



UNEP



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**Rotterdam Convention on the Prior Informed
Consent Procedure for Certain Hazardous
Chemicals and Pesticides in International Trade
Chemical Review Committee**

Third meeting

Rome, 20–23 March 2007

Item 5 (b) (ii) of the provisional agenda*

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

Endrin

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. The Secretariat has received two notifications from two PIC regions relating to endrin that meet the information requirements of Annex I to the Convention (North America (Canada) and Europe (Bulgaria)). Summaries of these notifications were published in PIC Circular XXII of December 2005. The notifications, as received from the notifying countries, are set out in the annex to the present note.
3. The supporting documentation provided by Canada and Bulgaria may be found in documents UNEP/FAO/RC/CRC.3/9/Add.1 and UNEP/FAO/RC/CRC.3/9/Add.2, respectively.

* UNEP/FAO/RC/CRC.3/1.

Annex

- **Notification of final regulatory action for endrin by Canada**
- **Notification of final regulatory action for endrin by Bulgaria**



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

IMPORTANT: See instructions before filling in the form

COUNTRY: CANADA

PART I: PROPERTIES, IDENTIFICATION AND USES

1. IDENTITY OF CHEMICAL		
1.1	Common name	Endrin
1.2	Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists	<p>IUPAC: (1R,4S,4aS,5S,6S,7R,8R,8aR)-1,2,3,4,10,10-hexachloro-1,4,4a,5,6,7,8,8a-octahydro-6,7-epoxy-1,4:5,8-dimethanonaphthalene, or 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-exo-1,4-exo-5,8-dimethanonaphthalene</p> <p>CAS: (1a?,2?,2a?,3?,6?,6a?,7?,7a?)-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-2,7:3,6-dimethanonaphth[2,3-b]oxirene</p>
1.3	Trade names and names of preparations	<p>1% Endrin Dust Insecticide 1% Endrin Dust 1.0% Endrin Dust 1.6-E Emulsified Liquid 2 Federee 20% Concentrate 20 Emulsified Concentrate Insecticide 20% Endrin Emulsified Concentrate 20% Endrin Emulsified 20 Emulsified Concentrate 20% Endrin E.C. ACS Endrin-20 E.C. Insecticide</p>

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

OR

Secretariat for the Rotterdam Convention
UNEP Chemicals

11-13, Chemin des Anémones
CH – 1219 Châtelaine, Geneva, Switzerland

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

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

		<p>African Violet Spray (For Control of Mites) Calsa Endrin 20 Emulsifiable Concentrate Insecticide Calsa Endrin 1% Dust Insecticide Chemsect Brand Chem-endrin E.C. Insecticide Co-op Endrin E.C. or Wil-kil Chlordane 5 Dust Copper-endrin Dust Fungicide-insecticide Dowfume E-59 Spot Fumigant (Endrin 1%, Zineb 3.9% Dust) Endrin 1% Dust Insecticide Endrin 1 Dust Endrin 1% - Copper 7% Dust Insecticide-fungicide Endrin 1% - Copper 7% Insecticide-fungicide Dust Endrin 1-Zineb 3.9% Dust Insecticide-fungicide Endrin 2 Emulsified Concentrate Endrin 20 Emulsifiable Concentrate Endrin 20 Insecticide Endrin 20 E.C. Endrin 20 Emulsifiable Insecticide Concentrate Endrin 200 E.C. Emulsified Concentrate for Insect Control on Rapeseed Crops Endrin Dust No. 1 1% Endrin Emulsifiable Liquid Insecticide Insecticide Emulsifiable Solution Mackoend Mackwin Dust No. 625 Niagara Endrin 1 1/2 Dust Orchard Brand Endrin Em-2 Organic Endrin 6-1 Dust (With Zineb?) Penco Endrin Emulsifiable Shell Endrin 20 E.C. Insecticide Shell Endrin 75% W.P. Staples Endrin Emulsible Concentrate Unico Endrin E.C.-19.5% Wil-kil Endrin 20% E.C. Insecticide</p>
1.4	Code numbers	
1.4.1	CAS number	72-20-8
1.4.2	Harmonized System customs code	Not Applicable/Available
1.4.3	Other numbers (specify the numbering system)	RTECS #: IO1575000 EINECS/ELINCS#: 200-775-7

1.5	Indication regarding previous notification on this chemical, if any
1.5.1	<input checked="" type="checkbox"/> This is a first time notification of final regulatory action on this chemical.
1.5.2	<input type="checkbox"/> This is a modification of a previous notification of final regulatory action on this chemical. The sections modified are: _____ <input type="checkbox"/> This notification replaces all previously submitted notifications on this chemical.
	Date of issue of the previous notification: _____

1.6 Information on hazard classification where the chemical is subject to classification requirements	
International classification systems	Hazard class
WHO	O-694 (obsolete)
IARC	3 - non-classifiable
Other classification systems	Hazard class
EU:	T+;T;N - Very toxic; Toxic; Dangerous for the environment.

1.7 Use or uses of the chemical	
1.7.1	<input checked="" type="checkbox"/> Pesticide Describe the uses of the chemical as a pesticide in your country: Historically, endrin has been used as follows: <ul style="list-style-type: none"> - Insecticide to control insect pests in crops used alone or in combination with other actives such as Chlordane - Insecticide-Fungicide in combination with other actives such as Zineb and Copper - Fumigant in combination with other actives such as Carbon Tetrachloride and Zineb At the time of cancellation (1990), only the following uses were still registered: cutworm in wheat, oats, barley, rapeseed; armyworms in flax, rapeseed, mustard; and, aphids, flea beetles, potato beetles and tarnished plant bugs in potatoes
1.7.2	<input type="checkbox"/> 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 Physical state: Colourless crystals Molecular weight: 380.92 Melting Point: 200 C Boiling Point: Decomposes at 245 C Relative Density: 1.70 at 20 C (water=1) Solubility: Insoluble Good solubility in acetone, benzene and xylene. Moderate solubility in carbon tetrachloride, hexane. Insoluble in methanol Partition Coefficient: Log P(oct) = 5.6 Vapour Pressure: Approximately zero (2.6 x 10 ⁻⁸) kPa at 25 C) REF: CHEMINFO. Canadian Centre for Occupational Health and Safety. 1995. CD library.

1.8.2	Description of toxicological properties of the chemical Endrin has high acute toxicity to humans. Endrin is rapidly absorbed through the skin and has a tendency to accumulate in fatty tissues. Mammals rapidly metabolize endrin to hydrophilic metabolites which are excreted. Symptoms of acute exposure to endrin are tremors, laboured breathing, mental confusion, headaches, dizziness, nervousness, nausea, vomiting, and convulsions. The estimated single lethal oral dose for an adult is ½ tsp. Chronic exposure can result in convulsions and damage to liver tissue. Birth defects have been observed in some animal studies. Endrin is currently not classifiable as to its human carcinogenicity.
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The following toxicity and screening values have been reported:

<u>Study Type</u>	<u>Value</u>
LD50 Guinea pig male oral	36 mg/kg
LD50 Guinea pig female oral	16 mg/kg
LD50 Rat female dermal	15 mg/kg
LD50 Rabbit female oral	7-10 mg/kg
LD50 Monkey oral	3 mg/kg
LD50 Rat oral	3 mg/kg
LD50 Mouse oral	1.3 mg/kg
LD50 Mouse iv	2.3 mg/kg
LD50 Rat male dermal	18 mg/kg
LD50 Rat oral	3 mg/kg
LD50 Rat skin	12 mg/kg
LD50 Monkey oral	3 mg/kg
LD50 Rabbit oral	7 mg/kg
LD50 Rabbit skin	60 mg/kg
LD50 Guinea pig oral	16 mg/kg

REF: CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library. HSDB(R).

1.8.3 Description of ecotoxicological properties of the chemical

Endrin is persistent in the environment which can be attributed to its insolubility in water, high solubility in fats, adsorption to particulate matter, and resistance to chemical, physical, and microbiologic degradation. In the air, endrin mainly associates with particulate matter, but small amounts may exist in the vapour phase. Endrin will react with hydroxyl radicals in the air with a half-life of 1.45 hours, and it will photodegrade to γ -ketoendrin with a half-life of 7 days. Endrin strongly adsorbs to soil where it is immobile and will persist with a half-life of 12 years. Leaching to groundwater is possible under certain conditions. Small amounts may volatilize from soil and/or carried by dust particles in the air. Endrin does not hydrolyse or biotransform in water and the half-life can range 16 weeks to many years. It will extensively adsorb to sediment.

When in use, endrin entered the food chain of mammals, birds, fishes, and other living matter. It is extremely toxic to birds, fish, and other aquatic life, and it is toxic to bees. Like other organochlorine insecticides, endrin will negatively impact the reproductive success of birds by acute intoxication, fatality. The range of reported bioconcentration factors (fish: 1335-10,000; shellfish: 500-1250, and in snail (Physa): 49,000) suggest that bioconcentration in aquatic organisms is very high.

The following toxicity and screening values have been reported:

<u>Study Type</u>	<u>Value</u>
EC50 Daphnia magna (daphnid)	4.2 ug/l/48 hr
Daphnia pulex (daphnid)	20 ug/l/48 hr
Cypridopsis viuda (seed shrimp)	1.8 ug/l/48 hr
LC50 Orconectes nais (crayfish)	3.2 ug/l/96 hr
Pteronarcella badia (stone fly)	0.54 ug/l/96 hr
Baetis (mayfly)	0.90 ug/l/96 hr
Ischnura venticalis (damselfly)	2.4 ug/l/96 hr
Tipula (crane fly)	12 ug/l/96 hr
Atherix (snipe fly)	4.6 ug/l/96 hr
LD50 Anas platyrhynchos (Mallard) female oral	5.64 mg/kg
Tympanuchus phasianellus (grouse) female oral	1.06 mg/kg
Callipepla Californica (California quail) female oral	1.19 mg/kg

	Pheasant male oral	1.78 mg/kg
	Columba livia (Rock dove) oral	2.0-5.0 mg/kg
	Odocoileus hemionus hemionus (Mule deer) female oral	6.25-12.5 mg/kg
LC50	Bluegill sunfish	0.6 ug/L/96 hr
	fathead minnow	1.0 ug/L/96 hr,
	rainbow trout	0.6 ug/L/96 hr
	coho salmon	0.5 ug/L/96 hr
	chinook	1.2 ug/L/96 hr
REF:	CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library. HSDB(R).	

PART II: FINAL REGULATORY ACTION

2. FINAL REGULATORY ACTION	
2.1	The chemical is: <input checked="" type="checkbox"/> banned OR <input type="checkbox"/> severely restricted
2.2	Information specific to the final regulatory action
2.2.1	Summary of the final regulatory action Registration discontinued in 1990; no pest control uses allowed as of December 31, 1994
2.2.2	Reference to the regulatory document CAPCO Note 90-02
2.2.3	Date of entry into force of the final regulatory action December 31, 1990

2.3	Was the final regulatory action based on a risk or hazard evaluation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	If yes, give information on such evaluation Periodic re-evaluations resulted in systematic reduction of uses
	Reference to the relevant documentation CAPCO Note 90-02

2.4	Reasons for the final regulatory action
2.4.1	Is the reason for the final regulatory action relevant to the human health? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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
	Reference to the relevant documentation
	Expected effect of the final regulatory action

2.4.2	Is the reason for the final regulatory action relevant to the environment?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, give summary of the known hazards and risks to the environment		
<p>- Persistent in the environment due to insolubility in water, high solubility in fats, adsorption to particulate matter, and resistance to chemical, physical, and microbiologic degradation</p> <p>- In the air, mainly associates with particulate matter, but small amounts may exist in the vapour phase; will react with hydroxyl radicals with a half-life of 1.45 hours and photodegrade to γ-ketoendrin with a half-life of 7 days.</p> <p>- Adsorbs strongly to soil, where it is immobile and will persist with a half-life of ≥ 12 years. Leaching to groundwater is possible under certain conditions. Small amounts may volatilize from soil and/or be carried by dust particles in the air .</p> <p>- Does not hydrolyse or biotransform in water and the half-life can range 16 weeks to many years. It will extensively adsorb to sediment.</p> <p>The bioaccumulation factors (BCFs) for endrin range 2,720 to 12,600 with fish BCFs from 1,335 to 10,000; BAFs for Trophic Levels 3 and 4 are 15,033.47 and 13,048.54, respectively; values for ecological magnification in fish and snail are 1,335 and 49,218, respectively; and, the values for biodegradability index in fish and snail are 0.009 and 0.0124, respectively.</p> <p>When in use, endrin entered the food chain of mammals, birds, fishes, and other living matter. It is extremely toxic to birds, fish, and other aquatic life, and it is toxic to bees. Like other organochlorine insecticides, endrin will negatively impact the reproductive success of birds by acute intoxication, fatality, and eggshell thinning.</p>		
Reference to the relevant documentation		
CAPCO Note 90-02		
Expected effect of the final regulatory action		
Chemical no longer registered for pest control use in Canada. Source of entry into environment removed.		

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	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> Pesticide
Formulation(s) and use or uses prohibited by the final regulatory action		
All formulations prohibited from import, sale or use.		
Formulation(s) and use or uses that remain allowed		
None		

2.5.3 Estimated quantity of the chemical produced, imported, exported and used, where available.		
	Quantity per year (MT)	Year
Produced	0	1999
Imported	0	1999
Exported	0	1999
Used	0	1999

2.6 Indication, to the extent possible, of the likely relevance of the final regulatory action to other states and regions	
	<p>- chemical considered obsolete by WHO, therefore regulatory action unlikely to have any impact</p> <p>- Shell stopped manufacturing endrin in 1989. Since there would be no access to it past that point, the regulatory action is unlikely to have any impact on other states or regions.</p>

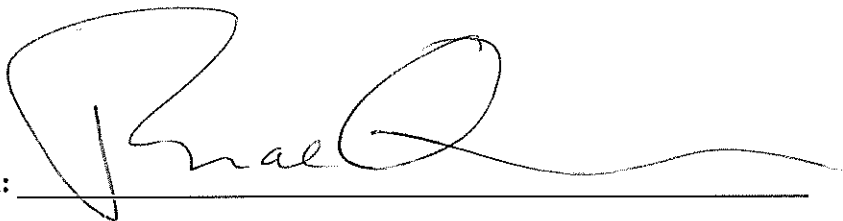
2.7 Other relevant information that may cover:	
2.7.1	<p>Assessment of socio-economic effects of the final regulatory action</p> <p>At the time of cancellation, alternatives existed for the remaining uses of endrin, thus impact unlikely to have a large impact on the agricultural industry as a whole.</p>

2.7.2	<p>Information on alternatives and their relative risks</p> <p>Not available</p>
2.7.3	<p>Relevant additional information</p> <p>Endrin is listed in Annex A, Part 1, of the Stockholm Convention on Persistent Organic Pollutants. There are no specific exemptions listed for endrin. Substances on this list are subject to provisions to eliminate production and use.</p> <p>Endrin is also listed in Annex 1 of the POPs Protocol to the UN ECE Convention on Long-Range Transboundary Air Pollution. There are no conditions listed for the elimination of production or use of endrin in the UN ECE region.</p>

PART III : GOVERNMENT AUTHORITIES

Ministry/Department and authority responsible for issuing/enforcing the final regulatory action	
Institution	Pest Management Regulatory Agency, Health Canada
Address	2720 Riverside Drive Ottawa, Ontario K1A 0K9 Canada
Telephone	+1 613-736-3660
Telefax	+1 613-736-3659
E-mail address	Trish_MacQuarrie@hc-sc.gc.ca
Designated National Authority	
Institution	Pest Management Regulatory Agency, Health Canada
Address	2720 Riverside Drive Ottawa, Ontario K1A 0K9 Canada
Name of person in charge	Trish MacQuarrie
Position of person in charge	Director, Alternative Strategies and Regulatory Affairs Division
Telephone	+1 613-736-3660
Telefax	+1 613-736-3659
E-mail address	Trish_MacQuarrie@hc-sc.gc.ca

Date, signature of DNA and official seal: _____





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

IMPORTANT: See instructions before filling in the form

COUNTRY: BULGARIA

PART I: PROPERTIES, IDENTIFICATION AND USES

1. IDENTITY OF CHEMICAL		
1.1	Common name	Endrin
1.2	Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists	1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene
1.3	Trade names and names of preparations	
1.4	Code numbers	
1.4.1	CAS number	72-20-8
1.4.2	Harmonized System customs code	2910 90 00
1.4.3	Other numbers (specify the numbering system)	200-775-7 (EC No) 602-051-00-X (Index No)

1.5 Indication regarding previous notification on this chemical, if any	
1.5.1	<input checked="" type="checkbox"/> This is a first time notification of final regulatory action on this chemical.
1.5.2	<input type="checkbox"/> This is a modification of a previous notification of final regulatory action on this chemical. The sections modified are: _____
	<input type="checkbox"/> 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
WHO	Active ingredient: Class O (Obsolete as pesticide; not classified)
IARC	Group 3: Unclassifiable as to carcinogenicity in humans.
Other classification systems	Hazard class
EU	T+; R28 (Very toxic if swallowed.) T; R24 (Toxic in contact with skin.) N; R50-53 (Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.)
UN	Hazard Class: 6.1 (Poisonous substance) Pack Group: I

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: Endrin had been imported and used in Bulgaria until 1969 as an insecticide in agriculture.
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 Empirical formula: C ₁₂ H ₁₈ C ₁₆ O Mol. weight: 380.93 Density: 1.77 g/cm ³ (technical product) Melting point: >200 °C (it decomposes on heating above 245°C, producing hydrogen chloride, phosgene.) Vapor pressure: 2.6x10 ⁻⁵ Pa Solubility : practically non soluble in water, soluble in acetone, benzene, ethanol, aromatic hydrocarbon., esters and ketones
1.8.2	Description of toxicological properties of the chemical Endrin is a highly toxic pesticide, the signs of intoxication being neurotoxic. The oral dose that causes death has been estimated to be approximately 10 mg/kg body weight; the single oral dose that causes convulsions was estimated to be 0.25-1.0 mg/kg body weight. The primary site of action of endrin is the central nervous system. Exposure of humans to a toxic dose may lead within a few hours to such signs and symptoms of intoxication as excitability and convulsions, and death may follow within 2-12 h after exposure if appropriate treatment is not administered immediately. Recovery from non-fatal poisoning is rapid and complete. Endrin does not accumulate in the human body to any significant degree. (WHO, 1992). Endrin might also contribute to improper bone formation, although no human data exist for this effect. (WFPFA, 2000). Endrin's ADI is 0.0002 mg/kg bw. (WHO, 1994). Long-term studies of toxicity and carcinogenicity have been performed in mice and rats. No carcinogenic effect was found, but these studies had shortcomings, including poor survival of the animals.
1.8.3	Description of ecotoxicological properties of the chemical The substance is very toxic to fish, aquatic invertebrates and phytoplankton (96-h LC ₅₀ for fish, aquatic invertebrates and phytoplankton mostly below 1 microgram/liters). This substance may be hazardous to the environment; special attention should be given to honey bees, birds and mammals. It is strongly advised not to let the chemical enter into the environment because it persists in the environment. In the food chain important to humans, bioaccumulation takes place, specifically in fish and seafood. Avoid release to the environment in circumstances different to normal use.

PART II: FINAL REGULATORY ACTION

2.	FINAL REGULATORY ACTION	
2.1	The chemical is:	X banned
2.2	Information specific to the final regulatory action	
2.2.1	Summary of the final regulatory action	
	Endrin was excluded from the list of active substances authorized for use in plant protection products in 1969 under the Law on protection of plants against pests and blights. It has prohibited to production, use and place on the market all plant protection products containing Endrin according to annual adopted list of active ingredients banned for use in plant protection products under the Plant Protection Act since 2003. Endrin is designated as a PIC chemical. (Annex I of the Regulation on the import and export of certain dangerous chemicals on the Bulgarian territory). The chemical is listed in Annex II of the Regulation as prohibited for export from and import in the country.	
2.2.2	Reference to the regulatory document	
	<ul style="list-style-type: none"> - Law on protection of plants against pests and blights (SG 11 of 5.02.1960, amended SG 26 of 2.04.1968), repealed by Plant Protection Act (SG 91 of 10.10.1997, amended SG 90 of 15.10.1999, amended SG 96 of 09.11.2001, amended SG 18 of 15.03.2004); - Joint Order № № № RD 09-130/13.03.2003 of Minister of Agriculture and Forestry; RD 09-98/25.02.2003 of Minister of Health; RD-228/07.03.2003 of Minister of Environment and Water for approval of annual list of active ingredients banned for use in plant protection products according to Article 15g of Plant Protection Act; - Regulation on the import and export of certain dangerous chemical substances, preparations and products on the Bulgarian territory (SG 66 of 9 July 2002), repealed by Regulation on the import and export of certain dangerous chemicals on the Bulgarian territory (SG 63 of 20 July 2004, in force since 1st January 2005). 	
2.2.3	Date of entry into force of the final regulatory action	
	01.04.2003	
2.3	Was the final regulatory action based on a risk or hazard evaluation?	X Yes \emptyset No
	If yes, give information on such evaluation	
	<p>The final regulatory action was taken by Ministry of Agriculture and Forestry and Ministry of Health after an examination of the available scientific risk and hazard data on Endrin, in the context of the prevailing conditions in the country during that period.</p> <p>Endrin has not commercialized and used in the country since 1969. The pesticide was never manufactured in the county and there is no information it had been exported. There are various alternatives of the pesticide used in agriculture.</p>	
	Reference to the relevant documentation	
	National POPs inventory, October, 2004	
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 \emptyset 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	
	<p>Endrin is an organochlorine insecticide. It is highly toxic (oral rat LD₅₀ approximately 7 mg/kg) and can be hazardous for human beings, if incorrectly or carelessly handled. It is therefore essential that the correct precautions should be observed during its handling and use. Endrin is readily absorbed and toxic by mouth, by skin contact, and by inhalation. It acts as a stimulant of the central nervous system. An oral dose of 0.25 mg/kg body weight has been reported to cause convulsions in human beings. Symptoms may appear between 20 min and 12 h following accidental ingestion or gross overexposure, and may include headache, dizziness, nausea, vomiting, weakness in the legs, and convulsions, sometimes leading to death. Organochlorine compounds can cause respiratory depression. They may also sensitize the heart to endogenous catecholamines, leading to cardiac arrhythmias and, in severe exposure cases, to ventricular fibrillation and cardiac arrest. Respiratory depression may lead to metabolic acidosis, and, if necessary, blood gases should be checked. The use of an ECG monitor is recommended if the symptoms are severe.</p>	
	Reference to the relevant documentation	
	Scientific literature, publications.	
	Expected effect of the final regulatory action	
	A reduction of exposure of endrin for workers and consumers.	

2.4.2	Is the reason for the final regulatory action relevant to the environment?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	If yes, give summary of the known hazards and risks to the environment		
	Endrin is highly toxic for terrestrial animal species, especially fish, phytoplankton and other aquatic organisms. It is readily bioaccumulated in fish, but disappears rapidly when exposure is discontinued. It does not persist for long periods in the water, but may persist in sediments. Endrin does not show significant effects on soil microorganisms: concentrations of between 10, 100 or 1000 mg/kg soil had no effect on organic matter decomposition, dinitrification, methanogenesis, sulfate reduction, or carbon dioxide evolution under anaerobic conditions.		
	Reference to the relevant documentation		
	Scientific literature, publications.		
	Expected effect of the final regulatory action		
	A reduction of exposure of Endrin to the environment.		

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	<input type="checkbox"/>	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	<input checked="" type="checkbox"/>	Pesticide
	Formulation(s) and use or uses prohibited by the final regulatory action		
	All uses and formulations of the chemical are prohibited.		
	Formulation(s) and use or uses that remain allowed		
	No 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	Not produced	-
	Exported	n/a	-
	Used/Imported	100 t/y	1960-1970

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
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 Environment and Water
Address	Bulgaria 1000, Sofia 67, William Gladstone Str.
Telephone	+359 2 940 60 21
Telefax	+359 2 981 33 84
E-mail address	pluleva@moew.government.bg

Designated National Authority	
Institution	Ministry of Environment and Water
Address	Bulgaria 1000, Sofia 67, William Gladstone Str.
Name of person in charge	Mrs. Parvoleta Luleva
Position of person in charge	Chief expert at "Operative Control and Management of Dangerous Chemicals" Department Directorate "Coordination of Regional Inspectorates of Environment and Water"
Telephone	+ 359 2 940 60 21
Telefax	+ 359 2 981 33 84
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Ministry/Department and authority responsible for issuing/enforcing the final regulatory action	
Institution	Ministry of Agriculture and Forestry
Address	Bulgaria 1040, Sofia 55, Hristo Botev Blvd.
Designated National Authority	
Institution	National Plant Protection Service, Ministry of Agriculture and Forestry
Address	Bulgaria 1606, Sofia 17, Hristo Botev Blvd.
Name of person in charge	Mr. Stefan Uzunov
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Manoela Georgieva
Deputy Minister of
Environment and Water

15 June 2005

Petar Nikolov
Director General of
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Service