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: CANADA

PART I: PROPERTIES, IDENTIFICATION AND USES

1.	**IDENTITY OF CHEMICAL**	
1.1	**Common name**	DBCP
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	1-chloro-2,3-dibromopropane (IUPAC)
1.3	**Trade names and names of preparations**	Amine Brush Killer Fumazone (a Soil Fumigant) Shell Nemagon 17.3% Granules Barn Spray Emulsifiable Concentrate Fumazone 70E Soil Fumigant Bramco Nemagon 10.3-E Soil Fumigant for Nematode Control Nemagon 25 Granular Soil Fumigant (Control of Nematodes) Nemagon 25% Granules Soil Fumigant Nemagon 130 Emulsifiable Concentrate Soil Fumigant Nemagon Emulsifiable Insecticide 25% Nemagon Granular Insecticide
1.4	**Code numbers**	
1.4.1	**CAS number**	96-12-8
1.4.2	**Harmonized System customs code**	Not Applicable/Available
1.4.3	**Other numbers (specify the numbering system)**	RTECS #: TX8750000 EINECS/ELINCS #: 202-479-3

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

1.5	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: _____ ☒ This notification replaces all previously submitted notifications on this chemical.
	Date of issue of the previous notification: _____ February 9, 1996 _____

1.6 Information on hazard classification where the chemical is subject to classification requirements	
International classification systems	**Hazard class**
WHO	O-668 (obsolete)
IARC	2B - possibly carcinogenic to humans
Other classification systems	**Hazard class**
EU	Carc.Cat.2;Muta.Cat.2;Repr.Cat.1;T;Xn;R:52-53

1.7	Use or uses of the chemical
1.7.1	☒ **Pesticide**
	Describe the uses of the chemical as a pesticide in your country:
	Historical uses include: - use in combination with 2,4,5-T: brush killer - as a soil fumigant for control of nematodes - as an insecticide - use in combination with diazinon: insecticide for use in barns
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**	
	Physical state	Amber to dark brown liquid
	Odour	Pungent, sharp smell; threshold 96.5 to 289.5 $\mu g/m^3$
	Molecular weight	236.36
	log K_{OW}/K_{OC}	2.43 to 2.96/40 to 149
	BP/MP	164.5 to196 °C/5 to 6 °C
	Flash point	76.6 °C (open cup)
	Vapour density	2.09 at 14 °C (air = 1)
	Specific gravity	2.08 at 20/20 °C (water = 1)
	Vapour pressure	0.8 mm Hg at 21 °C; 0.58 mm Hg at 20 °C
	Solubility	1,230 mg/L water at 20 °C, miscible in aliphatic and aromatic hydrocarbons, oils, dichloropropane, isopropyl alcohol, and acetone
	Henry's Law Constant	1.47×10-4 atm·m^3/mole
	REF: CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library.	

1.8.2 Description of toxicological properties of the chemical

Carcinogenicity was indicated by preliminary feeding studies.

Reproductive effects include suspected sterility of industrial workers exposed to chemical

The following toxicity and screening values have been reported:

Study Type	Value
Rabbit (male) oral LD_{50}:	100 mg/kg
Mouse (female) oral LD_{50}:	260 mg/kg
Rat (male) oral LD_{50}:	170 mg/kg
Guinea pig (male) oral LD_{50}:	210 mg/kg
Rabbit (albino) dermal LD_{50}:	1,400 mg/kg
Mouse percutaneous LD_{50}:	123 mg/kg
Rat (Long-Evans) inhalation LC_{50}:	1,480 mg/m^3/hr

Screening Benchmarks	Value
California EPA reference exposure level:	0.2 □g/m^3
U.S. EPA reference concentration	0.2 □g/m^3
California EPA inhalation cancer potency factor:	0.002 (□g/m^3)$^{-1}$
California EPA oral cancer potency factor:	7 (mg/kg/day)$^{-1}$

REF: CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library.
Letter dated September 6, 1977 from Health and Welfare Canada to Agriculture Canada

1.8.3 Description of ecotoxicological properties of the chemical

If released to the atmosphere, DBCP will exist solely in the vapour phase. The dominant chemical loss process of DBCP in the air is by reaction with the hydroxyl radical forming 1,2-dibromopropanol, chlorobromopropanol, and 1-bromo-3-chloro-2-propane. The calculated half-life and lifetime of DBCP in the air are 23 to 37 days and 33 days, respectively, due to reaction with the hydroxyl radical. Most DBCP that enters into the surface water evaporates into the air within several days or a week. DBCP will slowly hydrolyze in water with a half-life of 38 years in surface water and 141 years in groundwater of neutral pH. Volatilization half-lives in a model river and a model lake were 14 hours and 9 days, respectively. Photodegradation and biodegradation in water are not significant transformation processes. DBCP does not adsorb to sediment. Some DBCP in soil will evaporate into the air or leach, while small amounts may stay in the soil for several years. Hydrolysis is significant in alkaline soil, but not in neutral or acidic soils. Biodegradation is possible, but will be slow relative to volatilization and leaching. Bioaccumulation is not expected to occur. Measured BCFs in carp range from 3.6 to 19.

The following toxicity values have been reported:

Study Type	Value
Mallard duck oral LD_{50}:	66.8 mg/kg
Ring-necked pheasant oral LD_{50}:	156 mg/kg

REF: CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library.

PART II: FINAL REGULATORY ACTION

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		
	Registration suspended in 1977; no pest control uses allowed as of December 31, 1978		
2.2.2	Reference to the regulatory document		
	Not available		
2.2.3	Date of entry into force of the final regulatory action		
	January 1, 1978		

2.3	Was the final regulatory action based on a risk or hazard evaluation?	☐ Yes	☒ 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?	☒ 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		

- suspected carcinogenicity as a result of findings in preliminary feeding study
- suspected sterility in industrial workers as a result of exposure

DBCP is a moderate central nervous system depressant and an eye, skin, and respiratory tract irritant. Acute overexposure to DBCP in humans by inhalation may cause central nervous system effects, with symptoms including drowsiness, narcosis, headaches, nausea, lightheadedness, weakness, and pulmonary congestion. Chronic inhalation exposure has been reported to cause kidney and liver effects in rats and mice. Chronic occuaptional exposure to DBCP caused decreased sperm counts in men, as well as more female than male children and infertility; however, no association between paternal exposure and birth defects, prematurity, mortality, or spontaneous abortions was noted. Testicular effects and decreased sperm count were observed in rabbits chronically exposed to DBCP by inhalation. No human data are available to evaluate carcinogenicity of DBCP to humans; however, rats and mcie exposed by inhalation developed nasal tumours. DBCP is considered a probable human carcinogen by the U.S. EPA and a possible human carcinogen by IARC.

Reference to the relevant documentation

letter of September 6, 1977 from Health and Welfare Canada to Agriculture Canada
CHEMINFO, Canadian Centre for Occupational Health and Safety. 2000. CD library.

Expected effect of the final regulatory action

Chemical no longer registered for pest control use in Canada

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

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**	☒ **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**
	Chemical considered obsolete by WHO, therefore regulatory action unlikely to have any impact

2.7	**Other relevant information that may cover:**	
2.7.1	**Assessment of socio-economic effects of the final regulatory action**	
	None	
2.7.2	**Information on alternatives and their relative risks**	
	other chemicals registered for use as a soil fumigant to control nematodes include: metam 1,3-dichloropropene chloropicrin dazomet methyl isothiocyanate	

2.7.3	**Relevant additional information** None

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: