT AUTHORITIES

Ministry/Department and authority responsible for issuing/enforcing the final regulatory action	
Institution	
Address	
Telephone	
Telefax	
E-mail address	
Designated National Authority	
Institution	Central Register of Pesticides
Address	Ayuntamiento No. 231 entre Lombillo y San Pedro
Name of person in charge	José A. de la Paz Álvarez
Position of person in charge	Chief
Telephone	870-1635
Telefax	870-1635
E-mail address	registro@sanidadvegetal.cu

Date, signature of DNA and official seal: ____20 April 2008 _____

FORMULARIO DE NOTIFICACIÓN

DE LA MEDIDA REGLAMENTARIA FIRME PARA PROHIBIR O RESTRINGIR RIGUROSAMENTE UN PRODUCTO QUÍMICO

País:	CUBA

SECCIÓN 1 IDENTIDAD DEL PRODUCTO QUÍMICO SUJETO A LA MEDIDA REGLAMENTARIA FIRME

1.1	**Nombre**	MIREX
1.2	**Nombre del producto químico en una nomenclatura internacionalmente reconocida (por ejemplo, la de UIQPA), si existe tal nomenclatura**	Dodecacloropentaciclo[5.2.1.02,6.03,9.05,8]decano)
1.3	**Nombres comerciales y nombres de las preparaciones**	MIREX

1.4 Números de código

1.4.1	Número de CAS	2385-85-5
1.4.2	Código aduanero del sistema armonizado	
1.4.3	Otra nomenclatura (especificar el sistema de numeración)	

1.5 Indicación, si la hubiere, relativa a una notificación anterior sobre este producto químico

1.5.1 **X** La presente es la primera notificación de una medida reglamentaria firme relativa a este producto químico.

1.5.2 ☐ Esta notificación sustituye todas las notificaciones presentadas con anterioridad relativas a este producto químico.

Fecha de emisión de la notificación anterior: _____

SECCIÓN 2 MEDIDA REGLAMENTARIA FIRME

2.1 El producto químico está:

X prohibido O ☐ rigurosamente restringido

2.2 Información especifica sobre la medida reglamentaria firme

2.2.1 Resumen de la medida reglamentaria firme

Se prohíbe la importación y uso de todos las foremulaciones plaguicidas que contengan como ingrediente activo al Mirex, por su elevada persistencia en el medio ambiente y su bioacumulación en los seres vivos y por ser una sustancia de elevada toxicidad para los seres humanos.

2.2.2 Referencia al documento reglamentario, p.e., dónde está registrada o publicada la decisión

Resolución 49/2001 del Ministerio de Salud Pública

2.2.3 Fecha de la entrada en vigor de la medida reglamentaria firme

1 de Noviembre de 2001

2.3 **Categoría o categorías respecto a las cuales se ha adoptado la medida reglamentaria firme**

2.3.1 Uso o usos del producto químico en su país antes de adoptar la medida reglamentaria firme

Para el control de hormigas cortadoras

2.3.2 La medida reglamentaria firme se ha adoptado para la categoría del producto químico ☐ Industrial

Uso o usos prohibidos por la medida reglamentaria firme

Uso o usos que se siguen autorizando (sólo en caso de rigurosamente restringido)

2.3.3 La medida reglamentaria firme se ha adoptado para la categoría del producto químico **X** Plaguicida

Formulación(es) y uso o usos prohibidos por la medida reglamentaria firme

Todas las formulaciones de plaguicidas que contengan como ingrediente activo el mirex. Se prohíben todos los usos.

Formulación(es) y uso o usos que se siguen autorizando (sólo en caso de rigurosamente restringido)

2.4 **¿La medida reglamentaria firme se adoptó sobre la base de una evaluación de los riesgos o peligros?**

☐ **Sí**

X **No** (En caso de respuesta negativa, completar también la sección 2.5.3.3)

2.4.1 En caso afirmativo, proporcione la documentación pertinente, que describe la evaluación de riesgos o peligros

2.4.2 Resumen descriptivo de la evaluación de riesgos o peligros sobre los que se ha basado la prohibición o la rigurosa restricción

2.4.2.1 ¿El motivo por el que se adoptó la medida reglamentaria firme guarda relación con la salud humana? **X** Sí ☐ No

En caso afirmativo, proporcione un resumen de los peligros o riesgos relacionados con la salud humana, incluida la salud de los consumidores y de los trabajadores

Aparición de residuos de Mirex en los tejidos humanos de personas expuestas Bioacumulación en los seres vivos Elevada toxicidad para los seres humanos.

Efecto previsto de la medida reglamentaria firme

Disminución paulatina de efectos tóxicos debido a la aparición de residuos de Mirex en tejido humano

2.4.2.2 ¿El motivo por el que se adoptó la medida reglamentaria firme guarda relación con el medio ambiente? **X** Sí ☐ No

En caso afirmativo, proporcione un resumen de los peligros y riesgos relacionados con el medio ambiente

Aparición de residuos de Mirex en distintos compartimientos ambientales (agua, suelo, sedimento, etc.) así como en los tejidos de las aves y otras especies e la fauna y flora silvestre. Elevada persistencia en el medio ambiente.

Efecto previsto de la medida reglamentaria firme

Reducción de los efectos tóxicos sobre diversas especies de la flora y fauna silvestre.

2.5 Otra información pertinente relativa a la medida reglamentaria firme

2.5.1 Cantidad estimada del producto químico producido, importado, exportado y utilizado

	Cantidad por año (toneladas)	Año
Producida		
Importada	5 toneladas/año	
Exportada		
Utilizada	4,6 toneladas / año	

2.5.2 Indicar, en la medida de lo posible, la probabilidad de que la medida reglamentaria firme afecte a otros estados o regiones

2.5.3 Información adicional pertinente que pueda incluir:

2.5.3.1 Evaluación de los efectos socioeconómicos de la medida reglamentaria firme

2.5.3.2 Información sobre alternativas y sus riesgos relativos, p.ej., el MIP alternativas químicas y no químicas

Existen varias alternativas como cebos de abamectina y fipronil

2.5.3.3 Bases para la medida reglamentaria firme con excepción de la evaluación de riesgos y peligros

2.5.3.4 Información adicional, si la hubiere, relativa al producto químico o a la medida reglamentaria firme

SECCIÓN 3 PROPIEDADES

3.1 Información sobre clasificación de peligros si el producto químico está sujeto a requisitos de clasificación

Sistemas de clasificación internacionales p.e., OMS, CIIC, etc.	**Categoría de peligro**
OMS II (Toxicidad aguda oral)	

Otros sistemas de clasificación p.e., UE, USEPA	**Categoría de peligro**

3.2 Ulterior información sobre las propiedades del producto químico

3.2.1 Descripción de las propiedades físico-químicas del producto químico

Poco soluble en agua y altamente soluble en solventes orgánicos. El compuesto se degrada muy lentamente por medio de la luz solar y del pH del suelo y del agua. Su única degradación es por vía microbiana. Este producto químico tiende a acumularse en los diferentes compartimientos del medio ambiente y en alimentos que contengan grasas.

Referencia

3.2.2 Descripción de las propiedades toxicológicas del producto químico

El **Mirex** es tóxico por vía oral y por contacto con la piel (especialmente las formulaciones líquidas) así como por inhalación del polvo. Actúa como estimulante del sistema nervioso central. A continuación de una ingestión accidental o sobre exposición, los síntomas que pueden aparecer son dolor de cabeza, mareo, náusea, vómito, debilidad en las piernas y convulsiones. Los organoclorados pueden causar depresión respiratoria. También sensibiliza el corazón a la catecolamina endógenas ocasionando fibrilación ventricular y paro cardiaco en casos graves.

Referencia

3.2.3 Descripción de las propiedades ecotoxicológicas del producto químico

El Mirex es uno de los insecticidas organoclorados más estables. Aunque sus niveles en el medio ambiente en general sean bajos, está muy difundido en el medio ambiente biótico y abiótico. El Mirex es acumulado y biomagnificado. Se absorbe fuertemente en los sedimentos y tiene baja solubilidad en el agua. El inicio retardado de sus efectos tóxicos y de la mortalidad es típico del envenenamiento con Mirex. La toxicidad a largo plazo del Mirex es uniformemente alta. Es tóxico para una gama de organismos acuáticos, siendo particularmente sensitivos los crustáceos. Aunque no hay datos de campo disponibles, los efectos adversos de la exposición a largo plazo a bajos niveles del Mirex, combinado con su persistencia, sugieren que su uso representa un riesgo para el medio ambiente a largo plazo.

Referencia

SECCIÓN 4 AUTORIDAD NACIONAL DESIGNADA

Institución	Registro Central de Plaguicidas
Dirección	Ayuntamiento No. 231 entre Lombillo y San Pedro
Nombre de la persona responsable	José A. de la Paz Álvarez
Cargo de la persona responsable	Jefe
Teléfono	870-1635
Fax	870-1635
Correo electrónico	registro@sanidadvegetal.cu

Fecha, firma de la AND y sello oficial: __20-04-2008_____

SÍRVASE REMITIR EL FORMULARIO RELLENADO A:

Secretaría para el Convenio de Rótterdam
Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO)
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Fax: (+39 06) 5705 6347
Correo electrónico: pic@pic.int

OR

Secretaría para el convenio de Rótterdam
Programa de las Naciones Unidas para el Medio Ambiente (PNUMA)
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Definiciones utilizadas en el Convenio de Rótterdam según el artículo 2:

a) Por 'producto químico' se entiende toda sustancia, sola o en forma de mezcla o preparación, ya sea fabricada u obtenida de la naturaleza, excluidos los organismos vivos. Ello comprende las siguientes categorías: plaguicida (incluidas las formulaciones plaguicidas extremadamente peligrosas) y producto químico industrial;

b) Por 'producto químico prohibido' se entiende aquél cuyos usos dentro de una o más categorías hayan sido prohibidos en su totalidad, en virtud de una medida reglamentaria firme, con objeto de proteger la salud humana o el medio ambiente. Ello incluye los productos químicos cuya aprobación para primer uso haya sido denegado o que las industrias hayan retirado del mercado nacional o de ulterior consideración en el proceso de aprobación nacional cuando haya pruebas claras de que esa medida se haya adoptado con objeto de proteger la salud humana o el medio ambiente;

c) Por 'producto químico rigurosamente restringido' se entiende aquél cuyos usos dentro de una o más categorías hayan sido prohibidos casi en su totalidad, en virtud de una medida reglamentaria firme, para proteger la salud humana o el medio ambiente, pero del que se sigan autorizando algunos usos específicos. Ello incluye los productos químicos cuya aprobación para casi cualquier uso haya sido denegada o que las industrias hayan retirado del mercado nacional o de ulterior consideración en el proceso de aprobación nacional, cuando haya pruebas claras de que esa medida se haya adoptado con objeto de proteger la salud humana o el medio ambiente;

d) Por 'medida reglamentaria firme' se entiende toda medida para prohibir o restringir rigurosamente un producto químico adoptada por un país Parte que no requiera la adopción de ulteriores medidas reglamentarias por esa Parte.