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

Chemical Review Committee
Eighteenth meeting
Rome, 19–23 September 2022
Item 5 (c) (iii) of the provisional agenda*

Technical work: review of notifications of final regulatory action: carbon tetrachloride

Carbon tetrachloride: notification from Canada reviewed by the Chemical Review Committee and the rationale for its conclusion

Note by the Secretariat

As is mentioned in the note by the Secretariat on carbon tetrachloride: notification of final regulatory action (UNEP/FAO/RC/CRC.18/7), the annex to the present note sets out the notification of final regulatory action for carbon tetrachloride in the industrial category from Canada reviewed by the Chemical Review Committee at its first meeting and the rationale for its conclusion. The present note, including its annex, has not been formally edited.

* UNEP/FAO/RC/CRC.18/1.

Annex

Carbon tetrachloride: notification from Canada reviewed by the Chemical Review Committee and the rationale for its conclusion

List of documents:

1. Notification of final regulatory action for carbon tetrachloride in the industrial chemicals category and supporting documentation submitted by Canada and reviewed by the Chemical Review Committee at its first meeting.
2. Rationale adopted by the Chemical Review Committee at its first meeting for its conclusion on the notification of final regulatory action for carbon tetrachloride in the industrial category submitted by Canada.

Interim 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**	Carbon Tetrachloride
1.2	**Chemical name according to an internationally recognized nomenclature (e.g. IUPAC), where such nomenclature exists**	Tetrachloromethane
1.3	**Trade names and names of preparations**	• Grain Fumigant • Acrile (Acrilo) Fumigant - Insecticide • Acritet 34-66 Fumigant • ACS Bulk Grain Fumigant • Benzinoform • Bin Fume Farm Grain Fumigant • Carbona • Chipman Grain Fumigant 80-20 Liquid • Co-op Bulk Grain Fumigant • Dowfume EB-15 Inhibited Soil Fumigant (Or: Machinery or Spot Fumigant) • Dowfume EB-5 Grain Fumigant • Dowfume V Vault Fumigant • Dow Fume 75 Fumigant • Dowfume E-59 Spot Fumigant (Endrin 1%, Zineb 3.9% Dust) • Dowfume EB-59 Spot Fumigant

PLEASE RETURN THE COMPLETED FORM TO:

Interim 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

Interim 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

1.3	**Trade names and names of preparations (cont'd)**	• Dowfume 80-20 (Fumigant for Insect Pests in Stored Grain) • Dowfume C Grain Fumigant • FIA 80-20 Grain Fumigant • Flukoids • Frostex Moth Spray- Grain Fumigant "A" • Howard Bin-fume • Kemfume 59 Spot Fumigant • Kemfume Mill Machinery Fumigant • Kemfume Grain Fumigant • Kem-grain Fumigant • Kem-sure-kill-machinery Fumigant • KS BF Grain Fumigant • Leitte Grainfume 2 • Larvacide 15 Liquid Grain Fumigant • Max Sport Kill Fumigant • Max Weevil Grain Fumigant • Mcleod 7-30 Grain Fumigant • Midland Gas-o-cide Gas Fumigant • Mill Fume Liquid Fumigant • MK Grain Fumigant • Necatorina • Penfume Liquid Fumigant for Fur & Garment Storage Vaults • Pertoxin Fumigant to Kill Insects & Larvae • Refrigerant R10 • Sanex Grain Fumigant • Sanex Sanifume-15 • Sanex Sanifume-5 Fumigant • Sani-fume 59 Spot Fumigant • Serafume Grain Fumigant • Servacide Spray • Spotfume 50 (Kills Cereal Infesting Insects) • Tetrafinol • Tetraform • Tetrasol • Tri-X Brand Fumigant for Garments • Univerm • Vapo Liquid Fumigating Gas • Vermoestricid • Vertifume Grain Fumigant • Weevil-cide Grain Fumigant • Weevil Insecticide • Westofume Fumigant • Wilson's Grain Fumigant
1.4	**Code numbers**	
1.4.1	**CAS number**	56-23-5
1.4.2	**Harmonized System customs code**	290314
1.4.3	**Other numbers (specify the numbering system)**	UN/NA 1846, RTECS FG4900000, EU EINECS/ELINCS 200-262-8

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: 5/4/1995

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

International classification systems	Hazard class
International Agency for Research on Cancer (IARC)	"Very Toxic"; listed in group 2B

Other classification systems	Hazard class
Proposed Canadian Workplace Hazardous Materials Information System classification	D1A - poisonous and infectious material - immediate and serious effects D2A - poisonous and infectious material - other effects - very toxic D2B - poisonous and infectious material - other effects - toxic
U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Evaluation	Meets criteria for hazardous material, as defined by 29CFR 1910.1200
European Union Classification	Carcinogenic, Category 3, Toxic, Dangerous for the environment
Canadian Transportation of Dangerous Goods Shipping Information	Class 6.1 - poisonous substance Class 9.2 - substance hazardous to the environment
National Fire Protection Association (NFPA)	Health: 3, Flammability: 0, Reactivity: 0

1.7	Use or uses of the chemical
1.7.1	☑ **Pesticide**
	Describe the uses of the chemical as a pesticide in your country:
	Fumigant to control insect pests in stored grains and garments.
1.7.2	☑ **Industrial**
	Describe the industrial uses of the chemical in your country:
	Mainly used in the synthesis of chlorofluoromethanes (chemical feedstock). Smaller quantities were used in fire extinguishers, as dry cleaning agent, laboratory applications, and as an ingredient in pesticides, pharmaceuticals, paints and solvents.

1.8 Properties

1.8.1 Description of physico-chemical properties of the chemical

Colorless and highly volatile liquid with an ether like odor similar to chloroform.
Melting point: -23 ° C
Boiling point: 76.5 °C
Vapour Pressure: 91.3 mm Hg at 20 °C
Specific Gravity: 1.594
Log K_{ow}: 2.64
Solubility in water: Very low (0.05 ml/100ml)
Soluble in acetone; miscible with alcohol, benzene, chloroform, ether, carbon disulfide, petroleum ether.

1.8.2 Description of toxicological properties of the chemical

Acute Effects:

- Inhalation: no effects at 10 ppm; breathing of the vapours (25-30 ppm) can cause headache, dizziness, loss of coordination and nausea; High-level (e.g. 1,000-2,000 ppm for 0.5 to 1 hour) exposures can cause unconsciousness, coma and death. Damage to the liver and kidney failure can result from a single intense exposure. In some cases, heart failure followed severe kidney lesions.
- Eye contact: vapour or liquid can cause slight irritation.
- Skin contact: can cause irritation and lead to dermatitis. Carbon tetrachloride can be absorbed through the skin in toxic amounts.
- Ingestion: ingestion of as little as 1.5 mL of carbon tetrachloride has caused death. Liver damage and other effects described for inhalation can occur.

Chronic Effects (Noncancer):

- Chronic inhalation or oral exposure can produce liver and kidney damage in humans and animals.

Reproductive/Developmental Effects:

- There is limited evidence that carbon tetrachloride may damage the developing foetus.

Genotoxicity:

- No mutagenic effects seen in bacteria or mammalian cells.

Carcinogenicity:

- Occasional reports have noted the occurrence of liver cancer in workers who had been exposed to carbon tetrachloride by inhalation exposure; however, the data are not sufficient to establish a cause-and-effect relationship.
- Carbon tetrachloride has produced liver tumors in several animal species. IARC suggest there is sufficient evidence of carcinogenicity in experimental animals.

Data:

LD_{50} (rat, oral): 2,800-2,920 mg/kg
LD_{50} (rat, percutaneous): 5,070 mg/kg
Lethal concentration (rat, inhalation): 4,000 ppm/4 hours
LD_{50} (mouse, oral): 12.1-14.4 g/kg
LD_{50} (guinea pig, dermal): > 15,000mg/kg
LC_{50} (mouse): 9,500 ppm (8-hour exposure)

1.8.2	Description of toxicological properties of the chemical (cont'd)

References:

CHEMINFO, Canadian Centre for Occupational Health and Safety, Record number: 117, Issue 99-2 (May, 1999)

CHEMINFO, Canadian Centre for Occupational Health and Safety, Record number:117 (ftp://ftp.alternatives.com/library/envchem/carb-tet.txt)

Carbon tetrachloride, Unified Air Toxics Website (UATW), U.S. EPA, Office of Air Quality Planning & Standards (OAQPS) (http://www.epa.gov/ttn/uatw/hlthef/carbonte.html)

1.8.3	Description of ecotoxicological properties of the chemical

Carbon tetrachloride in the environment is primarily found in the air, with a lifetime of 30-100 years. It dissipates rapidly upon release by evaporating from soil and surface water. Very little is adsorbed to soil particles. Carbon tetrachloride can be broken down in soil or water within several days. The breakdown products of carbon tetrachloride are ozone-depleters. Carbon tetrachloride does not bioaccumulate in animals, and it is not known whether it accumulates in plants. The bioconcentration factor (BCF) for carbon tetrachloride is 69.95. Bioaccumulation factors (BAFs) for Trophic Level 3 and 4 are 70.65 and 70.09, respectively. Carbon tetrachloride reduced respiration of native soil microflora in a sandy loam by 21 % at the lowest concentration tested (1,000 mg/kg) but not in silt loam soil.

Acute Effects:

Acute toxic effects may include the death of animals, birds, or fish, and death or low growth rate in plants. Acute effects are seen two to four days after animals or plants come into contact with a toxic chemical substance.

Carbon tetrachloride has high acute toxicity to aquatic life. No data are available on the short-term effects of carbon tetrachloride on plants, birds, or land animals.

Chronic Effects:

Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance or behavior. Chronic effects can be seen long after first exposure(s) to a toxic chemical.

Carbon tetrachloride has high chronic toxicity to aquatic life. No data are available on the long-term effects of carbon tetrachloride on plants, birds, or land animals.

Data:

Fathead minnow LC_{50}: 41,400-43,300 µg/L
Fathead minnow acute toxicity: 11-1,260 µg/L
Bluegill acute toxicity: 40-3,160 µg/L
Lowest fish chronic toxicity: 1,970 µg/L
Lowest fish EC_{50}: 65 µg/L
Lowest Daphnids chronic toxicity: 5,580 µg/L
Largemouth bass population EC_{50}: 224 µg/L (estimated)

Lowest fish chronic toxicity: 9,500 µg/g sediment
Lowest Daphnids chronic toxicity: 27,000 µg/g sediment

1.8.3	**Description of ecotoxicological properties of the chemical (cont'd)**

ORNL secondary acute value: 180 µg/L (Tier II)
ORNL secondary chronic value: 9.8 µg/L (Tier II)
ORNL secondary chronic value: 47 µg/g sediment
Region IV acute screening value: 3,520 µg/L
Region IV chronic screening value: 352 µg/L
Soil screening benchmark: 1,000 mg/kg (for toxicity to soil microorganisms and microbial processes)

Reference:

EPA factsheets for regulated chemicals (http://mail.odsnet.com/TRIFacts/157.html)

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**

Industrial

In Canada, the federal and provincial governments are responsible for regulating various aspects of ozone depleting substances in the country. Federal and provincial regulatory programs are complementary, and form an integral part of Canada's Ozone Layer Protection Program. The federal government is generally responsible for implementing the provisions of the Montreal Protocol, including controls on the manufacture, import and export of ODSs under the *Canadian Environmental Protection Act*. Provincial governments are responsible for the regulation of emissions and discharges to the environment, and govern the implementation of ODS recovery and recycling programs, and emission controls under provincial regulations.

The *Ozone-depleting Substances* (ODS) *Regulations* prescribe conditions under which a person may manufacture, import, export, use, sale, or offer for sale in Canada all substances known to deplete the ozone layer. In addition, the Regulations prohibit the use or sale of controlled ODSs that would have been illegally imported or manufactured after the phase-out date. The Regulations also require that permits be obtained to import or export used, recovered, recycled and reclaimed ODSs, limited to certain allowed uses. They control the consumption of ODS, namely halocarbons such as CFCs, halons, HCFCs, methyl bromide, carbon tetrachloride and 1,1,1-trichloroethane. Companies are issued permits for the manufacture, import or export of the prescribed ODSs.

The Regulations also prohibit any person from manufacturing, importing, selling or offering for sale any product containing ODS, including pressurized containers containing less than 10 kg of a chlorofluorocarbon, packaging material for food that is made of plastic foam in which a chlorofluorocarbon is the foaming agent, and products such as mobile air-conditioning units, fire extinguishers and insulation boards that come from countries that are not signatories to the Montreal Protocol. The intent is to minimize or eliminate ODS emissions from non-essential uses.

Pesticide

The pesticide use of carbon tetrachloride has been suspended since February 1984.

2.2.2	**Reference to the regulatory document**
	Industrial *Ozone-depleting Substances Regulations, 1998* (SOR/99-7) under the *Canadian Environmental Protection Act.* Pesticide Press release I-4 January 23, 1984
2.2.3	**Date of entry into force of the final regulatory action**
	Regulations: January 1, 1999 Press release: December 31, 1985

2.3	**Was the final regulatory action based on a risk or hazard evaluation?**	☑ Yes	☐ No
	If yes, give information on such evaluation		
	The Regulations are in accordance with the Montreal Protocol that sets out the actual measures to implement controls on the production and consumption of ozone-depleting substances. The Montreal Protocol is science based and relies on UNEP Assessment Panels to guide its revisions.		
	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		
	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?**	☑ Yes	☐ No
	If yes, give summary of the known hazards and risks to the environment		
	Substance with an ozone-depleting potential of 1.1. Stratospheric ozone depletion leads to an increase in the intensity of UV-B rays that reach the earth's surface, where they can disrupt important biological processes and affect air quality.		

Reference to the relevant documentation

United Nations Environment Program report prepared by a panel of international experts (Environmental Effects of Ozone Depletion: 1991 Update, Panel Report Pursuant to Article 6 of the Montreal Protocol on Substances that Deplete the Ozone Layer Under the Auspices of UNEP, November 1991)

Expected effect of the final regulatory action

Canada's contribution to global ODS emissions is relatively small (about 2% of total) and so is its short term contribution to global benefits. More substantial benefits come from the combined effects of party countries implementing the reduction and phase-out schedules. Computer models predict that maximum ozone layer depletion will be encountered around the year 2000. The impacts of the measures taken will then be felt to their fullest extent after 2000; the rate of ozone depletion should then diminish. It is estimated that , as a result of the measures adopted by the parties to the Montreal Protocol, the ozone layer will fully recover by 2080.

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

1. The Regulations prohibit the manufacture, use, sale or offer for sale, import or export of bulk virgin carbon tetrachloride, except for certain allowed uses described below.

2. The Regulations prohibit the import of recovered, recycled, reclaimed or used carbon tetrachloride, except for certain allowed uses described below.

3. The Regulations prohibit the manufacture and import of products that contain or is intended to contain carbon tetrachloride, except for certain allowed uses described below.

Use or uses that remain allowed

1. The manufacture, use, sale, offer for sale, and import of bulk virgin carbon tetrachloride are allowed for the following purposes:

   (a) essential uses, which are to be identified at the international level on the basis of essential-use criteria adopted by the Parties. Canada considers these exemptions on a case-by-case basis;
   (b) feedstock;
   (c) analytical standard.

2. The import of recovered, recycled, reclaimed or used carbon tetrachloride is allowed for use as feedstock or for an essential purpose.

3. The manufacture and import of the following products containing carbon tetrachloride is allowed:

   (a) military ships before January 1, 2003;
   (b) a pest control product before January 1, 2000 provided that the product was registered under the Pest Control Products Act before January 1, 1999;
   (c) aircraft, ships or any vehicle manufactured before January 1999;
   (d) a product imported in a consignment of personal or household effects and intended for the importer's personal use only;
   (e) a product that is an animal or human health care product, including any bronchial dilator, inhalable steroid, topical anaesthetic and veterinary powder wound spray;
   (f) a product that is supplied in a container of 3 L or less and that is to be used for an essential use that is a laboratory or analytical use.

	Use or uses that remain allowed (cont'd)
	4. The use, sale, offer for sale of domestic (i.e., not imported) recovered, recycled, reclaimed or used carbon tetrachloride for any purpose.

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 uses and formulations prohibited.	
	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		
Imported		
Exported		
Used		

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**

The Montreal Protocol has been periodically revised to accelerate the phase-out dates of ozone-depleting substances (ODSs) and to add new substances considered damaging to the ozone layer. Since 1987, Canada has adopted and amended a number of regulations to meet its Montreal Protocol commitments. These regulations and amendments phased-out carbon tetrachloride according to the following schedule:

- Since January 1995, consumption and production of bulk carbon tetrachloride (virgin) are prohibited, except for certain allowed uses (see Section 2.5.1);
- Since January 1999, it is prohibited to manufacture and import products containing carbon tetrachloride, except for certain allowed uses (see Section 2.5.1);
- Since January 1999, it is prohibited to import recycled or recovered carbon tetrachloride, except for certain allowed uses (see Section 2.5.1).

<u>Effects of restricting the consumption and production of bulk carbon tetrachloride</u>

It was estimated that the restrictions imposed by the Regulations would cost about $2.3 million annually from 1995 to 1999, and then $400,000 per year for the next five years. The present value of the costs using a 7.5% discount rate was estimated at $9.0 million (in 1992 dollars).

2.7.1	**Assessment of socio-economic effects of the final regulatory action (cont'd)** With respect to income transfers to those who possess the allocated rights to sell the restricted quantities, these were anticipated to be very small. Further, the Regulations were not expected to have major impacts on any particular income groups in Canada or generate any disproportionate burdens for particular groups in society. Based on the 1997 import and export data, it was estimated that the import restrictions on recycled carbon tetrachloride would have no impact on the use of carbon tetrachloride. Effects of restricting the import of products containing carbon tetrachloride There were no recorded data available on actual imports, which imply that if such imports existed, they were negligible. As a consequence, there were no anticipated benefits from controlling carbon tetrachloride in imported products. By the same token, the costs associated with a ban on import products containing carbon tetrachloride were also considered to be negligible.
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	Environment Canada Environmental Protection Service Commercial Chemicals Evaluation Branch Chemicals Control Division
Address	Place Vincent Massey Ottawa, Ontario K1A 0H3
Telephone	(819) 994-3648
Telefax	(819) 994-0007
E-mail address	Bernard.Made@ec.gc.ca
Designated National Authority	
Institution	Environment Canada Environmental Protection Service Commercial Chemicals Evaluation Branch
Address	Place Vincent Massey Ottawa, Ontario K1A 0H3
Name of person in charge	John Buccini
Position of person in charge	Director
Telephone	(819) 997-1499
Telefax	(819) 997-4396
E-mail address	John.Buccini@ec.gc.ca

Date, signature of DNA and official seal: John Buccini 17/05/2000

Ministry/Department and authority responsible for issuing/enforcing the final regulatory action	
Institution	Health Canada Pest Management Regulatory Agency
Address	2250 Riverside Drive Ottawa, Ontario K1A 0K9
Telephone	(613) 736-3671
Telefax	(613) 735-3699
E-mail address	bill_murray@hc-sc.gc.ca
Designated National Authority	
Institution	Health Canada Pest Management Regulatory Agency
Address	2250 Riverside Drive Ottawa, Ontario K1A 0K9
Name of person in charge	Bill Murray
Position of person in charge	Senior Project Manager
Telephone	(613) 736-3671
Telefax	(613) 736-3699
E-mail address	bill_murray@hc-sc.gc.ca

UNITED NATIONS

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Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Chemical Review Committee
First meeting
Geneva, 11–18 February 2005
Item 7 (l) of the provisional agenda*

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

Carbon tetrachloride: supporting documentation from Canada

Note by the secretariat

The secretariat has the honour to provide, in the annex to the present note, the supporting documentation received from Canada in support of its notification of final regulatory action on carbon tetrachloride. The focused summary is attached in annex I, and the full supporting documentation in annex II.

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

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Annex I

Focused summary for carbon tetrachloride by Canada

Introduction

Overview of Canada's regulatory system

As one of the signatories to the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987, Canada has implemented measures to reduce the emissions of ozone-depleting substances (ODS) through strong control measures implemented by federal, provincial and territorial governments, changes in technologies and voluntary actions by industry. The federal government is generally responsible for implementing the provisions of the Montreal Protocol, including controls on the manufacture, import and export of ODSs under the *Canadian Environmental Protection Act* (CEPA).

The *Pest Control Products Act* (PCPA) is the primary federal legislation to control the import, manufacture, sale and use of all pesticides in Canada.
In keeping with Canada's commitments to the Montreal Protocol, the operation of the PCPA respects the provisions of the ODS Regulations involving evaluation of risks to health and the environment.

Events that led to the regulatory action in Canada

On September 16, 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer was signed by 24 countries, including Canada. The Montreal Protocol is an international agreement to control the production and exchange of certain ozone-depleting substances. The *Ozone-depleting Substances Regulations, 1998* reflect Canada's commitment to meet its requirements under the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol).

Significance of the regulatory action

The Regulations prohibit the manufacture, use, sell or offer for sale, import or export of bulk virgin carbon tetrachloride, except for the following, allowed uses:

- essential uses, which are to be identified at the international level on the basis of essential-use criteria adopted by the Parties. Canada considers these exemptions on a case-by-case basis.
- feedstock
- analytical standard

The Regulations prohibit the import of recovered, recycled, reclaimed or used carbon tetrachloride, except for use as feedstock or for an essential purpose.

The Regulations prohibit the manufacture and import of products that contain or is intended to contain carbon tetrachloride, except for the following allowed uses.

- military ships until January 1, 2003;
- in a pest control product until January 1, 2000 provided that the product was registered under the *Pest Control Products Act* before January 1, 1999;
- aircraft, ships or any vehicle manufactured before January 1999;
- a product imported in a consignment of personal or household effects and intended for the importer's personal use only;
- a product that is an animal or human health care product, including any bronchial dilator, inhalable steroid, topical anaesthetic and veterinary powder wound spray;
- a product that is supplied in a container of 3 L or less and that is to be used for an essential use that is a laboratory or analytical use.

Scope of the regulatory action

The ODS Regulations, 1998 includes controls for tetrachloromethane (carbon tetrachloride; CCl_4) as bulk virgin product; as recovered, recycled, reclaimed or used product; and, products containing carbrontetrachloride.

Risk Evaluation

The measures of the Montreal Protocol to control on the production and consumption of ozone-depleting substances are science based and rely on the reports prepared by assessment panels of international experts (for example, the United Nations Environment Program report *Environmental Effects of Ozone Depletion: 1991 Update, Panel Report*, Pursuant to Article 6 of the Montreal Protocol on Substances that Deplete the Ozone Layer Under the Auspices of UNEP, November 1991).

Key to the regulatory actions taken, is the fact that carbon tetrachloride has an ozone-depleting potential of 1.1. Stratospheric ozone depletion leads to an increase in the intensity of UV-B rays that reach the earth's surface, where they can disrupt important biological processes and affect air quality.

The ozone layer is beneficial to life on earth as it absorbs the harmful ultra violet (UV) radiation from the sun. Scientific research has explained the cause of ozone depletion - the release of certain industrial chemicals into the atmosphere, particularly CFCs (chlorofluorocarbons) and halons - and provided guidance for policy makers as to how these substances should be reduced. Scientific research is also providing information about the impacts of ozone depletion.

The thinning off the earth's ozone layer has allowed greater amounts of skin-burning UV radiation from the sun to reach the earth. Increased exposure to UV has been shown to harm human health, damage freshwater and marine ecosystems, reduce crop yields, and affect forests.

The most basic impact for humans is the increase in skin cancers. Over-exposure to the sun's UV rays can also cause eye damage, including cataracts, and may even weaken the immune system.

Increased UV levels will also have an impact on agriculture, including many of the world's major food crops. It has been observed that some crops, such as barley and oats, have shown decreased growth as a result of exposure to increased UV radiation.

In marine ecosystems, UV can damage the tiny single-celled plants, known as phytoplankton, which form the base of the food chain. Decreases in the food source at this early stage, may have effects throughout the entire system, and could ultimately affect fish populations.

In the Arctic, the sun never rises very high above the horizon, and much of its rays are absorbed by the atmosphere, meaning levels of UV are normally very low. If considerable ozone loss occurs in the far north, UV could rise to levels as high as those encountered in southern Canada, and Arctic residents would have to take extra steps to protect themselves. UV reflecting off snow and ice could become a particular concern. Vegetation and wildlife in the Arctic have evolved under very low levels of UV, and may have only limited natural protection against over exposure. Some species may prove to be extremely sensitive to higher UV levels.

Risk Reduction and relevance to other States

Production of the industrial chemicals which once posed a major threat to the ozone layer has been greatly reduced, and levels of some of these chemicals are now beginning to decline in the lower atmosphere.

The ozone layer is expected to eventually recover, if all nations maintain their efforts to reduce ozone-destroying chemicals. However, it will probably be more than a decade before we begin to see definite signs of a recovery, and at least the year 2050 before any substantial recovery occurs. At present, the layer is still thinning, especially at the earth's poles. The "hole" over the Antarctic continues to remain large and considerable depletions are occurring in the Arctic.

Trade

Carbon tetrachloride is not manufactured in Canada, but has been imported in Canada in 2003.

Annex II

C H E M I N F O

Canadian Centre for Occupational Health and Safety
Issue : 99-2 (May, 1999)

*** SECTION 1. CHEMICAL IDENTIFICATION ***

EMINFO RECORD NUMBER : 117
OHS CHEMICAL NAME : Carbon tetrachloride
NONYMS :
* Tetrachloromethane
* Perchloromethane
* Tetrachlorure de carbone
* Carbon tet
S REGISTRY NUMBER : 56-23-5
/NA NUMBER(S) : 1846
ECS NUMBER(S) : FG4900000
EINECS/ELINCS NUMBER : 200-262-8
EMICAL FAMILY : Halogenated alkane / chlorinated methane
LECULAR FORMULA : C-Cl4

STATUS :
The CHEMINFO record for this chemical is complete. The full format ("TOTAL") provides a detailed evaluation of health, fire and reactivity hazards, as well as recommendations on topics such as handling and storage, personal protective equipment, accidental release and first aid.

*** SECTION 2. DESCRIPTION ***

PEARANCE AND ODOUR :
lourless liquid with a sweetish, chloroform-like odour
OUR THRESHOLD :
Greater than 10 ppm
RNING PROPERTIES :
Not reliable - odour threshold exceeds the TLV. Adaptation to the odour can occur.
ES AND OCCURRENCES :
Mainly used in the synthesis of chlorofluoromethanes (FCl2 and FCl1). Other minor uses include metal degreasing agent, refrigerant, agricultural fumigant; used in laboratories. Carbon tetrachloride use has been decreasing during recent years.

** POTENTIAL HEALTH EFFECTS **

ECTS OF SHORT-TERM (ACUTE) EXPOSURE :
HALATION :
Carbon tetrachloride can cause central nervous system (CNS) effects as well as liver and kidney injury. A short-term exposure (1-14 days) to 1 ppm poses minimal risk. Exposure for 8 hours to about 20 ppm can cause mild CNS effects such as headache, dizziness, loss of coordination and nausea. Repeated (weeks to months) 8 hour daily exposures to 200 ppm can cause kidney and liver injury. Brief exposures (15 minutes) to 250 ppm may be lethal to sensitive individuals (e.g. alcoholics). Pulmonary edema (a life-threatening accumulation of fluid in the lungs) has occurred 8 days or more after an exposure but it is a result of the kidney injury (8).
N CONTACT :
Can cause burning sensation and mild reddening of skin. Carbon tetrachloride is rapidly absorbed through the skin and can cause systemic effects such as nausea, vomiting and liver and kidney injury (8).
CONTACT :
Vapour or liquid can cause slight irritation. It is suspected that carbon tetrachloride can impair vision, but there is no solid evidence to support this (7)
ESTION :

Ingestion of as little as 1.5 mL of carbon tetrachloride has caused death although 50-150 mL is usually reported as the lethal dose. Liver damage and other effects described for inhalation (CNS depression, liver injury, kidney injury) as well as stomach irritation occur following ingestion (8). Because of its high vapour pressure, it may present an aspiration hazard.

FECTS OF LONG-TERM (CHRONIC) EXPOSURE :
Repeated exposure to carbon tetrachloride may cause severe kidney and liver damage. Heart and lung failure may occur as a result.

An airborne concentration of 0.015 ppm is estimated to present minimal risk; exposure to 200 ppm for 8 hours/day for weeks/months may cause liver and kidney injury (8).

RCINOGENICITY :
Carbon tetrachloride has produced liver tumors in several animal species. Human data is limited and inconclusive (3). Overall, IARC concludes carbon tetrachloride is a 2B carcinogen (possibly carcinogenic to humans) and the ACGIH has listed it as an A2 carcinogen (suspected human carcinogen). The U.S. National Toxicology Program (NTP) identifies this chemical as one which may reasonably be anticipated to be a carcinogen.

RATOGENICITY AND EMBRYOTOXICITY :
Carbon tetrachloride can cross the placental barrier. In animal test carbon tetrachloride was decreased at doses which also caused toxicity in the mother rats.

PRODUCTIVE TOXICITY :
No human information available. In animal studies, carbon tetrachloride decreased fertility and caused testicular damage in inhalation studies but no effect was seen in feeding studies.

TAGENICITY :
No human information available. Not mutagenic in tests using bacteria and no genotoxicity when rats were given oral doses.

XICOLOGICALLY SYNERGISTIC MATERIALS :
Alcohols, such as common ethanol consumed by humans and ketones can dramatically increase the toxicity of carbon tetrachloride. Other chemicals such as phenobarbital, pesticides and haloalkanes can also increase the toxicity of carbon tetrachloride. Carbon disulfide is thought to decrease the toxicity of carbon tetrachloride (8).

TENTIAL FOR ACCUMULATION :
Complete clearance of carbon tetrachloride from the body may require 2-3 weeks.

*** SECTION 4. FIRST AID MEASURES ***

HALATION :
Take proper precautions to ensure your own safety before attempting rescue, e.g. wear appropriate protective equipment, use the "buddy" system. Remove source of contamination or move victim to fresh air.
If breathing has stopped, properly trained personnel should begin artificial respiration immediately. Avoid mouth-to-mouth contact.
If heart has stopped, properly trained personnel should begin cardiopulmonary resuscitation (CPR) immediately.
Transport victim to an emergency care facility immediately.

IN CONTACT :
Avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Quickly and gently blot or brush away excess chemical. Wash gently and thoroughly with water and non-abrasive soap for 20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). If irritation persists, repeat flushing. If breathing has stopped, trained personnel should begin artificial respiration (AR) or if the heart has stopped, cardiopulmonary resuscitation (CPR). Obtain medical attention immediately. Discard contaminated clothing, shoes and leather goods.

E CONTACT :
Quickly and gently blot or brush away excess chemical on skin around the eye(s). Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until chemical is removed, holding the eyelid(s) open. Obtain medical advice immediately.

GESTION :
Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 ozs) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water.
If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Quickly transport victim to an emergency facility.
RST AID COMMENTS :
Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or the nearest Poison Control Centre for all exposures except minor instances of inhalation or skin contact. All first aid procedures should be periodically reviewed by a physician familiar with the material and its condition of use in the workplace.

*** SECTION 5. FIRE FIGHTING MEASURES ***

ASH POINT :
Does not burn
VER FLAMMABLE (EXPLOSIVE) LIMIT (LFL/LEL) :
Not applicable
PER FLAMMABLE (EXPLOSIVE) LIMIT (UFL/UEL) :
Not applicable
TOIGNITION (IGNITION) TEMPERATURE :
Not applicable
MBUSTION AND THERMAL DECOMPOSITION PRODUCTS :
Phosgene, hydrogen chloride, chlorine, carbon monoxide and carbon dioxide
RE HAZARD COMMENTS :
Carbon tetrachloride does not burn but can decompose when strongly heated. Toxic and corrosive fumes may be released.
TINGUISHING MEDIA :
Not applicable
RE FIGHTING INSTRUCTIONS :
Move containing vessels from fire area if without risk. Cool containing vessels with flooding quantities of water until well after fire is out.

** NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX **

PA - HEALTH	: 3 - Short exposure could cause serious temporary or residual injury.
PA - FLAMMABILITY	: 0 - Will not burn
PA - REACTIVITY	: 0 - Normally stable under fire conditions, and not reactive with water.

*** SECTION 6. ACCIDENTAL RELEASE MEASURES ***

CAUTIONS :
Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Provide adequate personal protective equipment. Ventilate area. Remove sources of heat or flame to prevent formation of hazardous thermal decomposition products. Contact manufacturer/supplier for advice.

Notify government occupational health and safety and environmental agencies.
AN-UP :
Small spills: Take up with inert sorbent material. Place in suitable, covered, labelled containers. Flush area with water.

Large spills: Dike with earth, sand or inert sorbent material to contain spill. Contact occupational health and safety and environment agencies as well as supplier.

Contaminated sorbent may pose the same hazards as the spilled product.

NDLING :
Use in minimal quantities in designated areas with adequate ventilation. Avoid generating mists. Do not use near welding operations, flames or hot surfaces.

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Wear appropriate personal protective equipment. Have suitable emergency equipment (for fires, spills, leaks, etc.) readily available.

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Use approved portable containers in the work area. Empty containers may be hazardous due to residual material.

'ORAGE :
Store in a cool, dry, well-ventilated area, out of direct sunlight, away from incompatible materials and heat. Store in suitable, labelled containers, kept tightly closed when not in use and when empty, and protected from damage. Use suitable, approved storage tanks, buildings, rooms and cabinets.

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Limit quantity of material in storage. Restrict access to storage area. Post warning signs when appropriate. Keep storage area separate from populated work areas. Inspect periodically for deficiencies such as damage or leaks.

*** SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION ***

NOTE : Exposure to this material can be controlled in many ways. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. This general information can be used to help develop specific control measures. Ensure that control systems are properly designed and maintained. Comply with occupational, environmental, fire, and other applicable regulations.

MPLING AND ANALYSIS :
Sampling should only be done by trained personnel using appropriate instrumentation and sampling strategy (location, timing, duration, frequency and number of samples). Interpretation of the sampling results is related to these variables and the analytical method. Sampling should be carried out by trained personnel.

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OSHA METHOD 07 - ORGANIC VAPOURS INCLUDING CARBON TETRACHLORIDE. OSHA Analytical Methods Manual. 2nd ed. Part 1. Vol. 1. US Dept. of Labour, January 1990. Fully validated method. Collection on coconut shell charcoal sorbent tube. Desorption with carbon disulphide (CS2). Analysis by gas chromatography using flame ionization detector (FD).

.

The method described below has been reported for hydrocarbons, halogenated including carbon tetrachloride.

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NIOSH METHOD 1003 - NIOSH Manual of Analytical Methods. 4th ed. Vol. 2. Partially evaluated method. Collection on coconut shell activated charcoal sorbent tube. Desorption with carbon disulphide (CS2). Analysis by gas chromatography using flame ionization detector (FID). Estimated detection limit: 0.01 mg.

.

DIRECT READING INSTRUMENTS: Methods of detection in commercially available devices which may be suitable: flame ionization detector, infrared photometer, photometric analyzer, electronic capture gas detector, photoionization analyzer, gas chromatograph analyzer.

.

Analytical methods are reviewed in ref. 3.

INEERING CONTROLS :
Engineering control methods to reduce hazardous exposures are preferred. Methods include mechanical ventilation (dilution and local exhaust),

process or personnel enclosure, control of process conditions and process modification (e.g. substitution of a less hazardous material). Administrative controls and personal protective equipment may also be required.

Because of the high potential hazard associated with this substance, stringent control measures such as process enclosure or isolation may be necessary in addition to local exhaust ventilation.

Use a ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside.

Supply sufficient replacement air to make up for air removed by exhaust systems.

RSONAL PROTECTIVE EQUIPMENT :

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protection equipment including approved respiratory protection. Have appropriate personal protection equipment available for use in emergencies such as spills or fire.

If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. Refer to the CSA Standard Z94.4-93, "Selection, Use and Care of Respirators," available from the Canadian Standards Association, Rexdale, Ontario, M9W 1R3.

SPIRATORY PROTECTION GUIDELINES :

NIOSH RECOMMENDATIONS FOR CARBON TETRACHLORIDE (5):

AT CONCENTRATIONS ABOVE THE NIOSH REL, OR WHERE THERE IS NO REL, AT ANY DETECTABLE CONCENTRATION: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

ESCAPE: Gas mask with organic vapour canister; or escape-type SCBA.

The NIOSH Recommended Exposure Limit (REL) for carbon tetrachloride is a STEL of 2 ppm (60-minute time-weighted average).

NOTE: NIOSH has classified this material as a potential occupational carcinogen, according to specific NIOSH criteria. This classification is reflected in these recommendations for respiratory protection, which specify that only the most reliable and protective respirators be worn. The requirements in Canadian jurisdictions may vary.

The respirator use limitations specified by the approving agency and the manufacturer must be observed. Air-purifying respirators do not protect against oxygen-deficient atmospheres.
Recommendations apply only to NIOSH approved respirators.

ABBREVIATIONS: SAR = supplied-air respirator; SCBA = self-contained breathing apparatus. IDLH = Immediately Dangerous to Life or Health.

E/FACE PROTECTION :

Chemical safety goggles. A face shield may also be necessary.

N PROTECTION :

Chemical protective gloves, coveralls, boots, and/or other resistant protective clothing.

ISTANCE OF MATERIALS FOR PROTECTIVE CLOTHING :

Guidelines for carbon tetrachloride (11):
RECOMMENDED (resistance to breakthrough longer than 8 hours): Polyvinyl alcohol, Viton(TM), Barricade(TM), Responder(TM), 4H(TM) (polyethylene/ethylene vinyl alcohol).
RECOMMENDED (resistance to breakthrough longer than 4 hours): Teflon(TM).
CAUTION, use for short periods only (resistance to breakthrough within 1 to 4 hours): Tychem 10000(TM).
NOT RECOMMENDED (resistance to breakthrough less than 1 hour): Butyl

rubber, natural rubber, neoprene, nitrile rubber, polyethylene, polyvinyl chloride.
This material is a recognized skin absorption hazard (ACGIH or OSHA).
Recommendations are valid for permeation rates reaching 0.1 ug/cm2/min or 1 mg/m2/min and over. Resistance of specific materials can vary from product to product. Breakthrough times are obtained under conditions of continuous contact, generally at room temperature. Evaluate resistance under conditions of use and maintain clothing carefully.

POSURE CONTROLS/PERSONAL PROTECTION COMMENTS :
Remove contaminated clothing promptly. Keep contaminated clothing in closed containers. Discard or launder before rewearing. Inform laundry personnel of contaminant's hazards.

Do not smoke, drink or eat in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.

** EXPOSURE GUIDELINES **

* THRESHOLD LIMIT VALUES (TLVs) / AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH) / 1999 *

ME-WEIGHTED AVERAGE (TLV-TWA) : 5 ppm (31 mg/m3) - Carcinogenicity Designation A2 - Skin

ORT-TERM EXPOSURE LIMIT (TLV-STEL) :
10 ppm (63 mg/m3) - Carcinogenicity Designation A2 - Skin

V BASIS - CRITICAL EFFECT(S) : Liver
Cancer

V COMMENTS :
CARCINOGENICITY DESIGNATION A2 - Suspected Human Carcinogen: Substance is carcinogenic in laboratory animals under conditions that are considered relevant to worker exposure. Available human studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans. Worker exposure to an A2 carcinogen should be controlled to levels as low as reasonably achievable below the TLV.

"SKIN" NOTATION: Contact with skin, eyes and mucous membranes can contribute to the overall exposure and may invalidate the TLV. Consider measures to prevent absorption by these routes.

NOTE: In many jurisdictions, exposure limits are similar to the ACGIH TLVs. Since the manner in which exposure limits are established, interpreted and implemented can vary, obtain detailed information from the appropriate government agency in each jurisdiction.

* PERMISSIBLE EXPOSURE LIMITS (PELs) / FINAL RULE LIMITS / U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) *

IE WEIGHTED AVERAGE (PEL-TWA) : 2 ppm (12.6 mg/m3)

NOTE: The OSHA PEL Final Rule Limits are currently non-enforceable due to a court decision. The OSHA PEL Transitional Limits are now in force.

* PERMISSIBLE EXPOSURE LIMITS (PELs) / TRANSITIONAL LIMITS / U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) *

LING EXPOSURE LIMIT (PEL-C) : 10 ppm; CEILING: 25 ppm
NSITIONAL LIMIT PEL COMMENTS :
ACCEPTABLE MAXIMUM PEAK ABOVE THE ACCEPTABLE CEILING CONCENTRATION FOR AN 8-HR SHIFT: 200 ppm (5 minutes in any 4-hr-maximum duration.) (Table Z-2).

* EMERGENCY RESPONSE PLANNING GUIDELINES (ERPGs) / AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA) *

ERPG-1 : 20 ppm
ERPG-2 : 100 ppm
ERPG-3 : 750 ppm (12)

The ERPG-1 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing other than mild transient adverse health effects or perceiving a clearly defined, objectional odor.

The ERPG-2 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.

The ERPG-3 is the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hr without experiencing or developing life-threatening health effects.

NOTE : Users of the ERPG values are strongly encouraged to consult the documentation before use.

*** SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES ***

LECULAR WEIGHT : 153.84
NVERSION FACTOR :
1 ppm = 6.29 mg/m3; 1 mg/m3 = 0.159 ppm
LTING POINT : -23 deg C (-9.4 deg F)
ILING POINT : 76.5 deg C (170 deg F)
LATIVE DENSITY (SPECIFIC GRAVITY) :
1.594 (water = 1)
LUBILITY IN WATER :
Very low (0.05 mL/100 mL)
LUBILITY IN OTHER LIQUIDS :
Soluble in acetone; miscible with alcohol, benzene, chloroform, ether, carbon disulfide, petroleum ether.
POUR DENSITY : 5.32 (air = 1)
POUR PRESSURE : 91.3 mm Hg at 20 deg C
URATION VAPOUR CONCENTRATION : 12% at 20 deg C
APORATION RATE : 12.8 (butyl acetate = 1)
VALUE : Not applicable
ITICAL TEMPERATURE : Not available
EFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT) :
LOG KOW = 2.64

*** SECTION 10. STABILITY AND REACTIVITY ***

ABILITY :
Stable
ARDOUS POLYMERIZATION :
Does not occur
OMPATIBILITY - MATERIALS TO AVOID :
FLUORINE - reacts strongly
SODIUM AND POTASSIUM METALS - explosive reaction
ALUMINUM - reacts strongly
ROSIVITY TO METALS :
Not corrosive to iron and nickel. Reacts slowly with copper and lead. Can react explosively with aluminum (3).

*** SECTION 11. TOXICOLOGICAL INFORMATION ***

LD50 (rat, oral): 2800-2920 mg/kg (3)
LD50 (mouse, oral): 12.1-14.4 g/kg (3)
LD50 (guinea pig, dermal): greater than 15000 mg/kg (8)
LC50 (mouse): 9500 ppm (8-hour exposure)

CARCINOGENICITY: Carbon tetrachloride caused liver tumours when administered orally to mice, rats and hamsters. It also caused liver tumours in rats which inhaled carbon tetrachloride daily for 7 months (3). IARC concludes there is sufficient evidence of carcinogenicity in experimental animals.

TERATOGENICITY AND FETOTOXICITY: No teratogenic effects have been seen in rat studies. Some fetotoxicity has been seen in rat studies but it occurred at dose levels that also caused maternal toxicity (4).

REPRODUCTIVE EFFECTS: An airborne concentration of 200 ppm decreased fertility of rats in one study, and in another study 200 ppm caused some testicular damage (8). No reproductive effects were seen in other studies where rats were fed 80 or 200 ppm carbon tetrachloride in the diet (4).

MUTAGENICITY: No mutagenic effects seen in bacterial studies (3). No gerotoxic effects seen where rats were given oral doses (8).

*** SECTION 12. ECOLOGICAL INFORMATION ***

NOTE : This section is subject to future development.

*** SECTION 13. DISPOSAL CONSIDERATIONS ***

Review federal, provincial and local government requirements prior to disposal.

Disposal by incineration or secure landfill may be acceptable.

*** SECTION 14. TRANSPORT INFORMATION ***

** CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) SHIPPING INFORMATION **

DESCRIPTION AND SHIPPING NAME: Carbon tetrachloride (R10)
PRODUCT IDENTIFICATION NUMBER (PIN): 1846
CLASSIFICATION: 6.1 - Poisonous substance; 9.2 - Substance hazardous to the environment
SPECIAL PROVISIONS: 109
PACKING GROUP: II
REGULATED LIMIT: 230 kg

NOTE: This information incorporates Schedule No. 21 amendments to the Transportation of Dangerous Goods Act, 1992, effective December 13, 1995.

** U.S. DEPARTMENT OF TRANSPORT (DOT) HAZARDOUS MATERIALS SHIPPING INFORMATION (49 CFR) **

HAZARDOUS MATERIAL DESCRIPTION AND PROPER SHIPPING NAME: Carbon tetrachloride
HAZARD CLASS OR DIVISION: 6.1
IDENTIFICATION NUMBER: UN1846
PACKING GROUP: II

NOTE : This information was taken from the U.S. Code of Federal Regulations Title 49 - Transportation and is effective October 1, 1997.

*** SECTION 15. REGULATORY INFORMATION ***

** CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) **

POSED WHMIS CLASSIFICATION :
D1A - Poisonous and infectious material - Immediate and serious effects -

Very toxic
D2A - Poisonous and infectious material - Other effects - Very toxic
D2B - Poisonous and infectious material - Other effects - Toxic
MIS HEALTH EFFECTS :
TDG class 6.1 group II - very toxic - immediate
Chronic toxicity - toxic - other
Carcinogenicity - very toxic - other
MIS INGREDIENT DISCLOSURE LIST :
Included for disclosure at 0.1% or greater
TAILED WHMIS CLASSIFICATION ACCORDING TO CRITERIA :
CLASS A - COMPRESSED GAS: Does not meet criteria
CLASS B - FLAMMABLE & COMBUSTIBLE MATERIAL: Does not meet criteria. Does not burn.
CLASS C - OXIDIZING MATERIAL: Does not meet criteria
CLASS D - POISONOUS AND INFECTIOUS MATERIAL. DIVISION 1 - IMMEDIATE AND SERIOUS TOXIC EFFECTS: Meets criteria for "Very toxic material"
Acute Lethality: Does not meet criteria
Transportation of Dangerous Goods (TDG): "Very toxic"; class 6.1, packing group II
CLASS D - POISONOUS AND INFECTIOUS MATERIAL. DIVISION 2 - OTHER TOXIC EFFECTS: Meets criteria for both "Very toxic material" and "Toxic material"; see detailed evaluation below.
CHRONIC HEALTH EFFECTS: "Toxic"; liver damage from repeated exposure at 50 ppm
CARCINOGENICITY: "Very toxic"; listed in IARC group 2B.(3)
TERATOGENICITY AND EMBRYOTOXICITY: Insufficient information
REPRODUCTIVE TOXICITY: Insufficient information
MUTAGENICITY: Insufficient information
RESPIRATORY TRACT SENSITIZATION: Does not meet criteria; not reported as human respiratory sensitizer.
SKIN SENSITIZATION: Does not meet criteria
SKIN IRRITATION: "Toxic"; direct contact causes burning and reddening of skin in humans.
EYE IRRITATION: Insufficient information
CLASS E - CORROSIVE MATERIAL: Does not meet criteria
CLASS F - DANGEROUSLY REACTIVE MATERIAL: Does not meet criteria

** U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) **

IA HAZARD COMMUNICATION EVALUATION :
Meets criteria for hazardous material, as defined by 29 CFR 1910.1200.

** EUROPEAN UNION (EU)
CLASSIFICATION AND LABELLING INFORMATION **

CLASSIFICATION :
Carcinogenic, Category 3; Toxic; Dangerous for the environment. [Carc.Cat.3;T;R52-53;N] (13)
RISK PHRASES :
Toxic by inhalation, in contact with skin, and if swallowed. Possible risk of irreversible effects. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Dangerous for the ozone layer. [R:23/24/25-40-48/23-52/53-59].
SAFETY PHRASES :
Keep locked up and out of reach of children.* Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer). Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible). Refer to manufacturer/supplier for information on recovery/recycling. Avoid release to the environment. Refer to special instructions/safety data sheet. [S:(1/2)*23-36/37-45-59-61]
*This safety phrase can be omitted from the label when the substance or preparation is sold for industrial use only.
Safety phrases relate to the highest concentration division indicated, but

may also be applicable to lower concentrations.

COMMENTS :
CONCENTRATION GREATER THAN OR EQUAL TO 1%: Toxic. Toxic by inhalation, in contact with skin, and if swallowed. Possible risk of irreversible effects. Toxic: danger of serious damage to health by prolonged exposure through inhalation. [T;R23/24/25-40-48/23]
CONCENTRATIONS GREATER THAN OR EQUAL TO 0.2% AND LESS THAN 1%: Harmful. Harmful by inhalation, in contact with skin and if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation. [Xn;R20/21/22-48/20]

*** SECTION 16. OTHER INFORMATION ***

LECTED BIBLIOGRAPHY :
(1) Torkelson, T.R.; Rowe, V.K. In: Clayton, G.D.; Clayton, F.E., eds. Patty's industrial hygiene and toxicology. 3rd revised edition. Vol. 2B : toxicology. New York, NY; Toronto, Ontario : John Wiley and Sons, Inc., 1981. p. 3472-3478
(2) Mackison, F.W.; Stricoff, R.S.; Partridge, L.J., Jr., eds. Occupational health guideline for carbon tetrachloride. In: Occupational health guidelines for chemical hazards (NIOSH) publication ; no. 81-123). Washington, D.C. : NIOSH/OSHA, 1981
(3) IARC monographs on the evaluation of the carcinogenic risk of chemicals to humans. Vol. 20. International Agency for Research on Cancer, 1979. p. 371-399
(4) Barlow, S.M., et al. Reproductive hazards of industrial chemicals : an evaluation of animal and human data. Academic Press, 1984. p. 200
(5) NIOSH pocket guide to chemical hazards. NIOSH, June 1994. p. 54-55
(6) Organo-chlorine solvents : health risks to workers. Royal Society of Chemistry, 1986. p. 225-254
(7) Grant, W.M. Toxicology of the eye. 3rd ed. Charles C. Thomas, 1986. p. 187-189
(8) Toxicological profile for carbon tetrachloride (TP 89/05). Agency for Toxic Substances and Disease Registry, 1989.
(9) Eighth Report on Carcinogens, 1998 Summary. U.S. Department of Health and Human Services, National Toxicology Program, 1998
(10) Fire protection guide to hazardous materials. 11th ed. National Fire Protection Association, 1994. p. 49-36
(11) Forsberg, K., et al. Quick selection guide to chemical protective clothing. 3rd ed. Van Nostrand Reinhold, 1997
(12) Emergency Response Planning Guidelines for Carbon Tetrachloride. American Industrial Hygiene Association, 1996
(13) European Communities. Commission Directive 96/54/EC. July 30, 1996

Information on chemicals reviewed in the CHEMINFO database is drawn from a number of publicly available sources. A list of general references used to compile CHEMINFO records is available in the database Help.

/IEW/PREPARATION DATE :
1987-07-24
/ISION INDICATORS :
NFPA (health); 1993-03
NFPA (reactivity); 1993-03
Carcinogenicity; 1993-03
Trans PEL-TWA; 1993-04
EU number; 1995-10
EU Safety; 1995-10
Sampling; 1995-10
Respiratory guidelines; 1995-10
ERPG: 1995-10
TDG; 1995-10
PEL-TWA: 1996-06
Ceiling exposure limit: 1996-06
TLV-TWA; 1996-09

TLV-STEL; 1996-09
WHMIS (detailed class); 1997-07
WHMIS (proposed class); 1997-07
US transport; 1998-03
Resistance of materials; 1998-05
TLV comments; 1998-08
EU Classification; 1998-11
EU Risk; 1998-11
Bibliography; 1999-02

*** END OF RECORD ***

EPA United States Environmental Protection Agency
Office of Air Quality Planning & Standards OAQPS
TTNWeb LAIW

CARBON TETRACHLORIDE

56-23-5

Hazard Summary

- Acute (short-term) inhalation and oral exposures to carbon tetrachloride have been observed to **damage primarily the liver and kidneys of humans.** Depression of the central nervous system (CNS) has also been reported. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting.
- Chronic (long-term) inhalation or oral exposure to carbon tetrachloride produces **liver and kidney damage** in humans.
- The U.S. Environmental Protection Agency (EPA) has not established a Reference Concentration (RfC) for carbon tetrachloride.
- The Reference Dose (RfD) for carbon tetrachloride is 0.0007 mg/kg/d.[a] EPA estimates that consumption of this dose or less, over a lifetime, would not likely result in the occurrence of chronic, noncancer effects.[b]
- No information is available on the reproductive or developmental effects of carbon tetrachloride in humans. Reproductive effects, such as decreased fertility in rats, decreased sperm production in male rats, degenerative changes in the testes, and a decreased survival rate of newborns, have been observed in animals exposed to carbon tetrachloride orally and by inhalation. Birth defects have not been observed in animals.
- Human data on the carcinogenic effects of carbon tetrachloride are limited. Studies in animals have shown that ingestion of carbon tetrachloride increases the risk of **liver cancer.** EPA has classified carbon tetrachloride as a Group B2, **probable human carcinogen of low carcinogenic hazard,** with a $1/ED_{10}$ value of 0.34 per (mg/kg)/d[c] and an inhalation unit risk of 1.5×10^{-5} $(\mu g/m^3)^{-1}$.

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[a] Milligrams per kilogram per day is one way to measure the amount of the contaminant that is consumed in food.

[b] The RfD is not a direct estimator of risk but rather a reference point to gauge the potential effects. Exceedance of the RfD does not imply that an adverse health effect would necessarily occur. As the amount and frequency of exposures exceeding the RfD increase, the probability of adverse health effects also increases.

[c] The $1/ED_{10}$ value is a measure of the carcinogenic potency of a chemical. The value reported here has been proposed in the hazard ranking of hazardous air pollutants in EPA's proposed rulemaking (Section 112(g) of the Clean Air Act, April 1994).

Please Note: The main sources of information for this fact sheet are EPA's Integrated Risk Information System (IRIS), which contains information on oral chronic toxicity of carbon tetrachloride and the RfD, and the carcinogenic effects of carbon tetrachloride including the unit cancer risk for inhalation exposure,

and the Agency for Toxic Substances and Disease Registry's (ATSDR's) *Toxicological Profile for Carbon Tetrachloride*. Other secondary sources include the Hazardous Substances Data Bank (HSDB), a database of summaries of peer-reviewed literature, and the Registry of Toxic Effects of Chemical Substances (RTECS), a database of toxic effects that are not peer reviewed.

Environmental/Occupational Exposure

- Individuals may be exposed to carbon tetrachloride in the air from accidental releases from production and uses, and from its disposal in landfills. (1)
- Carbon tetrachloride is also a common contaminant of indoor air; the sources of exposure appear to be building materials or products, such as cleaning agents, used in the home. (1)
- Workers involved in the manufacture or use of carbon tetrachloride are most likely to have significant exposures to carbon tetrachloride. (1)
- Individuals may also be exposed to carbon tetrachloride by drinking contaminated water. (1,2)
- In the past, ingestion of bread or other products made with carbon tetrachloride-fumigated grain may have contributed to dietary exposure, but this route of exposure is no longer believed to be of significance. (2)

Assessing Personal Exposure

- Measurement of carbon tetrachloride in exhaled breath has been the most convenient medium to determine exposure; measurements in blood, fat, or other tissues have also been used as indicators of exposure. However, these tests are not routinely available and cannot be used to predict whether any health effects will result. (1)

Health Hazard Information

Acute Effects:

- Acute (short-term) inhalation and oral exposures to carbon tetrachloride have been observed primarily to damage the liver and kidneys of humans. Depression of the central nervous system has also been reported. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting. (1-6)
- Delayed pulmonary edema has been observed in humans exposed to carbon tetrachloride by inhalation and ingestion, but this is believed to be due to injury to the kidney rather than direct action of carbon tetrachloride on the lung. (1)
- Acute animal exposure tests, such as the LC_{50} and LD_{50} tests in rats, mice, rabbits, and guinea pigs, have demonstrated carbon tetrachloride to have low toxicity from inhalation exposure, low-to-moderate toxicity from ingestion, and moderate toxicity from dermal exposure. (7)

Chronic Effects (Noncancer):

- Chronic (long-term) inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans and animals. (1,3,6,8)
- EPA has not established an RfC for carbon tetrachloride. (9)
- The RfD for carbon tetrachloride is 0.0007 mg/kg/d based on liver lesions in rats. (9)
- EPA has high confidence in the principal study on which the RfD was based because the study was well conducted and good dose-response was observed in the liver, which is the target organ for carbon

tetrachloride toxicity; medium confidence in the database because four additional subchronic studies support the RfD, but reproductive and teratology endpoints are not well investigated; and, consequently, medium confidence in the RfD.

Reproductive/Developmental Effects:

- No information is available on the reproductive or developmental effects of carbon tetrachloride in humans.
- Decreased fertility in rats, decreased sperm production in male rats, degenerative changes in the testes, and a decreased survival rate of newborns have been observed in animals exposed to carbon tetrachloride orally and by inhalation. (1,6)
- Birth defects have not been observed in animals exposed to carbon tetrachloride by inhalation or ingestion. (1,2,8)

Cancer Risk:

- Occasional reports have noted the occurrence of liver cancer in workers who had been exposed to carbon tetrachloride by inhalation exposure; however, the data are not sufficient to establish a cause-and-effect relationship. (1,6,8-10)
- Liver tumors have developed in animals exposed to carbon tetrachloride by gavage (experimentally placing the chemical in their stomachs). (1-4,6,8-11)
- EPA has classified carbon tetrachloride as a Group B2, probable human carcinogen. (8,9)
- EPA uses mathematical models, based on human and animal studies, to estimate the probability of a person developing cancer from breathing air containing a specified concentration of a chemical. EPA calculated an inhalation unit risk of 1.5×10^{-5} $(\mu g/m^3)^{-1}$. EPA estimates that, if an individual were to breathe air containing carbon tetrachloride at 0.07 $\mu g/m^3$[(1)] over his or her entire lifetime, that person would theoretically have no more than a one-in-a-million increased chance of developing cancer as a direct result of breathing air containing this chemical. Similarly, EPA estimates that breathing air containing 0.7 $\mu g/m^3$ would result in not greater than a one-in-a-hundred thousand increased chance of developing cancer, and air containing 7.0 $\mu g/m^3$ would result in not greater than a one-in-a-ten thousand increased chance of developing cancer. (9)
- EPA's Office of Air Quality Planning and Standards, for a hazard ranking under Section 112(g) of the Clean Air Act Amendments, has ranked carbon tetrachloride in the nonthreshold category. The $1/ED_{10}$ value is 0.34 per (mg/kg)/d and this would place it in the low category under Superfund's ranking for carcinogenic hazard. (12)

Physical Properties

- The chemical formula for carbon tetrachloride is CCl_4, and its molecular weight is 153.8 g/mol. (1,2)
- Carbon tetrachloride is a clear, nonflammable liquid which is almost insoluble in water. (1)
- Carbon tetrachloride has a sweet characteristic odor, with an odor threshold above 10 ppm. (1)
- The vapor pressure for carbon tetrachloride is 91.3 mm Hg at 20 C, and its log octanol/water partition coefficient ($\log K_{ow}$) is 2.64. (1)

Uses

- Carbon tetrachloride has been produced in large quantities to make refrigerants and propellants for

aerosol cans; production of fluorocarbon propellants is being phased out due to their effect on the ozone layer and this use of carbon tetrachloride is currently declining. (1)

- Carbon tetrachloride is used as a solvent for oils, fats, lacquers, varnishes, rubber waxes, and resins and as a starting material in the manufacture of organic compounds. (5,12)
- Carbon tetrachloride was formerly used as a dry cleaning agent, fire extinguisher, grain fumigant, and pesticide. (1,5,12)

Conversion Factors:

To convert from ppm to mg/m^3: mg/m^3 = (ppm) × (molecular weight of the compound)/(24.45). For carbon tetrachloride: 1 ppm = 6.3 mg/m^3.

Health Data from Inhalation Exposure

Concentration (mg/m^3)	Health numbers[a]	Regulatory, advisory numbers[b]	Reference
100,000.0			
-- -- -- -- 10,000.0	• LC_{50} (mice) (59,938 mg/m^3) • LC_{50} (rats) (50,336 mg/m^3)		7 7
-- -- -- -- 100.0			
-- -- -- -- 10.0		• MSHA standard (63 mg/m^3) • ACGIH TLV (31 mg/m^3) • OSHA PEL and NIOSH REL (12.6 mg/m^3)	7 7 7
-- -- -- -- 1.0			
-- -- -- -- 0.1			
-- -- --			

-- 0.01			
-- -- -- -- 0.001			
-- -- -- -- 0.0001			
-- -- -- -- 0.00001	• EPA Cancer Risk Level (1-in-a-million excess lifetime risk)[c] (7×10^{-5} mg/m^3)		9

See notes on following page.

ACGIH TLV--American Conference of Governmental and Industrial Hygienists' threshold limit value expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effects.

LC_{50} (Lethal Concentration$_{50}$)--A calculated concentration of a chemical in air to which exposure for a specific length of time is expected to cause death in 50% of a defined experimental animal population.

MSHA--Mine Safety and Health Administration.

NIOSH REL--National Institute of Occupational Safety and Health's recommended exposure limit; NIOSH-recommended exposure limit for an 8- or 10-h time-weighted-average exposure and/or ceiling.

OSHA PEL--Occupational Safety and Health Administration's permissible exposure limit expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effect averaged over a normal 8-h workday or a 40-h workweek.

[a] Health numbers are toxicological numbers from animal testing or risk assessment values developed by EPA.

[b] Regulatory numbers are values that have been incorporated in Government regulations, while advisory numbers are nonregulatory values provided by the Government or other groups as advice.

[c] These cancer risk estimates were derived from oral data and converted to provide the estimated inhalation risk.

References

1. Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for Carbon Tetrachloride* (Draft). U.S. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1992.
2. U.S. Environmental Protection Agency. *Carbon Tetrachloride Health Advisory*. Office of Drinking Water, Washington, DC. 1987.
3. U.S. Department of Health and Human Services. Hazardous Substances Databank (HSDB, online database). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
4. International Agency for Research on Cancer (IARC). *IARC Monographs on the Evaluation of the*

Carcinogenic Risk of Chemicals to Humans: Some Halogenated Hydrocarbons. Volume 20. World Health Organization, Lyon. 1979.
5. M. Sittig. *Handbook of Toxic and Hazardous Chemicals and Carcinogens*. 2nd ed. Noyes Publications, Park Ridge, NJ. 1985.
6. U.S. Environmental Protection Agency. *Health Affects Document for Carbon Tetrachloride*. EPA/600/8-82-001F. Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment, Office of Research and Development, Cincinnati, OH. 1984.
7. U.S. Department of Health and Human Services. Registry of Toxic Effects of Chemical Substances (RTECS, online database). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
8. U.S. Environmental Protection Agency. *Updated Health Effects Assessment for Carbon Tetrachloride*. EPA/600/8-89/088. Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment, Office of Research and Development, Cincinnati, OH. 1989.
9. U.S. Environmental Protection Agency. *Integrated Risk Information System (IRIS) on Carbon Tetrachloride*. Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment, Office of Research and Development, Cincinnati, OH. 1993.
10. International Agency for Research on Cancer (IARC). *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans: Chemicals, Industrial Processess and Industries Associated with Cancer in Humans*. Supplement 4. World Health Organization, Lyon. 1982.
11. International Agency for Research on Cancer (IARC). *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man*. Volume 1. World Health Organization, Lyon. 1972.
12. *The Merck Index. An Encyclopedia of Chemicals, Drugs, and Biologicals*. 11th ed. Ed. S. Budavari. Merck and Co. Inc., Rahway, NJ. 1989.
13. U.S. Environmental Protection Agency. *Technical Background Document to Support Rulemaking Pursuant to the Clean Air Act--Section 112(g). Ranking of Pollutants with Respect to Hazard to Human Health*. EPA-450/3-92-010. Emissions Standards Division, Office of Air Quality Planning and Standards, Research Triangle Park, NC. 1994.

1. *Micrograms per cubic meter is the unit of measurement for chemicals in air.

UNITED NATIONS

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Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Chemical Review Committee
First meeting
Geneva, 11–18 February 2005

Report of the Chemical Review Committee on the work of its first meeting

I. Opening of the session

1. The Chemical Review Committee, hereinafter referred to as the Committee, was established pursuant to decision RC-1/6 of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, adopted in September 2004 at the first session of the Conference of the Parties to the Convention, with a membership of 31 government-designated experts appointed on the basis of the regions identified by the Conference of the Parties at its first session.

2. In accordance with paragraph 13 of that decision and pursuant to the provisions of articles 5, 6, 7 and 9 of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the functions and responsibilities of the Committee are to make recommendations on the inclusion of chemicals notified as banned and severely restricted, make recommendations for the inclusion of severely hazardous pesticide formulations, prepare, as appropriate, relevant draft decision-guidance documents and make recommendations on the removal of chemicals from Annex III.

3. The first session of the Committee was held at the Varembé Conference Centre in Geneva from 11 to 18 February 2005. The session was opened at 10 a.m. on Friday, 11 February 2005, by Mr. Niek van der Graaff, Executive Secretary of the Rotterdam Convention, who welcomed all participants and noted that the Committee was a key component in the operation of the Rotterdam Convention. He reminded experts that their membership of the Committee was provisional, pending definitive appointment by the Conference of the Parties. He also stressed that they performed on the Committee in their individual capacity, independent of the Governments that had designated them. He expressed the hope that the Committee would be able to benefit from the work accomplished by its predecessor, the Interim Chemical Review Committee. He commended non-governmental organizations on their contribution to that work and looked forward to fruitful outcomes of the current meeting.

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II. Election of officers

4. At its opening meeting, the Committee agreed to defer the election of officers until after its consideration of the procedural and policy matters on the agenda, so that the benefit of those discussions could feed into its decisions on the election of the bureau and the chair. Accordingly, the Committee also agreed that, until the election of the bureau, Mr. van der Graaff, as representative of the secretariat, would serve as acting chair.

III. Organizational matters

5. The following officers served on the Bureau of the Committee:

Chair: Mr. André Mayne (Australia)

Vice-Chairs: Mr. Mohammed Jamal Hajjar (Syrian Arab Republic)
Mr. Yuriy Kundiev (Ukraine)
Ms. Norma Ethel Nudelman (Argentina)
Ms. Oluronke Ajibike Soyombo (Nigeria)

Ms. Soyombo also agreed to serve as rapporteur.

6. The session was attended by the following 26 experts: Mr. Hamoud Darwish Salim Al-Hasani (Oman), Mr. Leonello Attias (Italy), Mr. Klaus Berend (Netherlands), Ms. Mercedes Bolaños (Ecuador), Ms. Hyacinth Chin Sue (Jamaica), Ms. Kyunghee Choi (Republic of Korea), Ms. Ana Laura Chouhy Gonella (Uruguay), Mr. Isak Djumaev (Kyrgyzstan), Mr. Cesar Koppe Grisolia (Brazil), Mr. Mohammed Jamal Hajjar (Syrian Arab Republic), Mr. Sibbele Hietkamp (South Africa), Ms. Bettina Hitzfeld (Switzerland), Ms. Supranee Impithuksa (Thailand), Mr. Lars Juergensen (Canada), Mr. Aloys Kamatari (Rwanda), Mr. Mohamed Ammar Khalifa (Libyan Arab Jamahiriya), Mr. Yuriy Ilyich Kundiev (Ukraine), Mr. Halimi Bin Mahmud (Malaysia), Mr. Ernest Mashimba (United Republic of Tanzania), Mr. André Mayne (Australia), Mr. Mario Nichelatti (France), Ms. Norma Ethel Sbarbati Nudelman (Argentina), Mr. Magnus Nyström (Finland), Mr. John Pwamang (Ghana), Mr. Ousmane Sow (Senegal) and Ms. Oluronke Ajibike Soyombo (Nigeria).

7. Observers from the following countries and regional economic integration organizations were also present: Algeria, Argentina, Australia, Austria, Brazil, Canada, China, Dominican Republic, El Salvador, European Commission, Germany, Jordan, Mexico, Netherlands, Norway, Poland, Qatar, Russian Federation, Switzerland, Ukraine and United States of America.

8. Representatives of the following intergovernmental organizations and United Nations specialized agency were also present: Economic Commission for Europe, International Programme for Chemical Safety and World Health Organization.

9. The following non-governmental organizations were also represented: Bayer Crop Science, Chrysotile Association, DuPont Crop Protection, Syngenta Crop Protection AG, FMC Corporation, Indian Chemical Manufacturers Association, NGO Industrial Association and Pesticide Action Network UK.

A. Adoption of the agenda

10. At its opening meeting, the Committee adopted the following agenda on the basis of the provisional agenda (UNEP/FAO/RC/CRC.1/1):

1. Opening of the session.

2. Election of officers.

3. Organizational matters:

   (a) Adoption of the agenda;

   (b) Organization of work.

4. Review of the outcome of the first meeting of the Conference of the Parties.

5. Review of the role and mandate of the Chemical Review Committee.

6. Operational procedures for the Chemical Review Committee: working procedures and policy guidance forwarded from the Conference of the Parties:

   (a) Working procedures:

      (i) Process for drafting decision-guidance documents;
      (ii) Preparing internal proposals and decision-guidance documents for banned or severely restricted chemicals;
      (iii) Preparing internal proposals and decision-guidance documents for severely hazardous pesticide formulations;
      (iv) Determination of existing trade in chemicals;
      (v) Common and recognized patterns of use of severely hazardous pesticide formulations;

   (b) Policy guidance:

      (i) Preparation and use of focused summaries;
      (ii) Bridging information;
      (iii) Contaminants;
      (iv) Risk evaluation in the context of the Rotterdam Convention.

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

   (a) Chlordecone;

   (b) Endosulfan;

   (c) Endrin;

   (d) Methamidophos;

   (e) Methyl bromide;

   (f) Methyl parathion;

   (g) Phosphamidon;

   (h) 2-naphthylamine;

   (i) 4-aminobiphenyl;

   (j) Benzidine;

   (k) Bis(chloromethyl)ether;

   (l) Carbon tetrachloride;

   (m) Chrysotile asbestos;

   (n) Tributyl tin compounds.

8. Other matters.

9. Adoption of the report.

10. Closure of the meeting.

B Organization of work

11. At its opening meeting, the Committee decided to conduct its work in plenary session at meetings between 9 a.m. and 12.30 p.m. and 2 p.m. and 5 p.m., and to form open-ended task groups and drafting groups as necessary.

12. The acting chair introduced the scenario note for the Committee's first meeting (UNEP/FAO/RC/CRC.1/2), which set out its general objectives and possible outcomes. The Committee

would need to elect a bureau with representatives from each of the five United Nations regions and, from that bureau, a chair and rapporteur. It was noted that the Chair was to be appointed by the Conference of the Parties and would therefore be acting on a provisional basis until that time. Efforts would be made to ensure a common baseline of understanding by all Committee members of the operation of the PIC procedure and the role and responsibilities of the Committee. The primary task of the Committee at its first session would be to review the notifications of final regulatory actions and the supporting documentation for 14 candidate chemicals submitted in accordance with article 5 of the Convention. The secretariat had identified lead experts for each of those chemicals who could guide discussions in task groups and prepare preliminary assessments for presentation to the plenary Committee. He stressed that the task groups would be open-ended and would not take any decisions on the chemicals: it would be up to the Committee to decide whether or not to recommend to the Conference of the Parties the inclusion of any or all of those chemicals in Annex III to the Convention.

IV. Review of the outcome of the first meeting of the Conference of the Parties

13. The secretariat introduced the note on the outcome of the first meeting of the Conference of the Parties (UNEP/FAO/RC/CRC.1/4). He noted that decisions RC-1/2, RC-1/6 and RC-1/7, which established the PIC regions, established the Committee and dealt with conflicts of interest, respectively, would be taken up by the Committee under agenda item 5.

14. The Committee took note of the outcome of the first meeting of the Conference of the Parties.

V. Review of the role and mandate of the Chemical Review Committee

15. The secretariat introduced the note on the review of the role and mandate of the Committee (UNEP/FAO/RC/CRC.1/3) and drew attention to the annex to that note, detailing the functions entrusted by the Convention to the Committee, as given in articles 5, 6, 7 and 9, and the establishment, composition, organization and operation of the Committee, as provided for by decisions RC-1/6 and RC-1/7 of the Conference of the Parties.

16. The secretariat made presentations on the Rotterdam Convention and its operation, the development and use of decision-guidance documents and the role of the Chemical Review Committee.

17. Following those presentations, members raised initial points on issues related to the review, updating and refinement of the decision-guidance documents; on the circulation of information on eventual continued safe use of a banned or severely restricted chemical; on follow-up by the Committee to new notifications for a chemical already in Annex III of the Convention; on the need to ensure full and representative participation of observers from intergovernmental and non-governmental organizations; and on the need for proactive action with relation to article 9, removal of chemicals from Annex III of the Convention. The issues raised were noted for further discussion under the relevant agenda items.

VI. Operational procedures for the Chemical Review Committee: working procedures and policy guidance forwarded from the Conference of the Parties

A. Working procedures

1. Process for drafting decision-guidance documents

18. The Secretariat introduced the working paper on the process for drafting decision-guidance documents (UNEP/FAO/RC/CRC.1/5) and suggested that the process used during the interim PIC procedure was still valid and, with some rewording, could continue to be used for the work of the Committee. The Committee was reminded that the paper was a working document and could be modified in the light of growing experience in preparing decision-guidance documents. It was further noted that the Committee would work in English only. To ensure complete transparency, however, the decision-guidance documents would be prepared in the six official languages of the United Nations before their final consideration by the Committee.

19. The Committee noted that the process used to date was a good one, owing its success largely to the willingness of members of the Interim Chemical Review Committee to work intersessionally. The attention of the Committee was drawn to the fact that the process was open and transparent. There was some debate as to the correctness of using the current titles of the explanatory notes to the process, since they might erroneously give the impression that the Rotterdam Convention was endorsing the banning or severe restriction of the chemicals for which decision-guidance documents were being prepared. Text was agreed that more closely reflected the exact wording of the Convention text for those titles.

20. One member of the Committee noted the absence of a process for the implementation of article 9 on the removal of chemicals from Annex III.

21. The Committee adopted the paper, as amended, and agreed to forward it to the Conference of the Parties. The paper is contained in annex II to the present report.

2. Preparing internal proposals and decision-guidance documents for banned or severely restricted chemicals

22. The secretariat introduced the working paper on preparing internal proposals and decision-guidance documents for banned or severely restricted chemicals (UNEP/FAO/RC/CRC.1/6), stressing that the paper was a work in progress. It was recognized that the information available for pesticides might differ from that for industrial chemicals and that separate guidance might be developed in future for the two categories. Following discussion as to what additional information could be included in the decision-guidance documents, the Committee noted the need to revert to the issue later during the session, in the light of the deliberations of the task groups. It was proposed, and the Committee agreed, that the title of the working paper be amended to read “Working paper on preparing internal proposals and decision-guidance documents for chemicals notified as banned or severely restricted in accordance with article 5”.

23. The Committee adopted the working paper, as amended, as guidance and agreed to develop it further, if necessary, in the light of future experience.

3. Preparing internal proposals and decision-guidance documents for severely hazardous pesticide formulations

24. The secretariat introduced the working paper on preparing internal proposals and decision-guidance documents for severely hazardous pesticide formulations (UNEP/FAO/RC/CRC.1/7). The Committee agreed that, as there was currently no severely hazardous pesticide formulation for it to consider, the wording of the working paper should be amended to delete reference to the interim PIC procedure and be brought forward when a proposal was submitted for the Committee’s consideration. In addition, the title of the working paper was amended to read “Working paper on preparing internal proposals and decision-guidance documents for severely hazardous pesticide formulations proposed in accordance with article 6”.

25. The Committee adopted the working paper, as amended, as guidance and agreed to develop it further in the light of future experience.

4. Determination of existing trade in chemicals

26. The secretariat introduced the note on working procedures for the determination of ongoing trade in chemicals (UNEP/FAO/RC/CRC.1/8). Information on trade was particularly difficult to gather and the procedure presented in the annex to that note had worked well for the Interim Chemical Review Committee. Accordingly, it was recommended for adoption by the Committee. In the ensuing discussion, questions were raised regarding illegal trade and about the procedures for industry and other bodies to provide information on trade. The Committee agreed that, if there was no trade in a chemical, work on it should be accorded low priority by the Committee, as evidence of ongoing trade was a criterion, but not a prerequisite, for inclusion in Annex III. Attention was drawn to the issue of reliability of information, given the legal obligations which inclusion in Annex III placed on Parties under the Convention.

27. The Committee agreed to adopt the process set out in the paper on working procedures for the determination of ongoing trade in chemicals and to forward it to the Conference of the Parties with the request that it encourage industry, non-governmental organizations and Parties to provide the requested information. The paper is contained in annex III to the present report.

5. Common and recognized patterns of use of severely hazardous pesticide formulations

28. The secretariat introduced the working paper on common and recognized patterns of use of severely hazardous pesticide formulations (UNEP/FAO/RC/CRC.1/9) and noted that it was based only on a single experience which the Interim Chemical Review Committee had had relating to the issue.

29. The Committee considered some patterns of use that might be construed as misuse, such as misreading of labels or use outside recommended zones or times of application. It was reiterated that the paper was guidance material and should be reviewed in the light of future experience. In that process, it was suggested that the notion of recognized patterns of use should be understood to mean common practice in a large proportion of the user community.

30. The Committee adopted the working paper as guidance and agreed to develop it further in the light of future experience.

B. Policy guidance

1. Preparation and use of focused summaries

31. The secretariat introduced the note on the preparation and use of focused summaries (UNEP/FAO/RC/CRC.1/10). It noted that such summaries might be prepared by notifying countries where the supporting documentation was voluminous, or submitted in a language other than English. It was also noted that preparation of focused summaries was voluntary. In the ensuing discussion, the Committee recommended that the guidance for the preparation of focused summaries should point out that the summaries were intended to supplement, and not to supplant, the supporting documentation. The Committee was encouraged to identify good examples of focused summaries, for future reference.

32. The Committee agreed to adopt the working paper on the preparation and use of focused summaries, as amended in the discussion, and to forward it to the Conference of the Parties with the request that it encourage Parties to prepare focused summaries in accordance with that guidance. The amended text of the working paper is contained in annex IV to the present report.

2. Bridging information

33. The secretariat introduced the note on bridging information (UNEP/FAO/RC/CRC.1/11) that would be used by the Committee in judging the acceptability of a notification where the notifying country had used a risk evaluation from another country or international body. The ensuing discussion turned on the scope of the information to be provided and whether bridging information was necessary for chemicals which had manifestly global effects in such cases as ozone-depleting substances. Attention was also drawn to the difficulties that might be faced by some countries in providing all the information listed.

34. The secretariat noted that, as currently set out, the procedure was to be applied on a case-by-case basis and that it was not an obligatory requirement. Under the Convention, Parties were obliged merely to make a notification that a chemical had been banned or restricted. The procedure outlined in the paper was guidance to the Committee on the sort of bridging information that would be helpful in determining

whether the risk evaluation in the notifying country reflected the prevailing conditions in that country in accordance with criterion (b) (iii) of Annex II.

35. The Committee adopted the working paper on bridging information, on the understanding that it would be applied on a case-by-case basis and that it would be developed further in the light of future experience.

3. Contaminants

36. The secretariat introduced the note on policy guidance on contaminants (UNEP/FAO/RC/CRC.1/12) noting that the Interim Chemical Review Committee had encountered substantial difficulties with the issue and that, by decision INC-7/4, the Intergovernmental Negotiating Committee had, at its seventh session, adopted a policy on contaminants.

37. The Committee took note of the policy on the understanding that further discussion on the issue would be deferred until such time as a notification relating to a contaminant was placed before the Committee.

4. Risk evaluation in the context of the Rotterdam Convention

38. The secretariat introduced the note on risk evaluation in the context of the Rotterdam Convention (UNEP/FAO/RC/CRC.1/13), pointing out that the paper reflected the working definitions on risk evaluation used by the Interim Chemical Review Committee. It was emphasized that the work had only begun at the fifth session of the Interim Chemical Review Committee and was a work in progress.

39. The Committee agreed to accept the policy guidance as a work in progress and to amend it as necessary in the light of further experience.

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

40. The secretariat outlined the procedure for the work of the task groups during the Committee's current session. The task groups were expected to review the notifications and available supporting documentation, confirm that they met the information requirements of Annex I and carry out an initial review against the criteria in Annex II. To assist them in conducting that review and to ensure consistency among the various task groups, the secretariat had prepared a template for the groups to use in reporting their findings back to the Committee. One of three outcomes could be expected from examination of a notification: that it met the criteria set out in Annex II to the Convention; that it did not meet the criteria; or that it only met some of the criteria. In each case, in reporting back to plenary, the chair of the task group would be expected to show how the criteria had been met, providing a brief rationale for a draft decision; to indicate where criteria had not been met and why; or to explain why the task group had been uncertain as to whether criteria had been met and to outline the areas of concern. The experts at the Committee had to be fully convinced of the conclusions which they had reached.

41. The following experts agreed to lead the task groups on individual chemicals: Mr. Berend for chrysotile asbestos, Ms. Choi for 2-naphthylamine and 4-aminobiphenyl, Mr. Hajjar for endosulfan and endrin, Ms. Hitzfeld for chlordecone, carbon tetrachloride and methyl bromide, Mr. Juergensen for benzidine and bis(chloromethyl)ether, Mr. Grisolia for methamidophos and phosphamidon and Mr. Halimi for methyl parathion and tributyl tin.

42. The secretariat noted that new notifications or, in some cases, additional information had been received for chemicals that had been previously reviewed by the Interim Chemical Review Committee. Giving due regard to that work and noting that it had no wish to revisit notifications previously examined, the Committee considered nonetheless that, time permitting and with the proviso that priority should be given to reviewing new notifications and information, it could re-examine those other notifications.

A. Chlordecone

43. Ms. Hitzfeld presented the work of the task group, comprising herself and Mr. Nichelatti as joint coordinators and Ms. Impithuksa and Mr. Mayne as members. The group had reviewed and analysed the new notifications on chlordecone received from Switzerland and Thailand and the supporting

documentation, contained in documents UNEP/FAO/RC/CRC.1/14 and 14/Add.2, and had confirmed that both notifications, relating regulatory actions that banned all uses of chlordecone as a pesticide, complied with the information requirements of Annex I to the Convention.

44. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, the notifications from Switzerland and Thailand had met all the criteria of Annex II with the exception of criterion (b) (iii).

45. Accordingly, the Committee concluded that chlordecone could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

B. Endosulfan

46. Mr. Hajjar presented the work of the task group, comprising himself as coordinator and Mr. Al Hasani, Ms. Bolaños, Ms. Chin Sue, Ms. Chouhy, Mr. Hietkamp, Mr. Khalifa, Mr. Mayne, Ms. Nudelman, Mr. Nyström, Mr. Pwamang, Mr. Sow and Ms. Soyombo as members. The group had reviewed and analysed the new notification on endosulfan received from Côte d'Ivoire and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/15 and 15/Adds.1–3, and had confirmed that the notification, relating regulatory actions that banned all uses of endosulfan as a pesticide, complied with the information requirements of Annex I to the Convention. The group had also noted that the notifications from Jordan, the Netherlands and Norway had previously been considered by the Interim Chemical Review Committee, which had concluded that the notification from the Netherlands had met all of the criteria of Annex II while those from Jordan and Norway had not.

47. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, the new notification from Côte d'Ivoire had met all the criteria of Annex II with the exception of criteria (b) (iii), (c) (i) and (c) (ii) but noted that supporting information had been referenced in the notification but had not been received by the Secretariat. The Committee also endorsed the conclusion of the Interim Chemical Review Committee that the notification from the Netherlands had met all the criteria of Annex II and that the notifications from Jordan and Norway had not met criterion (b) (iii).

48. The Committee agreed that only the notification from the Netherlands fulfilled all the criteria of Annex II of the Convention.

49. Accordingly, the Committee concluded that endosulfan could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

C. Endrin

50. Mr. Hajjar presented the work of the task group, comprising himself as coordinator and Mr. Al-Hasani, Mr. Attias, Ms. Choi, Mr. Halimi and Mr. Khalifa as members. The group had reviewed and analysed the four new notifications on endrin received from Japan, the Republic of Korea, Romania and Switzerland and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/16 and 16/Adds.1–5, and had confirmed that the notifications, relating regulatory actions that banned all uses of endrin, complied with the information requirements of Annex I to the Convention. The group had also noted that the notifications from Jordan and Peru had previously been considered by the Interim Chemical Review Committee, which had concluded that the notification from Peru met all the criteria of Annex II with the exception of criteria (b) (i), (b) (ii) and (b) (iii) while for Jordan criteria (b) (iii) had not been met.

51. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, the four new notifications had met the criteria of Annex II with the exception of criterion (c) (iv) and in the case of the Republic of Korea, Romania and Switzerland criterion (b) (iii).

52. The Committee further discussed whether the notification from Japan had met criterion (b) (iii), since it was not evident from the data provided whether or not they were based on a risk evaluation under prevailing conditions. As indicated in the supporting documentation, the risk evaluation was based on bioaccumulation and biodegradation factors, which some members considered valid as they demonstrated issues of global concern. It was also noted, however, that those data only referred to

screening studies in Japan that had been conducted under laboratory conditions rather than under the prevailing conditions and might therefore be considered hazard assessment rather than risk evaluation.

53. Based on the documentation available to the Committee, it was not able to confirm that the notification from Japan met criterion (b) (iii).

54. Accordingly, the Committee concluded that endrin could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

D. Methamidophos

55. Mr. Grisolia presented the work of the task group, comprising himself as coordinator and Ms. Bolaños, Ms. Impithuksa, Mr. Nichelatti and Ms. Nudelman as members. The group had reviewed and analysed the five new notifications on methamidophos received from Brazil, Côte d'Ivoire, El Salvador, Panama and Thailand and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/17 and 17/Adds. 3, 5 and 7, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted uses of certain formulations of methamidophos, complied with the information requirements of Annex I to the Convention. It had noted that soluble liquid formulations of methamidophos that exceeded 600 g/l were already in Annex III.

56. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, all the notifications had met the criteria of Annex II with the exception of criteria (b) (iii) for all notifications and (c) (i) and (c) (ii) for Brazil, El Salvador and Panama and (b) (i) and (b) (ii) for Côte d'Ivoire. The Committee agreed that lack of data from Côte d'Ivoire had hindered determination of whether or not the notification met the criteria of Annex II. The task group had also questioned whether some of the notifications met the definition of a severely restricted chemical under the Convention.

57. Accordingly, the Committee concluded that methamidophos could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

E. Methyl bromide

58. Ms. Hitzfeld presented the work of the task group, comprising herself and Mr. Nichelatti as joint coordinators and Mr. Berend, Ms. Bolaños, Ms. Chin Sue, Ms Choi, Mr. Juergensen, Mr. Mayne, Mr. Mashimba and Mr. Pwamang as members. The group had reviewed and analysed the three new notifications on methyl bromide received from the Netherlands, the Republic of Korea and Switzerland and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/18 and 18/Adds.1–4, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted uses of methyl bromide, complied with the information requirements of Annex I to the Convention.

59. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, all three of the notifications had met the criteria of Annex II with the exception of criterion (b) (iii) for the Republic of Korea and Switzerland.

60. In the case of the data from Switzerland, the final regulatory action was based on data related to assessments carried out under the Montreal Protocol. Some experts were concerned about the use of such data as they did not necessarily take into account prevailing conditions within the Party taking the action (criterion (b) (iii)). Others considered that the effect of ozone depleting substances were of global concern and did not require individual national assessments.

61. The Committee agreed that only the notification from the Netherlands fulfilled all the criteria of Annex II of the Convention.

62. Accordingly, the Committee concluded that methyl bromide could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

F. Methyl parathion

63. Mr. Halimi presented the work of the task group, comprising himself as coordinator and Ms. Chouhy, Mr. Grisolia, Mr. Kamatari, Mr. Mayne, Ms. Nudelman and Ms. Soyombo as members. The group had reviewed and analysed the seven new notifications on methyl parathion received from Brazil, Côte d'Ivoire, El Salvador, the European Community, the Gambia, Japan and Panama and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/19 and 19/Adds.1, 3, 4, 5, 7 and 9, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted uses of methyl parathion, complied with the information requirements of Annex I to the Convention.

64. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, all seven of the notifications had met the criteria of Annex II with the exception of criterion (b) (iii) for Brazil, Gambia and Japan, criteria (b) (iii), (c) (i) and (c) (ii) for El Salvador and Panama and criteria (b) (i), (b) (ii), (b) (iii), (c) (i) and (c) (ii) for Côte d'Ivoire.

65. The Committee agreed that lack of data from Côte d'Ivoire, El Salvador and Panama had hindered determination of whether or not the notification met the criteria of Annex II.

66. The Committee agreed that only the notification from the European Community fulfilled all the criteria of Annex II of the Convention.

67. Accordingly, the Committee concluded that methyl parathion could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

G. Phosphamidon

68. Mr. Grisolia presented the work of the task group, comprising himself as coordinator and Mr. Attias, Ms. Bolaños, Ms. Impithuksa, Mr. Nichelatti and Ms. Nudelman as members. The group had reviewed and analysed the five notifications on phosphamidon received from Brazil, Côte d'Ivoire, Japan, Panama, and Thailand and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/20 and 20/Adds.1, 3 and 6, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted uses of phosphamidon, complied with the information requirements of Annex I to the Convention.

69. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, all the notifications had met the criteria of Annex II with the exception of criteria (b) (i), (b) (ii) and (b) (iii) for Côte d'Ivoire and Japan and criteria (b) (ii) and (b) (iii) for Brazil, Panama and Thailand. The Committee agreed that lack of data from Côte d'Ivoire had hindered determination of whether or not the notification met the criteria of Annex II.

70. Accordingly, the Committee concluded that phosphamidon could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

H. 2-naphthylamine

71. Ms. Choi presented the work of the task group, comprising herself as coordinator and Mr. Berend as member. The group had reviewed and analysed the three new notifications on 2-naphthylamine received from Japan, Latvia and the Republic of Korea and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/21 and 21/Adds.1–4, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the uses of 2-naphthylamine as an industrial chemical, complied with the information requirements of Annex I to the Convention.

72. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, all three of the notifications had met all the criteria of Annex II with the exception of criterion (b) (iii).

73. Accordingly, the Committee concluded that 2-naphythylamine could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

I. 4-aminobiphenyl

74. Ms. Choi presented the work of the task group, comprising herself as coordinator and Mr. Berend as member. The group had reviewed and analysed the three new notifications on 4-aminobiphenyl received from Japan, Latvia and the Republic of Korea and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/22 and 22/Adds.1–4, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the uses of 4-aminobiphenyl as an industrial chemical, complied with the information requirements of Annex I to the Convention.

75. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, all three of the notifications had met all the criteria of Annex II with the exception of criterion (b) (iii).

76. Accordingly, the Committee concluded that 4-aminobiphenyl could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

J. Benzidine

77. Mr. Juergensen presented the work of the task group, comprising himself as coordinator and Mr. Attias, Ms. Bolaños, Ms. Choi, Mr. Djumaev, Mr. Mashimba, Mr. Pwamang and Mr. Sow as members. The group had reviewed and analysed the six new notifications on benzidine received from Canada, India, Japan, Jordan, Latvia and the Republic of Korea and the supporting documentation, as contained in documents UNEP/FAO/RC/CRC.1/23 and 23/Adds.1, 2, 5, 6 and 7, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the uses of benzidine, complied with the information requirements of Annex I to the Convention.

78. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, all the notifications had met the criteria of Annex II with the exception of (b) (i), (b) (ii) and (b) (iii) for India, Jordan and Latvia, and (b) (iii) for Japan and the Republic of Korea.

79. The Committee raised the issue of how to deal with notifications that covered not only a single substance but also, for example, the salts and esters of the substance. Clarification was provided on how such notifications, such as that for DNOC, had previously been handled and it was noted that it was up to the notifying Party to provide full clarification on the substances being notified. A similar situation was noted for benzidine. The Chair recalled that, while this issue was crucial when the time came to develop a decision-guidance document, it would not be of consequence during the initial phase of determining whether the criteria of Annex I and II were met. Similarly, when developing a decision-guidance document, it was important to differentiate when a substance was being notified as a pesticide or as an industrial chemical.

80. The Committee agreed that only the notification from Canada fulfilled all the criteria of Annex II of the Convention.

81. Accordingly, the Committee concluded that benzidine could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

K. Bis(chloromethyl)ether

82. Mr. Juergensen presented the work of the task group, comprising himself as coordinator and Mr. Attias, Ms. Choi, Mr. Djumaev and Mr. Mashimba as members. The group had reviewed and analysed the three new notifications on bis(chloromethyl)ether received from Canada, Japan, and the Republic of Korea and the supporting documentation, as contained in documents UNEP/FAO/RC/CRC.1/24 and 24/Adds.1–4, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the uses of bis(chloromethyl)ether, complied with the information requirements of Annex I to the Convention.

83. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, all three of the notifications had met the criteria of Annex II with the exception of criterion (b) (iii) for Japan and the Republic of Korea. The Committee could not conclude that there was any evidence of ongoing international trade.

84. The Committee agreed that only the notification from Canada fulfilled all the criteria of Annex II of the Convention

85. Accordingly, the Committee concluded that bis(chloromethyl)ether could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

L. Carbon tetrachloride

86. Ms. Hitzfeld presented the work of the task group, comprising herself as coordinator and Mr. Attias, Ms. Bolaños, Ms. Choi, Mr. Djumaev, Mr. Hietkamp, Ms. Impithuksa, Mr. Juergensen, Mr. Mashimba, Mr. Nichelatti, Mr. Pwamang, Mr. Sow and Ms. Soyombo as members. The group had reviewed and analysed the five new notifications on carbon tetrachloride received from Canada, Latvia, the Republic of Korea, Switzerland and Thailand and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/25 and 25/Adds.1, 2, 3, 5 and 6, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the use of carbon tetrachloride, complied with the information requirements of Annex I to the Convention.

87. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. As carbon tetrachloride had been notified both as a pesticide and an industrial chemical the results were separated into two categories. For carbon tetrachloride as a pesticide, notifications had been received from Canada, Switzerland and Thailand. The task group had determined that all the notifications had met the criteria of Annex II with the exception of criteria (b) (iii) for Switzerland and Thailand and (b) (i), (b) (ii) and (b) (iii) for Canada. For carbon tetrachloride as an industrial chemical, notifications had been received from Canada, Latvia, the Republic of Korea and Switzerland. The task group had determined that all the notifications had met the criteria with the exception of criteria (b) (i), (ii) and (iii) for Latvia, and criterion (b) (iii) for Switzerland and the Republic of Korea.

88. The Committee agreed that only the notification from Canada in the category industrial chemical fulfilled all the criteria of Annex II of the Convention.

89. Accordingly, the Committee concluded that carbon tetrachloride could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

M. Chrysotile asbestos

90. Mr. Berend presented the work of the task group, comprising himself as coordinator and Mr. Attias, Ms. Choi, Ms. Chouhy, Mr. Djumaev, Mr. Hietkamp, Ms. Hitzfeld, Mr. Juergensen, Mr. Kundiev, Mr. Mashimba, Mr. Mayne, Mr. Nyström, Mr. Sow and Ms. Soyombo as members. The group had reviewed and analysed the three new notifications on chrysotile asbestos received from Australia, Latvia and Switzerland and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/26 and 26/Adds.1, 4, 5 and 6, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the uses of chrysotile asbestos, complied with the information requirements of Annex I to the Convention. It also noted that the Interim Chemical Review Committee had already reviewed and analysed notifications from Chile and the European Community, as detailed in documents UNEP/FAO/RC/CRC.1/26 and 26/Adds.2 and 3, and had found those notifications to meet the criteria of Annex I and Annex II.

91. Taking into consideration the work of the task group, the Committee reviewed the criteria for listing banned or severely restricted chemicals as set out in Annex II. It agreed that, on the basis of the information currently available, all the new notification met the criteria of Annex II, with the exception of criterion (b) (iii) for Latvia and Switzerland. The Committee also endorsed the conclusion of the Interim Chemical Review Committee that the two previous notifications from Chile and the European Community had met all the criteria for inclusion in Annex II.

92. The Committee agreed that the notifications from Australia, Chile and the European Community fulfilled all the criteria of Annex II of the Convention and that, in line with paragraph 11 of decision RC-1/13, on transitional arrangements, when the notifications included one from a participating State, a review by the Committee could be initiated and, if appropriate, a decision-guidance document developed.

93. In reaching its decision, the Committee noted that, in line with its terms of reference, it would undertake a review of the notifications brought before it and would not undertake a comprehensive scientific evaluation of substances with information from all relevant sources including other Parties.

The Committee further noted that a decision-guidance document served the purpose of assisting Governments in making an informed decision on that chemical.

94. Accordingly, the Committee decided to recommend to the Conference of the Parties that chrysotile asbestos be listed in Annex III.

95. Following that decision, the Committee took note of the concerns expressed by two experts that the Committee had reached its decision on chrysotile asbestos without the benefit of the further assessment of alternatives to chrysotile asbestos fibres due to be undertaken by the World Health Organization (WHO) in September 2005. The Committee agreed that, should the findings of that study be available to the Committee at its second meeting, they would be taken into account in finalizing the decision-guidance document for chrysotile asbestos.

96. One expert noted that one of the challenges in the risk evaluation of chrysotile asbestos in the context of prevailing conditions was that most of the country experiences and scientific evidence were based on mixed fibres, i.e., amphiboles and chrysotile. The expert further noted that the issue of mixed fibres or mixtures of hazardous substances should be seen in the broader context of other chemicals and could also pose a challenge for metallic mixtures such as alloys. In the context of alloys, if regulatory action was taken against a particular metal, the question arose as to whether the action would also apply to its alloys, given that alloys were not considered compounds. It was noted that the issue would probably require substantial debate in the future.

97. In addition, one expert and one observer expressed their discomfort with the provisions of article 5, paragraph 6, particularly that the recommendation to the Conference of the Parties on inclusion of a chemical in Annex III followed a consideration of the submitted notifications in accordance with the criteria of Annex II, as that provision limited consideration of information to that provided by the notifying Parties. Furthermore, concerns were also expressed by some experts that the decision-guidance document might not contain all of the information that they thought might otherwise be available to assist a designated national authority in making an informed decision.

98. A drafting group was established to prepare a decision-guidance document for chrysotile asbestos, with Mr. Mayne and Mr. Berend as lead experts, the membership of which is set out in section C of annex I to the present report.

99. Subsequently, the chair of the drafting group on chrysotile asbestos introduced the decision on the chemical, the rationale for that decision and the timetable for preparing the decision-guidance document. He noted that the rationale followed the model agreed to by the Committee at the current meeting. He reiterated that the draft decision-guidance document would be circulated very widely on the date currently set, namely, 17 July 2005, so as to ensure maximum transparency at which time all Committee members and observers who wished had the opportunity to comment on the draft.

100. During the ensuing discussion, one expert reiterated his concern that the results of the planned WHO workshop on substitutes to chrysotile asbestos should be taken into consideration when finalizing the draft decision-guidance document. The Committee agreed that the drafting group would take into account the result of that review should it be available to the Committee at its next meeting.

101. With regard to the rationale, the Committee agreed to note in the text that the three notifications from Australia, Chile and the European Community took into account, among other references, the information available in the WHO/IPCS Environmental Health Criteria No. 203 (IPCS 1998).

102. The Committee adopted the rationale, the decision and the timetable of work for chrysotile asbestos, as amended, for submission to the Conference of the Parties at its second meeting. The rationale, decision and timetable are contained in annex I to the present report.

N. Tributyl tin compounds

103. Mr. Halimi presented the work of the task group, comprising himself as coordinator and Ms. Chouhy, Mr. Hietkamp, Mr. Kamatari, Mr. Mayne, Ms. Nudelman and Ms. Soyombo as members. The group had reviewed and analysed the two new notifications on tributyl tin received from Japan and the Republic of Korea and the supporting documentation, contained in documents UNEP/FAO/RC/CRC.1/27 and 27/Adds.1–4, and had confirmed that the notifications, relating regulatory actions that banned or severely restricted the use of tributyl tin, complied with the information requirements of Annex I to the Convention. The group had also noted that the notifications from the European Community had previously been considered by the Interim Chemical Review Committee, which had concluded that the notification had met all the criteria of Annex II.

104. Taking into consideration the work of the task group, the Committee reviewed the criteria as set out in Annex II to the Convention. It agreed that, on the basis of the information currently available, the notifications had met the criteria of Annex II with the exception of criterion (b) (iii) for Japan and the Republic of Korea.

105. The Committee noted that the three notifications covered different tributyl tin compounds, of which only tributyl tin oxide was common to all three. The Committee confirmed that only chemicals common to at least two notifications meeting the criteria of Annex II could be recommended for inclusion in Annex III.

106. The Committee agreed that only the previous notification from the European Community fulfilled all the criteria of Annex II of the Convention.

107. Accordingly, the Committee concluded that tributyl tin could not be proposed for inclusion in Annex III of the Rotterdam Convention at the current time.

VIII. Other matters

A. Guidance to the Committee

1. Risk evaluation

108. The Committee noted that many of the new notifications on candidate chemicals did not meet the criteria of Annex II, in particular criterion (b) (iii) concerning regulatory action taken on the basis of a risk evaluation involving prevailing conditions in the notifying Party. Notifications frequently included a hazard assessment, but information on actual or expected exposure under prevailing conditions was lacking. Accordingly, the Committee agreed that there was a need for further guidance to countries on how to document or explain the exposure component of the risk evaluation.

109. A task group was established to identify what sort of information should be included in the exposure evaluation. In that work, the group drew on the guidance already developed in the secretariat's paper on risk evaluation, UNEP/FAO/RC/CRC.1/13, as well as the policy guidance on bridging information contained in document UNEP/FAO/RC/CRC.1/11. A paper was prepared and would be further developed intersessionally for submission to the Committee at its next session.

110. It was also noted that, in the case of preventive bans including those taken on the basis of the intrinsic toxicity of a chemical (e.g., non-threshold carcinogens), an exposure evaluation would necessarily include a consideration of expected or anticipated exposure; it was not clear, however, that countries had a good understanding of how such exposure evaluations might be undertaken or reported.

111. A task group was established to examine how to determine whether criteria (b) (i), on whether data had been generated according to scientifically recognized methods, and (b) (ii), on whether data reviews had been performed and documented according to generally recognized scientific principles and procedures, had been met. The task group was requested to draft guidance aimed at eliminating ambiguity and improving consistency in referring to those criteria in the analysis of the notifications as concerns had been raised on the sources of information provided in the notification. Those data were usually noted in sections 1.8, 2.3 and 2.4 of a notification. The task group identified four principles that were further refined in discussions in plenary:

(a) When there were no data at all, the determination would be that the criteria had not been met;

(b) When there were data but they were not referenced, the determination would be that the criteria had not been met;

(c) When there were data provided and referenced in the notification or in supporting documentation, the determination would be that the criteria could be met, subject to the data provided and referenced being deemed to be acceptable;

(d) When the reference was noted but no data were actually provided, the determination would be that the criteria could be met, subject to the reference being deemed to be acceptable.

112. The task group noted that internationally recognized sources included the Organization for Economic Cooperation and Development (OECD), WHO, the International Agency for Research on Cancer (IARC) and UNEP, as well as data from decision-guidance documents. Information from regional or national sources – in particular exposure information – would be examined on a case-by-case

basis. The task group suggested that the secretariat ensure the availability of English translations of submissions if it was not clear that the review had been conducted in accordance with internationally recognized practices. The Committee recognized that the determination of cases where criteria (b) (i) and (b) (ii) of Annex II had been met, as set out above, was designed solely to serve as guidance to the Committee and could be modified in the light of experience gained.

113. The Committee agreed that the chair of the task group, working in consultation with the secretariat, would refine the results of the deliberations in the task group, for submission to the Committee at its next session.

2. Templates and associated guidance for the intersessional task groups on candidate chemicals

114. To assist the Committee with its intersessional work on candidate chemicals, the Committee decided to set up a task group to consider the template that the secretariat had developed for the intersessional task groups to use in reporting their findings back to the Committee and to modify and develop them where necessary.

115. Reporting back to plenary on the outcome of the group's work, the group's co-chairs and rapporteur reviewed the group's discussions and presented the template, as modified and further developed by the group, and the associated guidance. They explained that guidance had not been prepared for the analysis of compliance by notifications with the requirements of Annex I of the Rotterdam Convention as that matter was considered relatively straightforward.

116. The Committee noted that the paper presented by the task group was a working document and should be used on a case-by-case basis. It was emphasized that the templates and guidance would be improved over time and modified, as necessary, based on experience gained from using the document. The Committee flagged the possibility that some experts might have difficulty using the Excel programme on which the templates had been prepared.

117. The Committee agreed to use the templates and guidance as a trial and to raise any concerns on its use with the Committee at its second meeting.

B. Operational issues

1. Rationales relating to individual notifications that were deemed to meet the criteria of Annex II

118. The Committee agreed that, where a notification met the criteria of Annex II, but was not supported at that time by a second notification, a rationale should be developed which described how the information supplied in the notification and supporting documentation met those criteria. The rationale was not intended to duplicate the rationale prepared by a drafting group in support of a recommendation to list a chemical in Annex III.

119. The Committee adopted a template for such rationales and proceeded to develop rationales for its findings on the five chemicals – benzidine, bis(chloromethyl)ether, carbon tetrachloride, methyl bromide and methyl parathion – where one or more notifications had been found to meet all the criteria of Annex II. The rationales, as amended by the Committee, are contained in annex V to the present report and the template in Annex VI.

2. Notifications that were deemed not to meet the criteria of Annex II

120. The Committee agreed that those notifications found not to meet all the criteria of Annex II would not be brought back to the Committee unless new or additional information was provided by the notifying Party.

121. In the light of concerns expressed by experts that, at least at the Committee's current session, no notifications from developing countries had been found to meet all the criteria of Annex II, there was discussion of how the procedure could be improved to enable more notifications from developing countries to be accepted. In particular, it was suggested that notifying countries could be informed whether their entire notification should be resubmitted, or if it was sufficient just to provide supplementary information and told precisely what supplementary information was needed. It was pointed out that the findings of the Committee's first session, which would be made available to all Parties, would give guidance to Parties that had submitted unsuccessful notifications. The conference papers from that session would provide a useful resource to the secretariat in its future liaison with those Parties. In addition, the secretariat could assist experts in giving guidance to other countries in their

regions – notably those not represented on the Committee – and in sharing with them the benefits of their work on the Committee.

3. Measures to promote the efficiency of intersessional work: prioritization and deadlines

122. In order to improve the efficiency of the operation of the Committee at future meetings it was proposed that the secretariat, working with the bureau, should undertake a preliminary review of notifications of final regulatory action submitted in accordance with article 5. For those notifications where it appeared that the requirements of the Convention had been met, intersessional task groups would be created prior to the session of the Committee, in line with the agreed process for drafting decision-guidance documents. Where it appeared that the notification would not meet the requirements of the Convention, intersessional task groups would not be formed. The notifications and available supporting documentation for all candidate chemicals would be available to the Committee. The goal would be to help ensure that those notifications that were the subject of preliminary work in task groups were those where it appeared that sufficient information was available to determine that the criteria of Annex II had been met.

123. To allay possible concerns about the screening process, the secretariat assured experts that the screening of notifications would be carried out in consultation with the bureau.

124. The Committee agreed to entrust the secretariat with the preparation of a paper, for consideration by the Committee at its next session, setting out a possible procedure for dealing with notifications. When considering that paper, the Committee would also be able to take into account the experience gained by the secretariat, working with the bureau, during the intersessional period.

125. In addition, the Committee recommended that the secretariat should establish deadlines for the submission of information sufficiently well ahead of meetings to enable the information to receive due consideration, with the understanding that information submitted after the deadline would not be considered.

C. Issues for consideration by the Conference of the Parties

126. In the course of the deliberations at the first session, the following issues were raised which the Committee agreed should be brought to the attention of the Conference of the Parties:

(a) Difference between risk evaluation requirements conducted under different international bodies: the Committee observed that, at its first meeting, it had considered notifications concerning regulatory actions on methyl bromide and on carbon tetrachloride, some of which were based on decisions or assessments under the Montreal Protocol. The Committee had also considered notifications regarding actions in respect of endrin, a substance subject to the Stockholm Convention. The Committee decided to seek guidance from the Conference of the Parties on whether, in the context of criterion (b) (iii) of Annex II to the Rotterdam Convention, hazard or risk evaluations made under global multilateral environmental agreements such as the Montreal Protocol and the Stockholm Convention could be used by notifying Parties without the need to carry out additional national evaluations reflecting prevailing conditions in the notifying Party. The Committee also decided to ask the secretariat to seek clarifications from the secretariats of other multilateral environmental agreements regarding those agreements, in particular in respect of scientific principles and procedures for hazard or risk evaluations and whether and to what extent provisions relating to trade might overlap;

(b) Possible confusion between trade names and brand names: while noting that the processes adopted by the Committee were practical and appropriate, one observer noted the need to clarify the distinction between trade names and brand names (or trademarks) when preparing decision-guidance documents. He was encouraged to raise the issue at the next session of the Conference of the Parties;

(c) Guidance on the term “severely restricted”: for some of the notifications of final regulatory actions, the task groups voiced doubts as to whether the definition of “severely restricted chemical” had been met, as insufficient information had been provided to assess clearly the real or expected reduction in use of the chemicals as consequence of the regulatory action. One expert noted that the Committee’s terms of reference, as contained in document UNEP/FAO/RC/CRC.1/3, did not contain a mandate to examine whether this definition was fulfilled, as it was not one of the criteria explicitly contained in Annex II of the Convention. The Committee recommended that the Conference of the Parties might wish to consider encouraging Parties, when submitting notifications, to describe clearly the effects, real or expected, of the regulatory action with regard to the use of the chemical in order to facilitate the task of the Committee in assessing whether criterion (c) (i) of Annex II of the Convention had been met;

(d) Additional information: in reviewing individual chemicals, there was interest in including information from a broad range of sources, including on the continued safe use of a banned or severely restricted chemical. The Chair stated that the mandate of the Committee constrained it to examining the information that had been submitted by the notifying Parties in accordance with article 5. It was also recalled that the Committee was confined to considering information that had been available at the time the final regulatory action was taken and which informed that action: information gathered subsequent to that action could not be considered by the Committee for the purposes of meeting the Annex I and Annex II requirements. Some experts felt that the scope of the decision-guidance document should not be limited to the information provided by the notifying Parties, but should be expanded to include other relevant information. In addition, one expert expressed his concern that there should be a process to update and refine decision-guidance documents, particularly in the light of new notifications for a chemical already in Annex III.

D. Hosting of regional workshops

127. The Committee noted with appreciation the proposal from the expert from Argentina to hold a workshop in the Latin American region, with the assistance of the secretariat, to inform countries of the region of the outcome of the work of the Committee. Regional discussions would be held as to the timing and venue of the workshop and the Committee noted the offer from the expert from Brazil to host the workshop in Brasilia.

E. Dates of the Committee's next meeting

128. The Committee agreed to hold its next meeting early in 2006, the precise dates of the meeting to be determined subsequently.

IX. Adoption of the report

129. The Committee adopted its report on the basis of the draft report contained in document UNEP/FAO/RC/CRC.1/L.1, which had been circulated during the meeting, as amended, and on the understanding that finalization of the report would be entrusted to the Rapporteur, working in consultation with the secretariat.

130. Following the adoption of the report, Mr. Mayne informed the Committee that professional commitments precluded his continuing in the chair of the Committee and that he was therefore obliged, with regret, to tender his resignation. The group of Western European and other countries nominated Ms. Hitzfeld to serve as the member of the bureau for the group. The Committee agreed that Ms. Hitzfeld would serve as Chair of the Committee until the end of its next session. It was further agreed that thereafter the Committee might wish to appoint a Chair from a developing country.

X. Closure of the meeting

131. Following the customary exchange of courtesies, the session was declared closed at 11.30 a.m. on Friday, 18 February 2005.

Annex I

Rationale, decision and work plan for chrysotile asbestos

A. Rationale for the recommendation that chrysotile asbestos (CAS No. 12001-29-5) should become subject to the prior informed consent procedure and to establish an intersessional drafting group to prepare a draft decision-guidance document

1. In reviewing the notifications of final regulatory action by the European Community to ban chrysotile asbestos and the notifications by Australia and Chile to severely restrict chrysotile asbestos, together with the supporting documentary information provided by those Parties, the Chemical Review Committee was able to confirm that the regulatory actions had been taken in order to protect human health. The European Community action was based on a risk evaluation made by an independent scientific committee. Its conclusions were that chrysotile asbestos was carcinogenic to humans and that there was no threshold of exposure below which asbestos did not pose carcinogenic risks. The Chilean regulatory action was taken on the basis of a review of the health effects of chrysotile asbestos, the evaluation of occupational exposure and the fact that there were no thresholds for the carcinogenic effect of chrysotile asbestos. The basis of the Australian regulatory action was human health risk assessments, taken at national and state level that focused on the occupational, public health and environmental risks associated with current uses and applications in Australia. It was noted by Australia that chrysotile asbestos was classified as a known carcinogen and human exposure was associated with an excessive risk of asbestosis, lung cancer and mesothelioma. Among other references, the notifications from Australia, Chile and the European Community referred to Environmental Health Criterion No. 203 (IPCS 1998).

2. The Committee established that the final regulatory actions had been taken on the basis of risk evaluations and that those evaluations had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory actions had been based on chemical-specific risk evaluations taking into account the conditions of exposure within the European Community, Chile and Australia.

3. The Committee concluded that the final regulatory actions provided a sufficiently broad basis to merit including chrysotile asbestos in Annex III of the Rotterdam Convention in the industrial chemical category. It noted that those actions by Australia, Chile and the European Community would lead to a significant decrease in the quantities and uses of chrysotile asbestos and the risks for human health in each notifying Party were expected to be significantly reduced.

4. There was no indication that there were any pesticidal uses for chrysotile asbestos. The Committee also took into account that the considerations underlying the final regulatory actions were not of limited applicability but of broader relevance since the effects on human health arising from exposure to chrysotile would be relevant in any country where it was used. On the basis of information provided to the members of the Chemical Review Committee and other relevant information, the Committee concluded that there was ongoing international trade in chrysotile asbestos.

5. The Committee noted that the final regulatory actions were not based on concerns about intentional misuse of chrysotile asbestos.

6. The Committee at its first meeting concluded that the notifications of final regulatory actions by Australia, Chile and the European Community met the information requirements of Annex I and the criteria set out in Annex II to the Convention. It was recommended that chrysotile asbestos be included in Annex III of the Rotterdam Convention as an industrial chemical.

B. Recommendation to the Conference of the Parties on the inclusion of chrysotile asbestos in Annex III of the Rotterdam Convention

The Chemical Review Committee,

Recalling article 5 of the Convention,

Concluding that the notifications of final regulatory actions by Australia, Chile and the European Community meet the criteria set forth in Annex II to the Convention,

Noting that the World Health Organization/International Programme for Chemical Safety will carry out a further assessment of substitutes to chrysotile asbestos in September 2005, which may be of relevance in the drafting of the decision-guidance document,

Decides, in accordance with paragraph 6 of article 5 of the Convention, to recommend to the Conference of the Parties that it should include chrysotile asbestos in Annex III of the Rotterdam Convention.

C. Work plan for the intersessional drafting group on chrysotile asbestos

The drafting group is composed of the following members:

Chair: Mr. Berend (Netherlands)

Co-chair: Mr. Mayne (Australia)

Members: Mr. Al-Hasani (Oman), Ms. Bolaños (Ecuador), Ms. Chin Sue (Jamaica), Ms. Choi (Republic of Korea), Mr. Djumaev (Kyrgyzstan), Mr. Grisolia (Brazil), Mr. Hajjar (Syrian Arab Republic), Ms. Impithuksa (Thailand), Mr. Juergensen (Canada), Mr. Kundiev (Ukraine), Mr. Mashimba (United Republic of Tanzania), Ms. Nudelman (Argentina) and Mr. Pwamang (Ghana).

The group agreed to the following work plan:

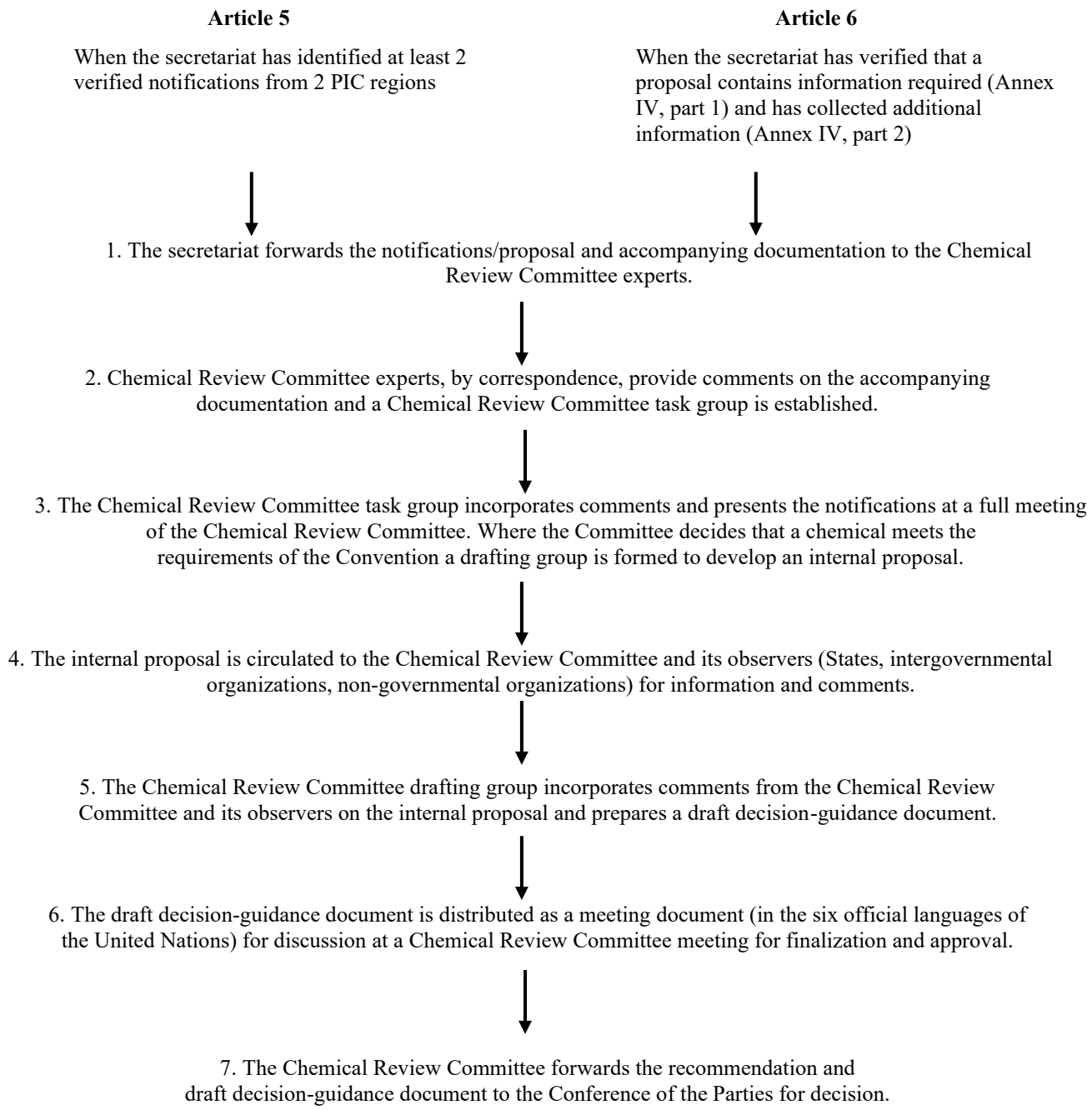
Task	Responsible persons	Deadline
Draft an “internal proposal” on chrysotile asbestos based on the information available to CRC-1.	Chair Co-chair	15 April 2005
Send draft “internal proposal” to group members for comments via e-mail.	Chair Co-chair	15 April 2005
Replies	All DG members	16 May 2005
Update “internal proposal” based on the comments from group members.	Chair Co-chair	17 June 2005
Circulate updated internal proposal to drafting group members for further consideration	Chair	17 June 2005
Replies	All DG members	1 July 2005
Send updated “internal proposal” to CRC and its observers , including all Parties, participating states, NGOs and IGOs for comments via e-mail	Chair Co-chair	17 July 2005
Replies	All CRC members and observers	15 August 2005
Draft a DGD based on the comments from CRC and its observers	Chair Co-chair	15 September 2005
Send the draft DGD and tabular summary of comments to group members for comments via e-mail	Chair Co-chair	15 September 2005
Replies	All DG members	7 October 2005
Finalize draft DGD and tabular summary of comments based on the comments of the group	Chair Co-chair	14 October 2005
Send the draft DGD and tabular summary of comments to secretariat	Chair Co-chair	14 October 2005
CRC meeting		February 2006

Annex II

Process for drafting decision-guidance documents and accompanying explanatory notes

A. Process for drafting decision-guidance documents

Flow chart



B. Explanatory notes to the process for drafting decision-guidance documents

1. Decision-guidance documents for chemicals notified as banned or severely restricted in accordance with Article 5

The secretariat forwards to members of the Chemical Review Committee the notifications determined to meet the information requirements of Annex I, and relevant supporting documentation provided by the notifying Parties (as per Annex I and Annex II).

The Chemical Review Committee must deem a notification and relevant supporting documentation to meet the requirements of the Convention prior to developing a decision-guidance document.

(1)* Where the information in the notification was deemed sufficient, the secretariat would forward the notifications and accompanying documentation to the experts of the Chemical Review Committee (2) for an initial round of comment. A Chemical Review Committee task group would be established.

(3) The task group would incorporate comments provided by experts, as appropriate, indicating those comments taken up and those which were not and why.

The task group would present the notifications and the accompanying documentation to the Chemical Review Committee along with the tabular summary of comments. The Chemical Review Committee will decide whether to make a recommendation to include the chemical in Annex III of the Convention. Where the decision is to recommend inclusion of a chemical a drafting group will be established. The drafting group prepares an internal proposal and circulates it within the drafting group for comments. A revised internal proposal is prepared.

(4) The internal proposal is then circulated to the Chemical Review Committee and its observers for information and comments. Any comments would be directed to the secretariat, which would prepare a tabular summary for the review by the drafting group.

(5) The drafting group would incorporate comments from the Chemical Review Committee and its observers on the internal proposal and prepare a draft decision-guidance document.

(6) This draft decision-guidance document (and the tabular summary of comments) is distributed as a meeting document for discussion at a Chemical Review Committee meeting (in six languages) for finalization and approval.

(7) The Chemical Review Committee forwards the recommendation and draft decision-guidance document to the Conference of the Parties for decision. The final documentation forwarded by the secretariat to all Parties and observers in advance of the Conference of the Parties session would include the draft decision-guidance document, the Chemical Review Committee recommendation for inclusion in Annex III, a summary of the Chemical Review Committee deliberations including a rationale based on the criteria listed in Annex II as well as the tabular summary of comments received under step 4 and how they were addressed.

Regional coordination by members of the Chemical Review Committee in preparing and providing comments is encouraged.

2. Decision-guidance documents for severely hazardous pesticide formulations proposed in accordance with Article 6

The secretariat will forward to members of the Chemical Review Committee the proposal and accompanying documentation, based on the information contained in the proposal and the additional information collected by the secretariat in accordance with Annex IV, part 2.

The Chemical Review Committee must deem the proposal to meet the requirements of the Convention prior to developing a decision-guidance document.

* Numbers refer to steps in the flow chart.

(1)* Where the information in the proposal was deemed sufficient, the secretariat would collect the information in part 2 of Annex IV from designated national authorities and non-governmental organizations and forward the proposal and accompanying documentation to the experts of the Chemical Review Committee (2) for an initial round of comment. A Chemical Review Committee task group would be established.

(3) The task group would incorporate comments, as appropriate, indicating those comments taken up and those which were not and why.

The task group would present the proposal and the accompanying documentation to the Chemical Review Committee along with the tabular summary of comments. The Chemical Review Committee will decide whether to make a recommendation to include the pesticide formulation in Annex III of the Convention. Where the decision is to recommend inclusion of the formulation a drafting group will be established. The drafting group prepares an internal proposal and circulates it within the group for comment. A revised internal proposal is prepared.

(4) The internal proposal is then circulated to the Chemical Review Committee and its observers for information and comments. Any comments would be directed to the secretariat, which would prepare a tabular summary for the review by the drafting group.

(5) The drafting group would incorporate comments from the Chemical Review Committee and its observers on the internal proposal and prepare a draft decision-guidance document.

(6) This draft decision-guidance document (and the tabular summary of comments) is distributed as a meeting document for discussion at a Chemical Review Committee meeting (in six languages) for finalization and approval.

(7) The Chemical Review Committee forwards the recommendation and draft decision-guidance document to the Conference of the Parties for decision. The final documentation forwarded by the secretariat to all Parties and observers in advance of the Conference of the Parties session would include the draft decision-guidance document, the Chemical Review Committee recommendation for inclusion in Annex III, a summary of the Chemical Review Committee deliberations including a rationale based on the criteria listed in Annex IV, as well as the tabular summary of comments received under step 4 and how they were addressed.

Regional coordination by members of the Chemical Review Committee in preparing and providing comments is encouraged.

* Numbers refer to steps in the flow chart.

Annex III

Process for determining evidence of ongoing trade

1. The process for determining whether or not there is ongoing international trade in a chemical must be as simple and pragmatic as possible, in order that it does not needlessly complicate the process for the development of decision-guidance documents.

2. The simplest solution would be to have trade (import/export) information provided by countries as part of their submitted notifications of regulatory action. Where no information on imports or exports is provided by the notifying countries specific follow-up with industry associations and designated national authorities in other countries will be needed.

3. When the secretariat has received at least one notification from each of two PIC regions, the collection of information on evidence of trade could be undertaken from all possible sources simultaneously, as follows:

(a) For notifying countries, as a first step, the guidance on completing the notification form should make countries aware of the importance of including information on their imports and exports. Second, as part of the letter sent to countries to verify the completeness of their submitted notification of final regulatory action, they will be informed that, once a second notification from another PIC region is provided, they will be requested to provide, where available, information on:

(i) Whether or not they manufactured the chemical and, if so, whether they continue to export it;

(ii) The last time that they imported the chemical;

(b) The relevant industry association (pesticide or industrial chemical) will be requested to provide a response as to whether the particular chemical is manufactured and traded. A positive response would be taken as evidence of trade. A negative response would require specific follow-up;

(c) A general call for information on continued use, import and export of the chemical could be posted on the Rotterdam website or included in the PIC circular each time that there were two verified notifications from two regions. This would also allow non-governmental organizations and others to provide information on evidence of continued production, use or trade.

4. Evidence of ongoing international trade for the chemical will be provided to the Committee for its consideration, along with the verified notifications of final regulatory action and supporting documentation submitted by the notifying countries.

Annex IV

Working paper on the preparation and use of focused summaries

A. Purpose of focused summaries

1. Focused summaries are important tools in facilitating the work of the Chemical Review Committee in reviewing notifications of final regulatory actions for banned or severely restricted chemicals which are candidates for inclusion in Annex III of the Convention.

2. Focused summaries should summarize the notification of final regulatory action while ensuring that an adequate level of detail is provided so that the basis for the regulatory action is clearly presented. They should demonstrate how the notification fulfils the criteria in Annex II of the Convention by providing a summary of key decisions and key findings, with references to the associated documents.

3. Designated national authorities (DNAs) are invited to submit focused summaries of the information used in support of regulatory actions when providing supporting documentation for review by the Chemical Review Committee. The use of a focused summary by the Committee is not intended to establish a new obligation for DNAs but remains a voluntary action aimed at facilitating the work of the Committee. Focused summaries should also assist DNAs in putting together a notification of final regulatory action for banned or severely restricted chemicals.

4. The format and content of focused summaries are flexible. They should focus on the information which a Government has considered in support of its final regulatory action. Documentation already produced and published by national Governments may be adequate as focused summaries. Focused summaries should be as informative and as short as possible; depending on the nature of the notification, they could be in the order of 10 pages in length. In situations where the supporting documentation is not available in English, the focused summary would be that part of the documentation which is translated into that language. It should be noted, however that the focused summary is not intended to replace supporting documentation, and the supporting documentation should still be provided.

B. Outline or key headings to include in a focused summary

1. Introduction

5. This section should provide a brief statement or summary of the final regulatory actions and the reasons for the action taken (e.g., occupational health concerns, environmental concerns). It may include:

(a) The events that led to the final regulatory action;

(b) The significance of the regulatory action, e.g., one use or many uses, level or degree of exposure;

(c) An overview of the regulatory system of the notifying country, if relevant;

(d) The scope of the regulatory action: a precise description of the chemicals subject to the regulatory action.

2. Risk evaluation

6. This section should contain evidence, as available, that a risk evaluation was carried out under the prevailing conditions of the notifying country. It should confirm that the criteria in Annex II, subparagraph (b), have been met. It may include:

(a) Key findings of the national risk evaluation;

(b) Key data reviews consulted together with a brief description;

(c) Reference to national studies, e.g. toxicological and ecotoxicity studies;

(d) A summary of actual or potential human exposure and/or environmental fate.

C. Risk reduction and relevance to other States

7. This section should contain evidence that the control action is of relevance to other States. It may include information on the following:

(a) Estimates of the quantity of chemicals used, or imported/exported, at the time of the regulatory action and, if possible, information on ongoing trade;

(b) Relevance of the control action to other States, i.e., those with similar conditions of use;

(c) Comments on the typical use of the chemical in the notifying country, with comments on possible misuse if appropriate.

D. Worked example of a focused summary: monocrotophos

1. Introduction

1. This section should provide a brief statement or summary of the final regulatory action and the reasons for the action taken (e.g., occupational health concerns, environmental concerns). It may include:

(a) The events that led to the final regulatory action:

The registration of monocrotophos and all products was withdrawn as the result of a review of monocrotophos conducted by the Australian National Registration Authority for Agricultural and Veterinary Chemicals (NRA) and its advisory agencies.

(b) Exposure:

From 9 December 1999, the Australian registration of monocrotophos was cancelled by the NRA. The NRA's decision cancels the registrations and all relevant approvals, and halts further imports. Use of monocrotophos will be phased out over a year to allow current stocks of monocrotophos to be used up. This was seen as the lowest-risk option for disposing of existing stocks of monocrotophos, in the light of risks associated with product recall, storage and disposal. It also allows users time to change over to other pesticides. Wholesale supply of products to cease by 30 June 2000; retail sale to cease by 31 December 2000; and all minimum recommended levels will be withdrawn from 30 June 2002.

(c) An overview of the regulatory system of the notifying country, if relevant

The NRA is an independent statutory authority with responsibility for the regulation of agricultural and veterinary chemicals. The NRA's Existing Chemicals Review Programme (ECRP) systematically examines agricultural and veterinary chemicals registered in the past to determine whether they continue to meet current standards for registration. Chemicals for review are chosen according to predetermined, publicly available selection criteria. The review's findings are based on information collected from a variety of sources, including data packages and information submitted by registrants, information submitted by members of the public, questionnaires sent to key user/industry groups and Government organizations, and literature searches.

(d) Scope of the regulatory action: a precise description of the chemicals subject to the regulatory action:

Australia has withdrawn registration for monocrotophos and all products with a phase-out period of one year, ending 30 June 2002 for existing stocks. The Australian MRLs for monocrotophos are to be withdrawn on 30 June 2002.

2. Risk evaluation

2. This section should contain evidence, as available, that a risk evaluation was carried out under the prevailing conditions of the notifying country. It should confirm that criteria in Annex II, subparagraph (b) have been met. It may include:

(a) Key findings of the national risk evaluation

Australia's risk evaluation took into account toxicology and public health; occupational health and safety; environmental impact; trade impact; and availability of lower-risk alternatives. The review concluded that continued use of monocrotophos would pose an unacceptably high risk to workers, to wildlife, especially avian and aquatic species, and to trade. The environmental risk of monocrotophos use is primarily through exposure of non-target species. Monocrotophos is very highly toxic to birds exposed on an acute oral and subacute dietary basis. Monocrotophos was determined to be the cause of mortality or was strongly implicated in a large number of bird-kill incidents affecting a wide variety of avian species. Monocrotophos posed serious risks to birds even when application was performed in a manner consistent with label directions. Monocrotophos is also highly toxic to freshwater invertebrates. The human health risk arises because monocrotophos is a potent cholinesterase inhibitor and applicators and workers are potentially at risk of acutely toxic effects. In laboratory studies on rats and rabbits, monocrotophos was found to induce maternal toxicity and developmentally toxic effects (runting), but no major teratological abnormalities, at low doses.

(b) Key data reviews consulted together with a brief description:

FAO/WHO, 1995. Pesticide Residues in Food – 1995 evaluations. Part II - Toxicological and Environmental. Joint Meeting on Pesticide Residues (JMPR); WHO Geneva WHO/PCS/96.48.

FAO/WHO, 1993. Pesticide Residues in Food – 1993; Report, Joint Meeting on Pesticide Residues (JMPR); FAO Plant Production and Protection Paper 122.

FAO/WHO, 1995. Pesticide Residues in Food – 1995; Report, Joint Meeting on Pesticide Residues (JMPR); FAO Plant Production and Protection Paper 133.

WHO/PCS/96.3. World Health Organization, IPCS, Geneva.

USEPA, 1985. Guidance for the re-registration of manufacturing use and certain end use pesticide products containing monocrotophos. USEPA, Washington, D.C. (Sept. 1985).

USEPA, 1985. Pesticide fact sheet No 72: Monocrotophos. USEPA, Washington D.C.

(c) Reference to national studies, e.g. toxicological and ecotoxicity studies:

The NRA review of monocrotophos, January 2000. NRA Review Series 00.1. National Registration Authority for Agricultural and Veterinary Chemicals (http://www.nra.gov.au/chemrev/chemrev.shtml).

National Registration Authority for Agricultural and Veterinary Chemicals (NRA) Board Resolution 793, Action 99-77a, 9 December, 1999.

(d) Summary of actual or potential human exposure and/or environmental fate:

Human exposure assessment

General public: The only exposure path relevant to the general public was considered to be food. An estimate of monocrotophos intake was derived from the Australian Market Basket Survey. This procedure is based on measured monocrotophos residues found in food surveys rather than assuming that the pesticide is present at the maximum residue limit (MRL). In 1994, the estimated intake in the group with the highest consumption of monocrotophos residues (toddlers aged two) was 7.2 ng/kg bw/day which accounts for less than 3 per cent of the acceptable daily intake (ADI).

Workers: In accordance with internationally accepted practice, the occupational risk assessment was based on hazard characterization and worker exposure. The latter took into consideration the mixing, loading and application activities involved in the use of the pesticide. However, there were no measured worker exposure studies for mixing, loading or application of monocrotophos and therefore, the United Kingdom Prediction Operator Exposure Model (UKPOEM) was used to estimate exposure, from which margins of exposure (MOE) for the Australian use pattern were determined wherever possible.

The conclusions of the occupational health and safety assessment were that:

- High-volume air-blast spraying of fruit and vegetables posed a high and unacceptable risk for workers applying monocrotophos, even if mixer/loader exposure was eliminated.
- High-volume and low-volume boom-spraying on flowers, tomatoes, French beans and maize are not supported as the risk is unacceptable.
- Ground-spraying on broadacre crops is not supported as the risk is unacceptable.
- Aerial spraying is the only application method which was supported because of the comparatively minimal likely exposure to users.

Environmental exposure assessment

Australia's environmental assessment calculations using standard methodology showed that there was a high risk to birds from the use of monocrotophos when avian food items were sprayed. There was also a high aquatic risk to sensitive invertebrates from spray drift at all application rates, except for boom-spray applications at 140 g a.i/ha, where, provided suitable measures to reduce spray drift are in place, the risk is moderate. The risk to bees and other non-target insects was high. There is also a potentially high risk to aquatic organisms from runoff if rain occurs within days of application.

3. Risk reduction and relevance to other States

3. This section should contain evidence that the control action is of relevance to other States. It may include information on the following:

(a) Estimates of the quantity of chemicals used, or imported/exported, at the time of the regulatory action and, if possible, information on ongoing trade

No information

(b) Relevance of the control action to other States, i.e. those with similar conditions of use

The restriction of use of monocrotophos should be considered by all States because of the high risk associated with all uses but particularly ground spraying, of monocrotophos even when rigorous occupational health and safety practices are employed. The Australian

review identified risks to users, trade and the environment and especially to avian and aquatic species.

Alternatives: The following alternatives are considered to pose lower risks to workers and the environment. World Health Organization hazard classifications are provided as an aid to the consideration of relative risks. The classifications are for active constituents. Actual hazard depends on formulations.

Moderately hazardous: chlorpyrifos, diazinon; dimethoate; fenitrothion.

Slightly hazardous: azamethiphos; malathion.

(c) Comments on the typical use of the chemical the notifying country, with comments on possible misuse if appropriate

Typical and supported uses of monocrotophos were: aerial application to bananas, potatoes, and broadacre crops including tobacco, cereals, wheat, oilseeds and cotton; high-volume air-blast spraying of fruit and vegetables; high-volume and low-volume boom-spraying on flowers, tomatoes, French beans and maize; ground spraying on broadacre crops. After the NRA review, aerial spraying was the only application method which was supported because of the comparatively minimal likely exposure to users.

Annex V

Rationales for conclusions by the Committee that notifications had met the criteria of the Annex II of the Rotterdam Convention

A. Notification for methyl bromide (CAS No. 74-83-9) from the Netherlands

1. In reviewing the notification of final regulatory action by the Netherlands to severely restrict methyl bromide**,** together with the supporting documentary information provided by the Party, the Committee was able to confirm that the action had been taken in order to protect human health and the environment. The major health concern is from acute exposure. Delayed onset of symptoms may occur. Fatal poisoning has resulted from exposures to relatively high concentration (from 33,000 mg/m^3 or 8,600 ppm onwards) of methyl bromide vapours. Non-fatal poisoning has resulted from exposure to concentrations as low as 390–1,950 mg/m^3. Organs affected by exposure include the nervous system, lung, nasal mucosa, kidney, eye and skin. Methyl bromide is an ozone-depleting substance and also has high toxicity for aquatic organisms. In addition, it was shown that it had potential following uses as a soil disinfectant to pollute surface water and to leach to groundwater.

2. The Committee established that the final regulatory action had been taken on the basis of risk evaluation and that the evaluation had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within the Netherlands.

3. The risk evaluation of the Netherlands focused on the behaviour and effects of methyl bromide in air, groundwater and surface water. It took into account data on the ozone-depleting potential, data on the leaching potential and data on the ecotoxicological effects of methyl bromide, e.g., the toxicity for fish. The ozone-depletion factor of methyl bromide was approximately 0.6, related to the substance CFC13. The estimated concentration in groundwater amounted to approximately 100 µg/L, based on a soil degradation half-life time of about 15 days and a sorption constant of about 2.5 L/kg. The measured concentrations in surface water amounted to approximately 9 mg/L, which resulted in the expectation of a very high risk for fish. The Committee agreed that the evaluation of the risks to aquatic organisms met the requirements of the criterion linked to the prevailing conditions of use in the Netherlands. With regard, however, to the effects of ozone depletion as a global concern, the Committee noted that the relevance of prevailing conditions for risk evaluation needed further discussion and guidance from the Conference of the Parties.

4. The Committee concluded that the final regulatory action provided a sufficiently broad basis to merit including methyl bromide in Annex III of the Rotterdam Convention in the pesticide category. It noted that the action had led to a decrease in the quantities of the chemicals used in the notifying Party. Previous uses as a soil disinfectant had been banned since 1992, and only the uses as space fumigant in gas proof rooms were still registered. The use of methyl bromide in Dutch agriculture had been reduced dramatically because of the decision to ban the substance from the use as a soil fumigant. As a result, emissions to air and to ground and surface water had been minimized. Hence, the risk for human health or environment in the notifying Party had been significantly reduced.

5. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability since use of methyl bromide poses human health risks, environmental risks and global effects (methyl bromide is included in the Montreal Protocol). On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee concluded also that there was evidence of ongoing international trade in methyl bromide.

6. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of methyl bromide.

7. At its first session, the Committee concluded that the notification of final regulatory action by the Netherlands met the information requirements of Annex I and the criteria set out in Annex II to the Convention.

B. Notification for methyl parathion (CAS No. 298-00-0) from the European Community

8. In reviewing the notification of final regulatory action by the EC to ban methyl parathion, together with the supporting documentary information provided by that Party, the Committee was able to confirm that the action had been taken in order to protect human health, in particular workers and the environment, in particular non-target organisms.

9. In both cases the main concern related to the toxic effects of the substance as a result of inhibition of choline esterase.

10. The Committee established that the final regulatory action had been taken as a consequence of a risk evaluation and that the evaluation had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within the European Community. The risk evaluation of the pesticidal uses of methyl parathion concluded that, on the basis of the results of several exposure models, there were unacceptable risks to workers and non-target organisms (insects, birds, aquatic organisms and mammals) due to the acute and chronic toxic effects of methyl parathion.

11. The Committee concluded that the final regulatory action provided a sufficiently broad basis to merit including methyl parathion in Annex III of the Rotterdam Convention in the pesticide category. It noted that the action had led to a decrease in the quantities of the chemicals used in the notifying Party since all uses as a plant protection product were prohibited. Hence, the risk for human health and the environment in the notifying Party were expected to be significantly reduced.

12. There was no indication that there were any industrial uses of methyl parathion. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability but of broader relevance since similar problems were likely to occur in other countries, particularly developing countries. On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee concluded also that there was evidence of ongoing international trade in methyl parathion.

13. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of methyl parathion.

14. At its first session, the Committee concluded that the notification of final regulatory action by the European Community met the information requirements of Annex I and the criteria set out in Annex II to the Convention.

C. Notification for benzidine (CAS No 92-87-5) and benzidine dihydrochloride (CAS No. 531 85-1) from Canada

15. In reviewing the notification of final regulatory action by Canada to severely restrict benzidine and benzidine dihydrochloride, together with the supporting documentary information provided by the Party, the Committee was able to confirm that the action had been taken in order to protect human health. Canada had concluded that benzidine was a non-threshold carcinogen in humans. Benzidine dihydrochloride was also addressed because it dissociates in water into benzidine.

16. Generally speaking, benzidine is used as an intermediate in the manufacture of dyes and pigments, in very limited specialty laboratory applications, and for research and development purposes. Because benzidine is a non-threshold toxicant, it is understood that there is some probability of adverse effect at any level of exposure.

17. Data used in the Canadian risk evaluation had been identified through the evaluation of existing review documents (United States Agency for Toxic Substances and Disease Registry, United States Environmental Protection Agency and the International Agency for Research on Cancer), as well as information from published reference texts and literature identified through on-line searches of various databases (Hazardous Substances Data Bank, Registry of Toxic Effects of Chemical Substances, Integrated Risk Information System, etc.). All original studies used in the risk evaluation had been critically evaluated by Canada. Although levels at the time of the regulatory action did not pose a threat to human health, the regulatory action was put in place as a precautionary measure to protect the health of Canadians. This approach is consistent with the objective that exposure to non-threshold carcinogens should be reduced wherever possible, and obviates the need to establish an arbitrary de minimis level of risk.

18. Based on this, the Committee established that the final regulatory action had been taken on the basis of risk evaluation and that the evaluation had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within Canada.

19. The Committee concluded that the final regulatory action provided a sufficiently broad basis to merit including benzidine and benzidine dihydrochloride in Annex III of the Rotterdam Convention in the industrial category. Given that preventive action precludes future exposure, the Committee noted that the action would lead to a decrease in the quantities of the chemicals potentially used in the notifying Party. Hence, potential use and the risk for human health in the notifying Party had been significantly reduced.

20. Use of benzidine and benzidine dihydrochloride is severely restricted in Canada, and allowed only in very limited specialty laboratory applications, and for research and development purposes. There was no indication of any pesticide uses for benzidine. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability since benzidine is a non-threshold carcinogen and conditions of exposure can apply to most countries. On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee concluded also that there was evidence of ongoing international trade in benzidine.

21. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of benzidine.

22. At its first session, the Committee concluded that the notification of final regulatory action by Canada met the information requirements of Annex I and the criteria set out in Annex II to the Convention.

D. Notification for bis(chloromethyl)ether (CAS No. 542-88-1) from Canada

23. In reviewing the notification of final regulatory action by Canada to ban bis(chloromethyl)ether, together with the supporting documentary information provided by the Party, the Committee was able to confirm that the action had been taken in order to protect human health. Canada concluded that bis(chloromethyl)ether was a non-threshold carcinogen in humans.

24. Generally speaking, bis(chloromethyl)ether is used primarily in the synthesis of plastics and ion-exchange resins. Because bis(chloromethyl)ether is a non-threshold toxicant, it is understood that there is some probability of adverse effect at any level of exposure.

25. Data used in the Canadian risk evaluation were identified through evaluation of existing review documents (United States Agency for Toxic Substances and Disease Registry and United States Environmental Protection Agency), as well information from published reference texts and literature identified through on-line searches of various databases (Hazardous Substances Data Bank, Registry of Toxic Effects of Chemical Substances, Integrated Risk Information System, etc.). All original studies used in the risk evaluation had been critically evaluated by Canada. Although levels at the time of the

regulatory action did not pose a threat to human health, the regulatory action was put in place as a precautionary measure to protect the health of Canadians. This approach is consistent with the objective that exposure to non-threshold carcinogens should be reduced wherever possible, and obviates the need to establish an arbitrary de minimis level of risk.

26. Based on this, the Committee established that the final regulatory action had been taken on the basis of risk evaluation and that the evaluation had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within Canada.

27. The Committee concluded that the final regulatory action provided a sufficiently broad basis to merit including bis(chloromethyl)ether in Annex III of the Rotterdam Convention in the industrial category. Given that preventive action precludes future exposure, the Committee noted that the action would lead to a decrease in the quantities of the chemicals potentially used in the notifying Party. Hence, potential use and the risk for human health in the notifying Party had been significantly reduced.

28. Use of bis(chloromethyl)ether is banned in Canada except for use in a laboratory for scientific research purposes or as a laboratory analytical standard. There was no indication of any pesticide uses for bis(chloromethyl)ether. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability since bis(chloromethyl)ether is a non-threshold carcinogen and conditions of exposure can apply to most countries. On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee could not conclude that there was evidence of ongoing international trade in bis(chloromethyl)ether, although this criterion is not a mandatory requirement of Annex II.

29. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of bis(chloromethyl)ether.

30. At its first session, the Committee concluded that the notification of final regulatory action by Canada met the information requirements of Annex I and the criteria set out in Annex II to the Convention.

E. Notification for carbon tetrachloride (CAS No 56-23-5) from Canada

31. In reviewing the notification of final regulatory action by Canada to severely restrict carbon tetrachloride, together with the supporting documentary information provided by the Party, the Committee was able to confirm that the action had been taken in order to protect the environment. Key to the regulatory actions taken was Canada's conclusion that carbon tetrachloride had an ozone-depleting potential and created indirect hazards via the environment. Stratospheric ozone depletion leads to an increase in the intensity of UV-B rays that reach the earth's surface, where they can disrupt important biological processes and affect air quality. The most basic impact for humans is the increase in skin cancers, but can also cause eye damage, and may weaken the immune system. In the Canadian Arctic, UV levels can increase substantially from season to season, owing to the hole in the ozone layer, which is caused by ozone-depleting substances, such as carbon tetrachloride.

32. On that basis, the Committee established that the final regulatory action had been taken as a consequence of risk evaluation. In addition, the evaluation had been based on a review of scientific data in the context of the conditions prevailing in Canada. The supporting documentation (UNEP assessment report) indicated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. Other supporting documentation also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within Canada.

33. As an industrial chemical, it was mainly used in the synthesis of chlorofluoromethane (chemical feedstock), and also, in smaller quantities, in fire extinguishers, as a dry-cleaning agent, in

pharmaceuticals, paints and solvents. As a pesticide, it was used as a fumigant to control insect pests in stored grains and garments.

34. The regulatory action taken in Canada prohibits the manufacture, use, sale, import or export of carbon tetrachloride, except for certain limited uses. It was therefore considered that the severe restriction had led to a significant decrease in the quantities of the chemicals used in Canada. Hence, the risk for human health or environment in the notifying Party has been significantly reduced.

35. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability since carbon tetrachloride caused a global environmental problem. On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee concluded also that there was evidence of ongoing international trade in carbon tetrachloride.

36. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of carbon tetrachloride.

37. At its first session, the Committee concluded that the notification of final regulatory action by Canada met the information requirements of Annex I and the criteria set out in Annex II to the Convention.

Annex VI

Template for rationales for conclusions by the Committee that notifications had met the criteria of the Annex II of the Rotterdam Convention

Rationale for the conclusion that the notification for XXX (CAS No. YYY) from ZZZ meets the criteria of Annex II of the Rotterdam Convention

1. In reviewing the notification of final regulatory action by ZZZ together with the supporting documentary information provided by the Party, the Committee was able to confirm that the action had been taken in order to protect *human health/the environment*. *INSERT description of health/environment effects, uses, exposure*

2. The Committee established that the final regulatory action had been taken on the basis of risk evaluation and that the evaluation had been based on a review of scientific data. The available documentation demonstrated that the data had been generated in accordance with scientifically recognized methods, and that the data reviews had been performed and documented in accordance with generally recognized scientific principles and procedures. It also showed that the final regulatory action had been based on chemical-specific risk evaluations taking into account the conditions of exposure within *ZZZ . INSERT summary of the risk evaluation.*

3. The Committee concluded that the final regulatory action provided a sufficiently broad basis to merit including CHEMICAL XXX in Annex III of the Rotterdam Convention in the *pesticide / industrial* category. It noted that the action had led to a decrease in the quantities of the chemicals used in the notifying Party (*brief description of uses banned or severely restricted and those still allowed*), *insert effects resulting from the decrease in quantity or expected effect from the preventive action*. Hence, the risk for human health or environment in the notifying Party had been significantly reduced.

4. *(Where applicable)* There was no indication that there were any pesticide / industrial uses of CHEMICAL XXX. The Committee also took into account that the considerations underlying the final regulatory action were not of limited applicability since *INSERT REASON*. On the basis of information provided to the members at the first session of the Chemical Review Committee and other available information, the Committee concluded also that there was evidence of ongoing international trade in CHEMICAL XXX.

5. The Committee noted that the final regulatory action was not based on concerns about intentional misuse of CHEMICAL XXX.

6. At its first session, the Committee concluded that the notification of final regulatory action by ZZZ met the information requirements of Annex I and the criteria set out in Annex II to the Convention. When a second notification for the same chemical from a Party in a region other than *** be found by the Committee as meeting the criteria of Annex II, the Committee will recommend to the Conference of the Parties that CHEMICAL XXX be included in Annex III to the Rotterdam Convention.