The WHO Recommended Classification of Pesticides by Hazard

and

Guidelines to Classification 2009

World Health Organization

IPCS
International Programme on Chemical Safety

IOMC INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS
A cooperative agreement among FAO, ILO, UNEP, UNIDO, UNITAR, WHO & OECD

The WHO Recommended Classification of Pesticides by Hazard

and

Guidelines to Classification 2009

WHO Library Cataloguing-in-Publication Data

World Health Organization.

The WHO recommended classification of pesticides by hazard and guidelines to classification: 2009.

1. Pesticides – toxicity. 2. Pesticides – classification. 3. Hazardous substances – classification. 4. Guidelines. I. International Programme on Chemical Safety. II. Title.

ISBN 978 92 4 154796 3 **(NLM classification: WA 240)**
ISSN 1684-1042

Cover design: J-C. Fattier, WHO.

Printed by Wissenchaftliche Verlagsgesellschaft mbH, Stuttgart, Germany.

THE WHO RECOMMENDED CLASSIFICATION OF PESTICIDES BY HAZARD AND GUIDELINES TO CLASSIFICATION 2009

The WHO Recommended Classification of Pesticides by Hazard was approved by the 28th World Health Assembly in 1975 and has since gained wide acceptance. When it was published in the WHO Chronicle, 29, 397-401 (1975), an annex, which was not part of the Classification, illustrated its use by listing examples of classification of some pesticidal active ingredients and their formulations. Later suggestions were made by Member States and pesticide registration authorities that further guidance should be given on the classification of individual pesticides. Guidelines were first issued in 1978, and have since been revised and reissued every few years.

Up until the present revision the original guidelines approved by the World Health Assembly in 1975 have been followed without amendment. In December, 2002 the United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (UNCETDG/GHS) approved a document called "*The Globally Harmonized System of Classification and Labelling of Chemicals*" with the intent to provide a globally-harmonized system[1] (GHS) to address classification of chemicals, labels, and safety data sheets. The GHS (with subsequent revisions) is now being widely used for the classification and labeling of chemicals worldwide. For this revision of the Classification the WHO Hazard Classes have been aligned in an appropriate way with the GHS Acute Toxicity Hazard Categories for acute oral or dermal toxicity as the starting point for allocating pesticides to a WHO Hazard Class (with adjustments for individual pesticides where required). It is anticipated that few of the more toxic pesticides will change WHO Hazard Class as a result of this change. As has always been the case, the classification of some pesticides has been adjusted to take account of severe hazards to health other than acute toxicity (as described in Part II). The GHS Acute Toxicity Hazard Category for each pesticide is now presented alongside the existing information.

The document is arranged as follows:

Part I: Overarching principles for the classification of pesticides as recommended by the World Health Assembly. These principles continue to apply, but the World Health Assembly Resolution envisaged that the classification criteria might need to be developed with time and increasing experience. The guide-points originally proposed in 1975 are now being aligned with the corresponding Acute Toxicity Hazard Categories from the GHS.

Part II: Guidelines to Classification. Individual products are classified in a series of tables, according to the oral or dermal toxicity of the technical product. The tables are subject to review periodically.

The toxicity values are intended to be a guide only. Formulations should be separately classified using the methods set out on pages 4 (single technical product) and 7 (mixtures) and the table in Part I. To assist in the classification of formulations, an annex is provided giving numerical tables from which the classification may also be derived.

---

[1] See http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html.

Comments on Part II of the document are welcome, together with proposals for new entries. These should be addressed to the International Programme on Chemical Safety, World Health Organization, 1211 Geneva 27, Switzerland, and should include supporting data on the compound being commented on or proposed.

This document is a revision of the document previously issued as ISBN 92 4 154663 8.

PART I
RECOMMENDED CLASSIFICATION OF PESTICIDES BY HAZARD

Extract from WHO Chronicle, 29: 397-401 (1975)

In 1973, the WHO Executive Board asked the Director-General of WHO to take steps to develop a tentative classification of pesticides that would distinguish between the more and the less hazardous forms of each pesticide. A proposal for a WHO recommended classification of pesticides by hazard was accordingly prepared, taking into account the views of members of the WHO Expert Advisory Panel on Insecticides and other expert advisory panels with special competence and interest in pesticide technology, as well as the comments of WHO Member States and of two international agencies. This proposal was adopted by the Twenty-eighth World Health Assembly, which recommended the use of the classification by Member States, international agencies, and regional bodies.

The text below is reproduced from the Proposal[2] which was adopted by the World Health Assembly in 1975.

The hazard referred to in this Recommendation is the acute risk to health (that is, the risk of single or multiple exposures over a relatively short period of time) that might be encountered accidentally by any person handling the product in accordance with the directions for handling by the manufacturer or in accordance with the rules laid down for storage and transportation by competent international bodies.

Any classification based on biological data can never be treated as final. In the assessment of biological data, honest differences of opinion are inevitable and most borderline cases can be reclassified in an adjacent class. Variability or inconsistency in toxicity data due to differences in susceptibility of test animals, or to experimental techniques and materials used can also result in differing assessments. The classification criteria are guide-points intended to supplement but never to substitute for special knowledge, sound clinical judgement or experience with a compound. Reappraisal might be necessary from time to time.

Basis of classification

The classification distinguishes between the more and the less hazardous forms of each pesticide in that it is based on the toxicity of the technical compound and on its formulations. [In particular, allowance is made for the lesser hazards from solids as compared with liquids.][3]

The classification is based primarily on the acute oral and dermal toxicity to the rat since these determinations are standard procedures in toxicology. Where the dermal LD_{50}[4] value of a compound is such that it would place it in a more restrictive class than the oral LD_{50} value would indicate, the compound will always be classified in the more restrictive class. Provision is made for the classification of a particular compound to be adjusted if, for any reason, the acute hazard to man differs from that indicated by LD_{50} assessments alone.

---

[2] Official Record of the World Health Organization 1975, No.223, Part 1, p.12

[3] Note:- this distinction is not made in the GHS and no longer applies to the WHO Classification

[4] The LD_{50} value is a statistical estimate of the number of mg of toxicant per kg of bodyweight required to kill 50% of a large population of test animals.

Application of the criteria for classification

(a) Where it is shown that for a particular compound the rat is not the most suitable test animal (for example, if another species is conspicuously more sensitive or more closely resembles man in its reaction) then the classification of that compound should take this into account.

(b) In practice, the majority of classifications will be made on the acute oral LD_{50} value. However, dermal toxicity must always be considered since it has been found that, under most conditions of handling pesticides, a high proportion of the total exposure is dermal. Classification based on dermal data in a class indicating a great risk is necessary when the dermal LD_{50} values indicate greater hazard than oral LD_{50} values.

(c) If the active ingredient produces irreversible damage to vital organs, is highly volatile, is markedly cumulative in its effect, or is found after direct observations to be particularly hazardous or significantly allergenic to man, then adjustments to the classification can be made by classifying the compound in a class indicating a higher hazard. Alternatively, if it can be shown that the preparation is less toxic or hazardous than expected from consideration of the LD_{50} values of the ingredient or ingredients, or for any other reason, adjustments should be made by classifying the compound in a class indicating a lower hazard.

(d) In certain special cases the acute oral or dermal LD_{50} values of the compound or formulation should not be used as the main basis for classification. In such cases (for example, aerosol preparations, other special formulations and fumigants), more appropriate criteria should be used.

(e) It is highly desirable that, whenever practicable, toxicological data for each formulation to be classified should be available from the manufacturer. However, if such data are not obtainable, then the classification may be based on proportionate calculations from the LD_{50} values of the technical ingredient or ingredients, according to the following formula:

$$\frac{LD_{50}\ active\ ingredient \times 100}{Percentage\ of\ active\ ingredient\ in\ formulation}$$

If the formulation contains more than one ingredient (including solvents, wetting agents, etc.) of significant toxicity-enhancing properties, then the classification should correspond to the toxicity of the mixed ingredients.

(f) With a few exceptions, pesticides have low volatility and therefore no criteria are at present set out for volatility in this Recommendation. The inclusion of such criteria is unlikely to affect the classification of pesticides by hazard except in the case of volatile fumigants used in agriculture and food storage. On the other hand, when the criteria are applied to pesticide formulations based on solvents or to other chemicals, account must be taken of volatility and consequent inhalation toxicity.

Effects of classification on labeling[5]

While no specific symbols to identify classes are included in the Recommendation, the following are the general implications of the classification as regards labelling.

The aim should be uniformity in the statement on the nature of the risk (by phrase and/or symbol) on the label of the product, irrespective of the country of origin or use. Labels of products classified in classes Ia and Ib should bear a symbol indicating a high degree of hazard (usually a type of skull and crossbones) and a signal word or phrase, e.g. POISON or TOXIC. The presentation of the symbol and word or phrase, in terms of colour, size and shape should ensure that they are given sufficient prominence on the label.

The text should be in the local language and for all formulations should include the approved name of the active ingredient or ingredients, the method of use, and precautions to be taken in use. For classes Ia and Ib, symptoms and immediate treatment of poisoning should also be included.

The detailed precautions necessary for the use of a pesticide depend on the nature of the formulation and the pattern of use and are best decided by a pesticide registration authority when accepting a commercial label.

There are international agreements on symbols to denote hazards from materials which are inflammable, corrosive, explosive, etc., and these should be consulted and used where appropriate.

Revised criteria for classification (introduced for 2009 update)

The table showing the Recommended Criteria for Classification from the original World Health Assembly Proposal is not shown because it is no longer used. WHO now uses the Acute Toxicity Hazard Categories from the GHS[6] as the starting point for classification. This change is consistent with the 1975 World Health Assembly Resolution which envisaged that the WHO Classification would be further developed with time in consultation with countries, international agencies and regional bodies. The GHS meets this requirement as a classification system with global acceptance following extensive international consultation.

WHO Class		**LD_{50} for the rat (mg/kg body weight)**	
		Oral	**Dermal**
Ia	**Extremely hazardous**	**< 5**	**< 50**
Ib	**Highly hazardous**	**5–50**	**50–200**
II	**Moderately hazardous**	**50–2000**	**200–2000**
III	**Slightly hazardous**	**Over 2000**	**Over 2000**
U	**Unlikely to present acute hazard**	**5000 or higher**	

Details of how the WHO Classification has been aligned with the GHS Acute Toxicity Hazard Categories are presented in Part II.

[5] See *International Code of Conduct on the Distribution and Use of Pesticides*, FAO (2003), available at http://www.fao.org/docrep/005/Y4544E/y4544e00.HTM; also *Guidelines on Good Labelling Practice for Pesticides*, FAO (1995), available at http://www.fao.org/ag/AGP/AGPP/Pesticid/Code/Download/label.pdf

[6] See http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html. The categories for oral and dermal routes are used.

PART II
GUIDELINES TO CLASSIFICATION OF PESTICIDES BY HAZARD

The main section of the guidelines consists of five tables preceded by notes on their use. In the tables, active ingredients (technical grade) have been classified as follows:

The tables are arranged in alphabetical order.

In addition, the following tables show the details stated:

NOTES ON THE USE OF THE TABLES IN CLASSIFICATION

The final classification of any product is intended to be by formulation

The classification given in the tables below is of active ingredients, and only forms the starting point for the final classification of an actual formulation. It is by far preferable that the final classification of a formulation should be based on toxicity data obtained on that formulation by the manufacturer: the criteria set out in the table of the Classification in Part I are then applied to this first-hand data. Only if this is not available should the formula be used, as shown in Part I on page 4 to extrapolate the LD_{50} of the formulation from that of the technical product. In this event, the single oral or dermal value of the LD_{50} given in the tables below should be used in the formula. See also the Annex on page 54.

The following important points should be noted.

1. While the classification deals only with the acute risk to health, evaluations of other effects, including cancer, have been completed for many compounds for registration purposes. Where other effects have been shown to occur in man, these are noted in the 'Remarks' column and may have in some cases resulted in an adjusted classification.
2. Wherever possible, the data are listed under internationally approved common names, or if such names are not at present available, under nationally approved names. Some other common names appear in the alphabetic index pp. 65-78. Trade names are not given since there are many of these.
3. A list of references that may be used for the identification of pesticides is given at the end of these introductory notes, and the manufacturer should always assist by specifying any existing approved or common names for his product.
4. It is not possible to include classification of mixtures of pesticides in the guidelines: very many of these are marketed with varying concentrations of active constituents. There are three possible approaches to the classification of mixtures - in order of preference:
   (a) require the formulator to obtain reliable acute oral and dermal toxicity data for rats on the actual mixture as marketed: or
   (b) classify the formulation according to the most hazardous constituent of the mixture as if that constituent was present in the same concentration as the total concentration of all active constituents: or
   (c) apply the formula:

$$\frac{C_a}{T_a} + \frac{C_b}{T_b} + \ldots \frac{C_z}{T_z} \equiv \frac{100}{T_m}$$

Where C = the % concentrations of constituent A, B ... Z in the mixture
T = the oral LD_{50} values of constituents A, B ...Z
T_m = the oral LD_{50} value of the mixture.

The formula can also be used for dermal toxicities provided that this information is available on the same species for all constituents. The use of this formula does not take into account any potentiation or protective phenomena.

5. In the tables below, single figures have been given as LD_{50} values for classification purposes, using the route as described in the table. Where several LD_{50} values have been published, the lowest deemed reliable is used. Where a sex difference occurs in LD_{50} values, the value for the more sensitive sex is used. A number of adjustments to Classification have been made in respect of some pesticides and these are explained. A borderline case has been classified in the more or less hazardous class after consideration of its toxicology and use experience.

6. In the former WHO Classification scheme pesticides were classified on the basis of the physical state of the technical product. A distinction between liquids and solids is no longer made.

7. In Table 5, a number of pesticides are listed as unlikely to present any acute hazard in normal use. The WHO classification is open-ended but it is clear that there must be a point at which the acute hazard posed by the use of these compounds is so low as to be negligible provided that the precautions are taken that should be used in dealing with any chemical. In compiling this table, it has been assumed that this point is an LD_{50} of 5000 mg/kg bw or greater (in line with the upper limit for classification in the GHS). However, it should not be overlooked that in formulations of these technical products, solvents or vehicles may present a greater hazard than the actual pesticide and therefore classification of a formulation in one of the higher hazard classes may be necessary.

8. The WHO Classification is not limited to chemical pesticides. Biological pesticides can also be included if a suitable evaluation is available (*Bacillus thuringiensis* is included based on Environmental Health Criteria Document 217).

9. The toxicity data for pyrethroids is highly variable according to isomer ratios, the vehicle used for oral administration, and the husbandry of the test animals e.g. fasting prior to dosing. The variability is reflected in the prefix 'c' before LD_{50} values. The single LD_{50} value chosen for classification purposes is generally based on administration in corn oil and can be much lower than that in aqueous solutions. This underlines the need for classification by formulation if the classification is to reflect true hazard.

ENTRIES AND ABBREVIATIONS USED IN THE TABLES

New information since the previous edition is indicated by *italics*.

Column 1: Common name. [ISO] denotes common name of the active ingredient approved by the International Organization for Standardization. Such names are, when available, preferred by WHO to all other common names. However, attention is drawn to the fact that some of these names may not be acceptable for national use in some countries. If the letters ISO appear within parentheses (ISO), this indicates that ISO has standardized (or is in the process of standardizing) the name of the base, but not the name of the derivative listed in column 1. For example, fentin acetate (ISO) indicates that fentin is an ISO name, but fentin acetate is not. ISO* denotes pending ISO approval of the name. C denotes chemical, trivial, or other common name.

Column 2: CAS Registry number: The number for the chemical, not those for e.g. different esters or salts are given.

Column 3: UN number refers to the UN Recommendations on the transport of dangerous goods, Eleventh revision (1999). This is given only for active ingredients in Tables 1, 2, 3 or 4, since so few ingredients in Table 5 have UN numbers. The UN number refers only to the active ingredient; formulations are likely to have different numbers, since the ingredient may, for example, be dissolved in a solvent - and liquid products have different UN numbers, which depends on their flammability.

Column 4: Chemical type. Only a limited number of chemical types are shown. Most have some significance in the sense that they may have a common antidote, or may be confused in the nomenclature with other chemical types e.g. thiocarbamates are not cholinesterase inhibitors and do not have the same effects as carbamates. Chemical type is also a determinant of the UN numbering system. These chemical classifications are included only for convenience, and do not represent a recommendation on the part of the World Health Organization as to the way in which the pesticides should be classified. It should, furthermore, be understood that some pesticides may fall into more than one type.

AS	Arsenic compound
BP	Bipyridylium derivative
C	Carbamate
CO	Coumarin derivative
CU	Copper compound
HG	Mercury compound
NP	Nitrophenol derivative
OC	Organochlorine compound
OP	Organophosphorus compound
OT	Organotin compound
PAA	Phenoxyacetic acid derivative
PZ	Pyrazole
PY	Pyrethroid
T	Triazine derivative
TC	Thiocarbamate

Column 5: Physical state. Refers only to the active ingredient. L denotes liquid, including solids with a melting point below 50°C; oil denotes oily liquids and S solids, including waxes. The physical state may affect the exposure potential, and thus the absorbed amount of the chemical, and was taken into account when determining classification under the previous scheme.

Column 6: Main use. In most cases only a single use is given. This is only for identification purposes and does not exclude other uses.

AC	acaricide
AP	aphicide
B	bacteriostat (soil)
FM	fumigant
F	fungicide, other than for seed treatment
FST	fungicide, for seed treatment
H	herbicide
I	insecticide
IGR	insect growth regulator
Ix	ixodicide (for tick control)
L	larvicide
M	molluscicide
MT	miticide
N	nematocide
O	other use for plant pathogens
PGR	plant growth regulator
R	rodenticide
RP( )	repellant (species)
-S	applied to soil: not used with herbicides or plant growth regulators
SY	synergist

Column 7: GHS: This column indicates the classification of the pesticide according to "*The Globally Harmonized System of Classification and Labelling of Chemicals*" (GHS)[7]. The value shown in the column is the Acute Toxic Hazard Category according to the GHS criteria, which in turn is derived from the acute toxicity estimate value for the substance. In the majority of cases the acute toxicity estimate will be the experimentally-derived LD_{50} value for oral exposure. A comparison of the criteria (as LD_{50} values) used for the different classes in the former WHO Scheme or for GHS categories is shown in the tables below. The GHS table shows only a simplified summary; for full details of classification according to GHS the official publication of the GHS should be consulted.

Former WHO Classification Scheme

Class		***LD_{50} for the rat (mg/kg body weight)***			
		Oral		*Dermal*	
		Solids	*Liquids*	*Solids*	*Liquids*
Ia	*Extremely hazardous*	*5 or less*	*20 or less*	*10 or less*	*40 or less*
Ib	*Highly hazardous*	*5 - 50*	*20 - 200*	*10-100*	*40 – 400*
II	*Moderately hazardous*	*50 - 500*	*200 - 2000*	*100-1000*	*400 – 4000*
III	*Slightly hazardous*	*Over 500*	*Over 2000*	*Over 1000*	*Over 4000*

GHS Classification

GHS Category	**Classification criteria**			
	Oral		Dermal	
	LD_{50} [a] (mg/kg bw)	Hazard Statement	LD_{50} [b] (mg/kg bw)	Hazard Statement
Category 1	< 5	Fatal if swallowed	< 50	Fatal in contact with skin
Category 2	5 - 50	Fatal if swallowed	50 - 200	Fatal in contact with skin
Category 3	50 - 300	Toxic if swallowed	200 - 1000	Toxic in contact with skin
Category 4	300 - 2000	Harmful if swallowed	1000 - 2000	Harmful in contact with skin
Category 5	2000 - 5000	May be harmful if swallowed	2000 - 5000	May be harmful in contact with skin

[a] For oral data the rat is the preferred species, though data from other species may be appropriate when scientifically justified

[b] For dermal data the rat or rabbit are the preferred species, though data from other species may be appropriate when scientifically justified

[7] See http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html. The categories for oral and dermal routes are used

The former WHO Classification scheme applied different criteria to liquids and solids, but the GHS does not make a similar distinction and applies the same criteria. The GHS cut-off values for Category 2 and Category 3 are lower than the values which applied to liquids under the former WHO scheme, such that some liquids allocated to Class Ib would be placed in the lower GHS Category 3 (specifically pesticides with oral LD_{50} values in the range 50-200 mg/kg bw). In aligning the WHO scheme with the GHS criteria there was no intention to "lower" the classification of pesticides previously considered to be "Highly hazardous". Therefore, the classification of this limited number of liquid pesticides has been adjusted such that they remain in Class Ib. The revised criteria for the WHO classification scheme are shown in Part I (page 5).

Column 8: LD_{50}. The LD_{50} value is a statistical estimate of the number of mg of toxicant per kg of body weight required to kill 50% of a large population of test animals: the rat is used unless otherwise stated. Usually a single value, but sometimes a range is given. "c" preceding the value indicates that it is a value within a wider than usual range, adopted for classification purposes. When several different values are reported in the literature, the lowest is reported and used as the basis of classification, unless there are clear indications that a higher value is more reliable. Oral route values are used unless the dermal route values place the compound in a more hazardous class, or unless the dermal values are significantly lower than the oral values, although in the same class. Dermal LD_{50} values are indicated with the letter D.

Column 9: Remarks. This column is used to indicate cases in which the classification of a technical product has been adjusted (i.e., the oral LD_{50} value is not directly used as the basis of classification); Major irritant properties are also noted although they do not affect the classification. Sources of further information may also be given here: DS denotes a WHO/FAO Data Sheet on Pesticides, EHC an Environmental Health Criteria monograph, HSG a Health and Safety Guide, IARC IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, ICSC an International Chemical Safety Card, JMPR an evaluation by the Joint FAO/WHO Meeting on Pesticide Residues and JECFA an evaluation by the the Joint FAO/WHO Expert Committee on Food Additives. These publications (with the exception of IARC Monographs) can be found on the IPCS web site (http://www.who.int/ipcs/).

REFERENCES

Armstrong Lowe, D. and Stiles, A.R. (1973) Pesticides - nomenclature, specifications, analysis, use and residues in food, Bull. Wld. Hlth Org., 49, 169-204.

CICAD 6. Concise International Chemical Assessment Document 6 Biphenyl. Geneva, International Programme on Chemical Safety, 37 pp. 1999.

CICAD 13. Concise International Chemical Assessment Document 13 Triphenyltin compounds. Geneva, International Programme on Chemical Safety, 40 pp. 1999.

CICAD 40. Concise International Chemical Assessment Document 40 Formaldehyde. Geneva, International Programme on Chemical Safety, 75 pp. 2002.

CICAD 54. Concise International Chemical Assessment Document 40 Ethylene oxide. Geneva, International Programme on Chemical Safety, 57 pp. 2003.

CICAD 61. Concise International Chemical Assessment Document 61 Hydrogen cyanide and cyanides: Human health aspects. Geneva, International Programme on Chemical Safety, 67 pp. 2004.

DS. Pesticide Data Sheets. IPCS, Geneva, World Health Organization. See http://www.who.int/ipcs/publications/pds/en/index.html

Environmental Health Criteria 29 2,4-Dichlorophenoxyacetic Acid (2,4-D), Geneva, International Programme on Chemical Safety, 151 pp. 1984.

Environmental Health Criteria 34 Chlordane, Geneva, International Programme on Chemical Safety, 82 pp. 1984.

Environmental Health Criteria 38 Heptachlor, Geneva, International Programme on Chemical Safety, 81 pp. 1984

Environmental Health Criteria 39 Paraquat and Diquat, Geneva, International Programme on Chemical Safety, 173 pp. 1981.

Environmental Health Criteria 40 Endosulfan, Geneva, International Programme on Chemical Safety, 109 pp. 1984.

Environmental Health Criteria 41 Quintozene, Geneva, International Programme on Chemical Safety, 38 pp. 1984

Environmental Health Criteria 42 Tecnazene, Geneva, International Programme on Chemical Safety, 23 pp. 1984.

Environmental Health Criteria 43 Chlordecone, Geneva, International Programme on Chemical Safety, 57 pp. 1984.

Environmental Health Criteria 44 Mirex, Geneva, International Programme on Chemical Safety, 70 pp. 1984.

Environmental Health Criteria 45 Campechlor, Geneva, International Programme on Chemical Safety, 66 pp. 1984.

Environmental Health Criteria 63 Organophosphorus Insecticides, Geneva, International Programme on Chemical Safety, 181 pp. 1986.

Environmental Health Criteria 64 Carbamate Pesticides, Geneva, International Programme on Chemical Safety, 136 pp. 1986.

Environmental Health Criteria 66 Kelevan, Geneva, International Programme on Chemical Safety, 32 pp. 1984.

Environmental Health Criteria 67 Tetradifon, Geneva, International Programme on Chemical Safety, 47 pp. 1986.

Environmental Health Criteria 71 Pentachlorophenol, Geneva, International Programme on Chemical Safety, 236 pp. 1987.

Environmental Health Criteria 73 Phosphine and Selected Metal Phosphides, Geneva, International Programme on Chemical Safety, 100 pp. 1988.

Environmental Health Criteria 76 Thiocarbamate Pesticides, Geneva, International Programme on Chemical Safety, 49 pp. 1988.

Environmental Health Criteria 78 Dithiocarbamate Pesticides, Ethylenethiourea, and propylenethiourea, Geneva, International Programme on Chemical Safety, 140 pp. 1988.

Environmental Health Criteria 79 Dichlorvos, Geneva, International Programme on Chemical Safety, 157 pp. 1989.

Environmental Health Criteria 82 Cypermethrin, Geneva, International Programme on Chemical Safety, 154 pp. 1989.

Environmental Health Criteria 83 DDT and its Derivatives - Environmental Aspects, Geneva, International Programme on Chemical Safety, 98 pp. 1989.

Environmental Health Criteria 84 2,4-Dichlorphenoxyacetic Acid – Environmental Aspects, Geneva, International Programme on Chemical Safety, 92 pp. 1989.

Environmental Health Criteria 87 Allethrins, Geneva, International Programme on Chemical Safety, 75 pp. 1989.

Environmental Health Criteria 90 Dimethoate, Geneva, International Programme on Chemical Safety, 85 pp. 1989.

Environmental Health Criteria 92 Resmethrins; Geneva, International Programme on Chemical Safety, 79 pp. 1989.

Environmental Health Criteria 94 Permethrin; Geneva, International Programme on Chemical Safety, 125 pp. 1990.

Environmental Health Criteria 95 Fenvalerate; Geneva, International Programme on Chemical Safety, 121 pp. 1990.

Environmental Health Criteria 96 d-Phenothrin; Geneva, International Programme on Chemical Safety, 64 pp. 1990.

Environmental Health Criteria 97 Deltamethrin; Geneva, International Programme on Chemical Safety, 133 pp. 1990.

Environmental Health Criteria 98 Tetramethrin; Geneva, International Programme on Chemical Safety, 69 pp. 1990.

Environmental Health Criteria 99 Cyhalothrin; Geneva, International Programme on Chemical Safety, 106 pp. 1990.

Environmental Health Criteria 121; Aldicarb; Geneva, International Programme on Chemical Safety, 130 pp. 1991.

Environmental Health Criteria 123 Alpha- and Beta Hexachlorocyclohexanes, Geneva, International Programme on Chemical Safety, 170 pp. 1992.

Environmental Health Criteria 124 Lindane; Geneva, International Programme on Chemical Safety, 208 pp. 1991.

Environmental Health Criteria 132 Trichlorfon; Geneva, International Programme on Chemical Safety, 162 pp. 1992.

Environmental Health Criteria 133 Fenitrothion; Geneva, International Programme on Chemical Safety, 184 pp. 1992.

Environmental Health Criteria 142 Alpha-cypermethrin; Geneva, International Programme on Chemical Safety, 112 pp. 1992.

Environmental Health Criteria 145 Methyl Parathion; Geneva, International Programme on Chemical Safety, 244 pp. 1993.

Environmental Health Criteria 147 Propachlor, Geneva, International Programme on Chemical Safety, 110 pp. 1993.

Environmental Health Criteria 148 Benomyl; Geneva, International Programme on Chemical Safety, 135 pp. 1993.

Environmental Health Criteria 149 Carbendazim; Geneva, International Programme on Chemical Safety, 132 pp. 1993.

Environmental Health Criteria 153 Carbaryl; Geneva, International Programme on Chemical Safety, 358 pp. 1993.

Environmental Health Criteria 158 Amitrole; Geneva, International Programme on Chemical Safety, 107 pp. 1994.

Environmental Health Criteria 159 Glyphosate; Geneva, International Programme on Chemical Safety, 177 pp. 1994.
Environmental Health Criteria 166 Methyl bromide; Geneva, International Programme on Chemical Safety, 324 pp. 1995.
Environmental Health Criteria 175 Anticoagulant Rodenticides; Geneva, International Programme on Chemical Safety, 121 pp. 1995.
Environmental Health Criteria 176 1,2-dichloroethane (ethylene dichloride); (2nd edition), Geneva, International Programme on Chemical Safety, 148 pp. 1995.
Environmental Health Criteria 177 1,2-dibromoethane (ethylene dibromide); Geneva, International Programme on Chemical Safety, 146 pp. 1996.
Environmental Health Criteria 178 Methomyl; Geneva, International Programme on Chemical Safety, 150 pp. 1996.
Environmental Health Criteria 182 Thallium, Geneva, International Programme on Chemical Safety, 274 pp. 1996.
Environmental Health Criteria 183 Chlorothalonil, Geneva, International Programme on Chemical Safety, 145 pp. 1996.
Environmental Health Criteria 184 Diflubenzuron, Geneva, International Programme on Chemical Safety, 164 pp. 1996.
Environmental Health Criteria 195 Hexachlorobenzene, Geneva, International Programme on Chemical Safety, 160 pp. 1997.
Environmental Health Criteria 198 Diazinon, Geneva, International Programme on Chemical Safety, 140 pp. 1998
Environmental Health Criteria 200 Copper, Geneva, International Programme on Chemical Safety, 360 pp. 1998.
Environmental Health Criteria 217 Bacillus thuringiensis, Geneva, International Programme on Chemical Safety, 105 pp. 1999.
Environmental Health Criteria 220 Dinitro-*ortho*-cresol, Geneva, International Programme on Chemical Safety, 87 pp. 2000.
Environmental Health Criteria 224 Arsenic and arsenic compounds (Second edition), Geneva, International Programme on Chemical Safety, 521 pp. 2001.
FAO (1985), Guidelines on good labelling practice for pesticides, Rome, Food and Agriculture Organization of the United Nations, 36 pp.
FAO (1990), International Code of Conduct on the Distribution and Use of Pesticides: Rome, Food and Agriculture Organization of the United Nations, 34 pp.
HSGs. Health and Safety Guides, IPCS, Geneva, World Health Organization. See http://www.who.int/ipcs/publications/hsg/en/index.html
IARC 4. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 4 Some Aromatic Amines, Hydrazyne and Related Substances, N-Nitroso Compounds and Miscellaneous Alkylation Agents. Lyon, International Agency for Research on Cancer, 286 pp. 1974
IARC 7. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 12 Some Carbamates, Thiocarbamates and Carbazides. Lyon, International Agency for Research on Cancer, 282 pp. 1976
IARC 41. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 41 Some Halogenated Hydrocarbons and Pesticide Exposures. Lyon, International Agency for Research on Cancer, 434 pp. 1986.
IARC 53. Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 53 Occupational Exposures in Insecticide Application and some Pesticides. Lyon, International Agency for Research on Cancer, 612 pp. 1991.
IARC 62. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 6 Wood dust and formaldehyde. Lyon, International Agency for Research on Cancer, 405 pp. 1995.

IARC 63. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 63 Dry cleaning , Some Chlorinated Solvents and Other Industrial Chemicals. Lyon, International Agency for Research on Cancer, 558 pp. 1995.
IARC 71. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 71 Re-evaluatio of some organic chemicals, hydrazine and hydrogen peroxide, Parts I-III1. Lyon, International Agency for Research on Cancer, 1586 pp. 1999.
IARC 73. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 73 some chemicals taht cause tumours of the kidney or urinary bladder in rodents and some other substances. Lyon, International Agency for Research on Cancer, 674 pp. 1999.
IARC 79. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 79 some thyrotropic agents. Lyon, International Agency for Research on Cancer, 763 pp. 2001.
IARC 84. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 84 some drinking water disinfectants and contaminants, including arsenic. Lyon, International Agency for Research on Cancer, 512 pp. 2004.
IARC Suppl 7. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Voverall evaluations of carcinogenicity: An updating of IARC Monographs volumes 1 to 42. Lyon, International Agency for Research on Cancer, 440 pp. 1987.
International Organization for Standardization (1981) Pesticides and other agrochemicals - common names, Geneva (ISO 1750). (Copies available only from national standards institutes).
ICSCs. International Chemical Safety Cards, IPCS, Geneva, World Health Organization. See http://www.ilo.org/public/english/protection/safework/cis/products/icsc/index.htm
JECFA (1996) Toxicological evaluation of certain veterinary drug residues in food prepared by the forty-seventh meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 38, Geneva, World Health Organization.
JECFA (1997) Toxicological evaluation of vertain veterinary drug residues in food prepared by the forty-eighth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 39, Geneva, World Health Organization.
JECFA (2000a) Toxicological evaluation of vertain veterinary drug residues in food prepared by the fifty-second meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 43, Geneva, World Health Organization.
JECFA (2000b) Toxicological evaluation of vertain veterinary drug residues in food prepared by the fifty-fourth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 45, Geneva, World Health Organization.
JECFA (2002) Toxicological evaluation of vertain veterinary drug residues in food prepared by the fifty-eighth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 49, Geneva, World Health Organization.
JECFA (2003) Toxicological evaluation of vertain veterinary drug residues in food prepared by the sixtieth meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA), WHO food additives series 51, Geneva, World Health Organization.
JMPR (1965a) Evaluation of the toxicity of pesticide residues in food. FAO Meeting Report, No. PL/1965/10/1; WHO/Food Add./27.65.
JMPR (1965b) Evaluation of the hazards to consumers resulting from the use of fumigants in the protection of food. FAO Meeting Report, No. PL/1965/10/2; WHO/Food Add./28.65.
JMPR (1967) Evaluation of some pesticide residues in food. FAO/PL:CP/15; WHO/Food Add./67.32.
JMPR (1969) 1968 Evaluation of some pesticide residues in food. FAO/PL:1968/M/9/1; WHO/Food Add./69.35.
JMPR (1971) 1970 Evaluations of some pesticide residues in food. AGP:1970/M/12/1; WHO/Food Add./71.42.
JMPR (1972) 1971 Evaluations of some pesticide residues in food. AGP:1971/M/9/1; WHO Pesticide Residues Series No. 1.

JMPR (1974) 1973 Evaluations of some pesticide residues in food. FAO/AGP/1973/M/9/1; WHO Pesticide Residues Series, No. 3.
JMPR (1978) Pesticide residues in food: 1977 evaluations. FAO Plant Production and Protection Paper 10 Sup.
JMPR (1979) Pesticide residues in food: 1978 evaluations. FAO Plant Production and Protection Paper 15 Sup.
JMPR (1980) Pesticide residues in food: 1979 evaluations. FAO Plant Production and Protection Paper 20 Sup.
JMPR (1982) Pesticide residues in food:1981 evaluations. FAO Plant Production and Protection Paper 42.
JMPR (1983) Pesticide residues in food: 1982 evaluations. FAO Plant Production and Protection Paper 49.
JMPR (1985a) Pesticide residues in food: 1983 evaluations. FAO Plant Production and Protection Paper 61.
JMPR (1985b) Pesticide residues in food – 1984. Report of the Joint Meeting on Pesticide Residues. FAO Plant Production and Protection Paper 62.
JMPR (1985c) Pesticide residues in food – 1984 evaluations. FAO Plant Production and Protection Paper 67.
JMPR (1986a) Pesticide residues in food – 1985. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and a WHO Expert Group on Pesticide Residues. FAO Plant Production and Protection Paper 68.
JMPR (1986b) Pesticide residues in food – 1985 evaluations. Part II – Toxicology. FAO Plant Production and Protection Paper 72/2.
JMPR (1986c) Pesticide residues in food – 1986. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and a WHO Expert Group on Pesticide Residues. FAO Plant Production and Protection Paper 77.
JMPR (1987a) Pesticide residues in food – 1986 evaluations. Part II – Toxicology. FAO Plant Production and Protection Paper 78/2.
JMPR (1987b) Pesticide residues in food – 1987. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and a WHO Expert Group on Pesticide Residues. FAO Plant Production and Protection Paper 84.
JMPR (1988) Pesticide residues in food – 1987 evaluations. Part II – Toxicology. FAO Plant Production and Protection Paper 86/2.
JMPR (1989) Pesticide residues in food – 1988 evaluations. Part II – Toxicology. FAO Plant Production and Protection Paper 93/2.
JMPR (1990) Pesticide residues in food – 1989 evaluations. Part II – Toxicology. FAO Plant Production and Protection Paper 100/2.
JMPR (1991) Pesticide residues in food – 1990 evaluations. Part II – Toxicology. World Health Organization (WHO/PCS/91.47).
JMPR (1992) Pesticide residues in food – 1991 evaluations. Part II – Toxicology. World Health Organization (WHO/PCS/92.52).
JMPR (1993) Pesticide residues in food – 1992 evaluations. Part II – Toxicology. World Health Organization (WHO/PCS/93.34).
JMPR (1994) Pesticide residues in food – 1993 evaluations. Part II – Toxicology. World Health Organization (WHO/PCS/94.4).
JMPR (1995a) Pesticide residues in food – 1994. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and a WHO Expert Group on Pesticide Residues. FAO Plant Production and Protection Paper, 127.
JMPR (1995b) Pesticide residues in food – 1994 evaluations. Part II – Toxicology. World Health Organization (WHO/PCS/95.2).

JMPR (1996a) Pesticide residues in food – 1995. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and WHO Toxicological and Environmental Core Assessment Groups. FAO Plant Production and Protection Paper, 133.
JMPR (1996b) Pesticide residues in food – 1995 evaluations. Part II – Toxicological and Environmental. Geneva, World Health Organization (WHO/PCS/96.48).
JMPR (1997a) Pesticide residues in food – 1996. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper, 140.
JMPR (1997b) Pesticide residues in food – 1996 evaluations. Part II – Toxicological and Environmental. Geneva, World Health Organization (WHO/PCS/97.1).
JMPR (1998a) Pesticide residues in food – 1997. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper, 145.
JMPR (1998b) Pesticide residues in food – 1997 evaluations. Part II – Toxicological and Environmental. Geneva, World Health Organization (WHO/PCS/98.6).
JMPR (1999) Pesticide residues in food – 1998 evaluations. Part II – Toxicological. Geneva, World Health Organization (WHO/PCS/99.18).
JMPR (2000) Pesticide residues in food – 1999 evaluations. Part II – Toxicological and Environmental. Geneva, World Health Organization (WHO/PCS/00.4).
JMPR (2001) Pesticide residues in food – 2000. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 167.
JMPR (2002) Pesticide residues in food – 2001. Joint FAO/WHO Meeting on Pesticide Residues. Evaluations 2001. Part II Toxicological. IPCS International Programme on Chemical Safety & World Health Organization, Geneva
JMPR (2003a) Pesticide residues in food – 2002. Report 2002 of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 172.
JMPR (2003b) Pesticide residues in food – 2002. Joint FAO/WHO Meeting on Pesticide Residues. Evaluations 2002. Part II Toxicological. IPCS International Programme on Chemical Safety & World Health Organization, Geneva
JMPR (2004a) Pesticide residues in food – 2003. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 176.
JMPR (2004b) Pesticide residues in food – 2003. Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. Evaluations 2003. Part II Toxicological. IPCS, World Health Organization, Geneva (WHO/PCS/04.1).
JMPR (2005a) Pesticide residues in food – 2004. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 178.
JMPR (2005b) Pesticide residues in food – 2005. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. FAO Plant Production and Protection Paper 183.
JMPR (2006a) Pesticide residues in food – 2004. Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. Evaluations 2004. Part II Toxicological. IPCS, World Health Organization, Geneva (WHO/PCS/06.1).
JMPR (2006b) Pesticide residues in food – 2005. Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. Evaluations 2005. Part II Toxicological. IPCS, World Health Organization, Geneva.
JMPR (2006c) Pesticide residues in food – 2006. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper 187.

JMPR (2007) Pesticide residues in food – 2007. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper 191.

JMPR (2008) Pesticide residues in food – 2006. Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. Evaluations 2006. Part II Toxicological. IPCS, World Health Organization, Geneva.

JMPR (2009a) Pesticide residues in food – 2008. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues. FAO Plant Production and Protection Paper 193.

JMPR (2009b) Pesticide residues in food – 2007. Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group. Evaluations 2007. Part II Toxicological. IPCS, World Health Organization, Geneva.

Larson, L.L., Kenaga, E.E. & Morgan, R.W. (1985) Commercial and experimental organic insecticides, Entomological Society of America, 4603 Calvert Road, College Park, Maryland 20740, United States of America (Rev.), 105 pp.

Pesticide Data Sheets. IPCS, Geneva, World Health Organization. See http://www.who.int/ipcs/publications/pds/en/index.html

Tomlin C, ed. The Pesticide Manual, A World Compendium (10th edition 1994). British Crop Protection Council, Thornton Heath, United Kingdom.

Tomlin C, ed. The Pesticide Manual, A World Compendium (11th edition 1997). British Crop Protection Council, Farnham, United Kingdom.

Tomlin C, ed. The Pesticide Manual, A World Compendium (13th edition 2003). British Crop Protection Council, Farnham, United Kingdom.

United Nations (1999) Recommendations on the transport of dangerous goods. Model regulations. Eleventh revised edition. United Nations, New York and Geneva. 573 pp.

United States Department of Health, Education and Welfare, Registry of Toxic effects of Chemical Substances (annual publication), Centre for Disease Control, Rockville, Maryland 20852, United States of America.

WHO (1979), Environmental Health Criteria 9; DDT and its Derivatives, Geneva, World Health Organization, 194 pp.

WHO (1980), Environmental health Criteria 15; Tin and Organotin Compounds, Geneva, World Health Organization, 109 pp.

WHO/FAO Data Sheets on Pesticides; mimeographed series of documents, WHO/PCS Nos. 1-94, Geneva, World Health Organization. available at: http://www.inchem.org/pages/pds.html

Wiswesser, W.J., Pesticide Index, (1976), College Science Publishers, Entomological Society of America, 5th Edition, College Park, Maryland 20740, United States of America.

Worthing, C.R., Hance,R.J., eds. (1991), The Pesticide Manual. A World Compendium (9th Edition). British Crop Protection Council, Surrey, United Kingdom, 1141 pp.

Table 1. Extremely hazardous (Class Ia) technical grade active ingredients in pesticides

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

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Phenylmercury acetate [ISO]	62-38-4	1674	HG	S	FST	2	24	Adjusted classification; see notes 3 and 6; ICSC 540
Phorate [ISO]	298-02-2	3018	OP	L	I	1	2	DS 75; JMPR 1997b, 2005; *ICSC 1060*
Phosphamidon	13171-21-6	3018	OP	L	I	2	7	See note 3; DS 74; ICSC 189; JMPR 1987b CAS Nos for E and Z isomers 297-99-4 and 23783-98-4
Sodium fluoroacetate [C]	62-74-8	2629		S	R	1	0.2	DS 16; *ICSC 484*
Sulfotep [ISO]	3689-24-5	1704	OP	L	I	1	5	ICSC 985
Tebupirimfos [ISO*]	96182-53-5	3018	OP	L	I	1	1.3	Extremely hazardous by skin contact (LD_{50} 9.4 mg/kg in rats)
Terbufos [ISO]	13071-79-9	3018	OP	L	I-S	1	c2	JMPR 1991, 2004

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

Notes to Class Ia

1. Calcium cyanide is in Class Ia as it reacts with moisture to produce hydrogen cyanide gas. The gas is not classified under the WHO system (see Table 8).
2. Captafol is carcinogenic in both rats and mice.
3. The international trade of captafol, hexachlorobenzene, mercury compounds, parathion, parathion-methyl, and phosphamidon is regulated by the Rotterdam convention on Prior Informed Consent (see http://www.pic.int/), which entered into force on 24 February 2004. See Table 7, p. 51
4. EPN has been reported as causing delayed neurotoxicity in hens.
5. Hexachlorobenzene has caused a serious outbreak of porphyria in humans. The use and production of hexachlorobenzene is severely restricted by the Stockholm convention on persistent organic pollutants, which entered into force on 17 May, 2004. See http://www.pops.int/
6. Phenylmercury acetate is highly toxic to mammals and very small doses have produced renal lesions: teratogenic in the rat.

THE FINAL CLASSIFICATION OF ANY PRODUCT
DEPENDS ON ITS FORMULATION
See Pages 7 & 8, and the Annex

Table 2. Highly hazardous (Class Ib) technical grade active ingredients in pesticides

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Acrolein [C]	107-02-8	1092		L	H	2	29	EHC 127; HSG 67; IARC 63; ICSC 90
Allyl alcohol [C]	107-18-6	1098		L	H	3	64	Highly irritant to skin and eyes; ICSC 95; *Adjusted classification (see note 3)*
Azinphos-ethyl [ISO]	2642-71-9	2783	OP	S	I	2	12	DS 72; JMPR 1974
Azinphos-methyl [ISO]	86-50-0	2783	OP	S	I	2	16	DS 59; ICSC 826; JMPR 1992, *2009b*
Blasticidin-S	2079-00-7	2588		S	F	2	16	
Butocarboxim [ISO]	34681-10-2	2992	C	L	I	3	158	JMPR 1986a; *Adjusted classification (see note 3)*
Butoxycarboxim [ISO]	34681-23-7	2992	C	L	I	3	D288	*Adjusted classification (see note 3)*
Cadusafos [ISO]	95465-99-9	3018	OP	L	N,I	2	37	JMPR 1992
Calcium arsenate [C]	7778-44-1	1573	AS	S	I	2	20	EHC 18, 224; IARC 84; ICSC 765; JMPR 1969
Carbofuran [ISO]	1563-66-2	2757	C	S	I	2	8	DS 56; ICSC 122; JMPR 1997b, 2003b, *2009a; See note 2.*
Chlorfenvinphos [ISO]	470-90-6	3018	OP	L	I	2	31	ICSC 1305; JMPR 1995b
3-Chloro-1,2-propanediol [C]	96-24-2	2689		L	R	3	112	*Adjusted classification (see notes 1 and 3)*
Coumaphos [ISO]	56-72-4	2783	OP	S	AC,MT	2	7.1	ICSC 422; JMPR 1991
Coumatetralyl [ISO]	5836-29-3	3027	CO	S	R	2	16	
Cyfluthrin [ISO]	*68359-37-5*		*PY*	*S*	*I*	*2*	*c15*	*JMPR 2008; See note 9, p. 8*
Beta-cyfluthrin [ISO]	*68359-37-5*		*PY*	*S*	*I*	*2*	*c11*	*JMPR 2008; See note 9, p. 8*
Zeta-cypermethrin [ISO]	52315-07-8	3352	PY	L	I	3	c86	See note 9, p. 8; HSG 22; ICSC 246; *JMPR 2008; Adjusted classification (see note 3)*
Demeton-S-methyl [ISO]	919-86-8	3018	OP	L	I	2	40	DS 61, EHC 197; ICSC 705; JMPR 1990
Dichlorvos [ISO]	62-73-7	3018	OP	L	I	3	56	Volatile, DS 2; EHC 79; HSG 18; IARC 20, 53; ICSC 690; JMPR 1994; *Adjusted classification (see note 3)*
Dicrotophos [ISO]	141-66-2	3018	OP	L	I	2	22	ICSC 872
Dinoterb [ISO]	1420-07-1	2779	NP	S	H	2	25	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
DNOC [ISO]	534-52-1	2779	NP	S	I-S,H	2	25	JMPR 1965a; EHC 220; *ICSC 462*. See note 2.
Edifenphos [ISO]	17109-49-8	3018	OP	L	F	3	150	JMPR 1982. *Adjusted classification (see note 3)*
Ethiofencarb [ISO]	29973-13-5	2992	C	L	I	3	200	JMPR 1983. *Adjusted classification (see note 3)*
Famphur	52-85-7	2783	OP	S	I	2	48	
Fenamiphos [ISO]	22224-92-6	2783	OP	S	N	2	15	DS 92; ICSC 483; JMPR 1998b, 2003b
Flucythrinate [ISO]	70124-77-5	3352	PY	L	I	3	c67	JMPR 1986b; see note 9, p.8; *Adjusted classification (see note 3)*
Fluoroacetamide [C]	640-19-7	2588		S	R	2	13	*ICSC 1434*. See note 2
Formetanate [ISO]	22259-30-9	2757	C	S	AC	2	21	
Furathiocarb	65907-30-4	2992	C	L	I-S	2	42	
Heptenophos [ISO]	23560-59-0	3018	OP	L	I	3	96	*Adjusted classification (see note 3)*
Isoxathion [ISO]	18854-04-8	3018	OP	L	I	3	112	*Adjusted classification (see note 3)*
Lead arsenate [C]	7784-40-9	1617	AS	S	L	2	c10	*EHC 18*, 224; IARC 84; ICSC 911; JMPR 1969
Mecarbam [ISO]	2595-54-2	3018	OP	Oil	I	2	36	JMPR 1987a
Mercuric oxide [ISO]	21908-53-2	1641	HG	S	O	2	18	ICSC 981; CICAD 50. See note 2
Methamidophos [ISO]	10265-92-6	2783	OP	S	I	2	30	HSG 79; ICSC 176; JMPR 1991, 2003b; See note 2
Methidathion [ISO]	950-37-8	3018	OP	L	I	2	25	JMPR 1998b; *ICSC 1659*
Methiocarb [ISO]	2032-65-7	2757	C	S	I	2	20	JMPR 1999
Methomyl [ISO]	16752-77-5	2757	C	S	I	2	17	DS 55, EHC 178; HSG 97; ICSC 177, JMPR 1989, 2002
Monocrotophos [ISO]	6923-22-4	2783	OP	S	I	2	14	See note 2; HSG 80; ICSC 181; JMPR 1996b
Nicotine [ISO]	54-11-5	1654		L		1	D50	ICSC 519
Omethoate [ISO]	1113-02-6	3018	OP	L	I	2	50	JMPR 1997a
Oxamyl [ISO]	23135-22-0	2757	C	S	I	2	6	DS 54; JMPR 1986b, 2003b
Oxydemeton-methyl [ISO]	301-12-2	3018	OP	L	I	3	65	JMPR 1990, 2003b; *Adjusted classification (see note 3)*
Paris green [C]	12002-03-8	1585	AS	S	L	2	22	Copper-arsenic complex
Pentachlorophenol [ISO]	87-86-5	3155		S	I,F,H	2	D80	See note 2; Irritant to skin; EHC 71; HSG 19; IARC 20, 53; ICSC 69

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

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

Notes to Class Ib

1. 3-Chloro-1,2-propanediol in nonlethal dosage is a sterilant for male rats. This compound is also known as alpha chlorhydrin.
2. The international trade of carbofuran, DNOC, fluoroacetamide, mercury compounds, methamidophos, monocrotophos and pentachlorophenol is regulated by the Rotterdam convention on Prior Informed Consent (see http://www.pic.int/), which entered into force on 24 February 2004. See Table 7, p. 51.
3. As a precautionary measure, the classification of certain liquid pesticides has been adjusted to avoid those pesticides being assigned to a less hazardous Class in the process of aligning the WHO Classification with the GHS. Details of how the WHO Classification has been aligned with the GHS Acute Toxicity Hazard Categories are described in the introductory notes for Part II.

THE FINAL CLASSIFICATION OF ANY PRODUCT
DEPENDS ON ITS FORMULATION
See Pages 7 & 8, and the Annex

Table 3. Moderately hazardous (Class II) technical grade active ingredients in pesticides

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Acephate [ISO]	30560-19-1		OP	S	I	4	945	JMPR 1991, 2003b, *2006b; ICSC 748*
Acifluorfen [ISO]	50594-66-6			S	H	4	1370	Strong irritant to eyes
Alachlor [ISO]	15972-60-8	2588		S	H	4	930	See note 1; DS 86; IARC 19, 36, 63; ICSC 371
Alanycarb [ISO]	83130-01-2		C	S	I	4	330	
Allethrin [ISO]	584-79-2		PY	Oil	I	4	c685	See note 9, page 8; EHC 87; HSG 24; ICSC 212; JMPR 1965a
Ametryn [ISO]	834-12-8		T	S	H	4	110	
Amitraz [ISO]	33089-61-1			S	AC	4	800	ICSC 98; JMPR 1999
Anilofos [ISO]	64249-01-0		OP	S	H	4	472	
Azaconazole	60207-31-0			S	F	4	308	
Azamethiphos [ISO]	35575-96-3		OP	S	I	4	1010	
Azocyclotin [ISO]	41083-11-8	2786	OT	S	AC	3	80	JMPR 1990, 1995b, *2006b*
Bendiocarb [ISO]	22781-23-3	2757	C	S	I	3	55	DS 52
Benfuracarb [ISO]	82560-54-1	2992	C	L	I	3	205	
Bensulide [ISO]	741-58-2	2902		L	H	3	270	ICSC 383
Bensultap [ISO]	17606-31-4			S	I	4	1100	
Bentazone [ISO]	25057-89-0			S	H	4	1100	HSG 48; ICSC 828; JMPR 1999, 2005
Bifenthrin	82657-04-3	3349	PY	S	I	3	c55	JMPR 1993
Bilanafos [ISO]	71048-99-2			S	H	3	268	
Bioallethrin [C]	584-79-2		PY	L	I	4	c700	See note 2; note 9, p. 8; ICSC 227
Bromoxynil [ISO]	1689-84-5	2588		S	H	3	190	
Bromuconazole	116255-48-2			S	F	4	365	ICSC 1264
Bronopol	52-51-7			S	B	3	254	ICSC 415
Butamifos [ISO]	36335-67-8		OP	L	H	4	630	
Butralin [ISO]	33629-47-9			S	H	4	1049	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Butroxydim [ISO]	138164-12-2			S	H	4	1635	
Butylamine [ISO]	13952-84-6	1992		L	F	4	380	Irritant to skin; ICSC 401; JMPR 1982, 1985b
Carbaryl [ISO]	63-25-2	2757	C	S	I	3	c300	DS 3; EHC 153; HSG 78; IARC 12, Suppl.7; ICSC 121; JMPR 1997b, 2002
Carbosulfan [ISO]	55285-14-8	2992	C	L	I	3	250	JMPR 1987a, 2004
Cartap [ISO]	15263-53-3			S	I	4	325	EHC 76; JMPR 1996a
Chloralose [C]	15879-93-3			S	R	4	400	
Chlordane [ISO]	57-74-9	2996	OC	L	I	4	460	See notes 3 and 4; DS 36; EHC 34; HSG 13; IARC 79; ICSC 740; JMPR 1995a
Chlorfenapyr [ISO]	122453-73-0			S	I,MT	4	441	
Chlormequat (chloride) [ISO]	999-81-5			S	PGR	4	670	ICSC 781; JMPR 2000
Chloroacetic acid [C]	79-11-8	1751		S	H	4	650	Irritant to skin and eyes; data refer to sodium salt; ICSC 235
Chlorphonium chloride [ISO]	115-78-6	2588		S	PGR	3	178	Irritant to skin and eyes
Chlorpyrifos [ISO]	2921-88-2	2783	OP	S	I	3	135	DS 18; ICSC 851; JMPR 2000
Clomazone [ISO]	81777-89-1			L	H	4	1369	
Copper hydroxide [C]	20427-59-2		CU	S	F	4	1000	
Copper oxychloride [C]	1332-40-7		CU	S	F	4	1440	
Copper sulfate [C]	7758-98-7		CU	S	F	3	300	*ICSC 751*
4-CPA [ISO]	122-88-3		PAA	S	PGR	4	850	
Cuprous oxide [C]	1317-39-1		CU	S	F	4	470	ICSC 421, EHC 200
Cyanazine [ISO]	21725-46-2		T	S	H	3	288	ICSC 391
Cyanophos [ISO]	2636-26-2		OP	L	I	4	610	
Cyhalothrin [ISO]	68085-85-8	3352	PY	Oil	Ix	3	c144	See note 9, p. 8; EHC 99; HSG 38; ICSC 858; JMPR 1985c; JECFA 2000b
Cyhexatin [ISO]	13121-70-5		OT	S	AC	3	*265*	EHC 15; JMPR 1995b, *2006b*
Cymoxanil [ISO]	57966-95-7			S	F	4	1196	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Cypermethrin [ISO]	52315-07-8	3352	PY	L	I	3	c250	See note 9, p. 8; DS 58; EHC 82; HSG 22; ICSC 246; JECFA 1996
Alpha-cypermethrin [ISO]	67375-30-8	3349	PY	S	I	3	c79	See note 9, p 8; EHC 142; JECFA 1996; *JMPR 2008*
Cyphenothrin [(1R)-isomers] [ISO]	39515-40-7	3352	PY	L	I	4	318	
Cyproconazole	94361-06-5			S	F	4	1020	
2,4-D [ISO]	94-75-7	3345	PAA	S	H	4	375	DS 37; EHC 29, 84; HSG 5; IARC 41, Suppl. 7; ICSC 33; JMPR 1998b
Dazomet [ISO]	533-74-4			S	F-S	4	640	Irritant to skin and eyes; ICSC 786
2,4-DB	94-82-6			S	H	4	700	
DDT [ISO]	50-29-3	2761	OC	S	I	3	113	See notes 3 and 4; DS 21; EHC 9, 83; IARC 53; ICSC 34; JMPR 1985c, 2001
Deltamethrin [ISO]	52918-63-5	3349	PY	S	I	3	c135	See note 9, p. 8; DS 50; EHC 97; HSG 30; IARC 53; ICSC 247; JMPR 2001
Diazinon [ISO]	333-41-5	3018	OP	L	I	4	*300*	DS 45, EHC 198; ICSC 137; JMPR 1994, 2002, *2008*
Dicamba [ISO]	1918-00-9			S	H	4	1707	ICSC 139
Dichlorobenzene [C]	106-46-7			S	FM	4	500-5000	Mixture of isomers: ortho (3) 95-50-1, meta (3) 541-73-1, para (2B) 106-46-7; *ICSC 37*
Dichlorophen [ISO]	97-23-4		OC	S	F	4	1250	
Dichlorprop [ISO]	7547-66-2			S	H	4	800	ICSC 38
Diclofop [ISO]	40483-25-2			S	H	4	565	
Dicofol [ISO]	115-32-2		OC	S	AC	4	c690	DS 81; IARC 30; ICSC 752; JMPR 1993
Difenoconazole [ISO]	119446-68-3			S	F	4	1453	*JMPR 2009b*
Difenzoquat [ISO]	43222-48-6	2588		S	H	4	470	
Dimepiperate [ISO]	61432-55-1		TC	S	H	4	946	
Dimethachlor [ISO]	50563-36-5			S	H	4	1600	
Dimethipin [ISO]	55290-64-7			S	H	4	1180	JMPR 2000, 2005

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Dimethenamid [ISO]	*87674-68-8*			*L*	*H*	*4*	*371*	*LD_{50} of P isomer is 429 mg/kg bw; JMPR 2006b*
Dimethylarsinic acid [C]	75-60-5	1572	AS	S	H	4	1350	
Dimethoate [ISO]	60-51-5	2783	OP	S	I	3	c150	DS 42; EHC 90; HSG 20; ICSC 741; JMPR 1997b, 2004
Diniconazole [ISO]	83657-24-3			S	F	4	639	
Dinobuton [ISO]	973-21-7	2779	NP	S	AC,F	3	140	
Dinocap [ISO]	39300-45-3		NP	S	AC,F	4	980	ICSC 881; JMPR 1999
Diphenamid [ISO]	957-51-7			S	H	4	970	ICSC 763
Diquat [ISO]	2764-72-9	2781	BP	S	H	3	231	Irritant to skin and eyes and damages nails; DS 40; EHC 39; HSG 52; JMPR 1994; *ICSC 1363*
Dithianon [ISO]	3347-22-6			S	F	4	640	JMPR 1993
Dodine [ISO]	2439-10-3			S	F	4	1000	JMPR 2001
Endosulfan [ISO]	115-29-7	2761	OC	S	I	3	80	DS 15; EHC 40; HSG 17; ICSC 742; JMPR 1999
Endothal-sodium [(ISO)]	125-67-9	2588		S	H	3	51	
EPTC [ISO]	759-94-4		TC	L	H	4	1652	ICSC 469
Esfenvalerate [ISO]	66230-04-4	3349	PY	S	I	3	87	JMPR 2003b; *ICSC 1516*
Ethion [ISO]	563-12-2	3018	OP	L	I	3	208	ICSC 888; JMPR 1991
Fenazaquin [ISO]	120928-09-8	2588		S	AC	3	134	
Fenitrothion [ISO]	122-14-5		OP	L	I	4	503	DS 30; EHC 133; HSG 65; ICSC 622; JMPR 2001
Fenobucarb	3766-81-2		C	S	I	4	620	
Fenothiocarb [ISO]	62850-32-2		C	S	L	4	1150	
Fenpropidin [ISO]	67306-00-7			L	F	4	1440	
Fenpropathrin [ISO]	64257-84-7	3349	PY	S	I	3	c66	See note 9, p. 8; JMPR 1994
Fenpyroximate [ISO]	*134098-61-6*			*S*	*AC*	*3*	*245*	*Highly toxic by inhalation (LC_{50} = 0.21-0.36 mg/l); JMPR 2007*
Fenthion [ISO]	55-38-9	3018	OP	L	I,L	3	D586	DS 23; ICSC 655; JMPR 1998b
Fentin acetate[(ISO)]	900-95-8	2786	OT	S	F	3	125	DS 22; EHC 15; JMPR 1992; CICAD 13

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Fentin hydroxide[(ISO)]	76-87-9	2786	OT	S	F	3	108	DS 22; EHC 15; ICSC 1283; JMPR 1992; *CICAD 13*
Fenvalerate [ISO]	51630-58-1	3352	PY	L	I	4	c450	See note 9, p. 8; DS 90; EHC 95, HSG 34; IARC 53; ICSC 273; JMPR 1986c
Ferimzone [ISO]	89269-64-7			S	F	4	725	
Fipronil	120068-37-3	2588		S	I	3	92	JMPR 1998b, 2001; *ICSC 1503*
Fluchloralin [ISO]	33245-39-5			S	H	4	1550	
Flufenacet [ISO]	142459-58-3			S	H	4	600	May cause skin sensitization
Fluoroglycofen	77501-60-1			S	H	4	1550	
Flurprimidol [ISO]	56425-91-3			S	PGR	4	709	
Flusilazole	85509-19-9			S	F	4	*672*	JMPR 1996b, *2009b*
Flutriafol [ISO]	76674-21-0			S	F,FST	4	1140	
Fluxofenim [ISO]	88485-37-4			oil	H	4	670	
Fomesafen [ISO]	72178-02-0		OC	S	H	4	1250	
Fuberidazole [ISO]	3878-19-1			S	F	4	336	
Furalaxyl [ISO]	57646-30-7			S	F	4	940	
Gamma-HCH [ISO], Lindane	58-89-9	2761	OC	S	I	3	88	*ICSC 53*; JMPR 2003b; See note 3
Glufosinate [ISO]	53369-07-6			S	H	4	1625	JMPR 2000
Guazatine	108173-90-6			S	FST	3	230	LD_{50} value refers to triacetate; JMPR 1998b
Haloxyfop	69806-34-4			S	H	4	*300*	JMPR 1996b, *2008 (includes Haloxyfop-R and esters)*
HCH [ISO]	608-73-1	2761	OC	S	I	3	100	See notes 3, 4 and 5; EHC 123; IARC 5, 20, 42; ICSC 487; JMPR 1974
Hexazinone [ISO]	51235-04-2			S	H	4	1690	
Hydramethylnon	67485-29-4			S	I	4	1200	
Imazalil [ISO]	35554-44-0	2588		S	F	3	*227*	ICSC 1303; JMPR 2001, 2002, *2006b*
Imidacloprid [ISO]	138261-41-3			S	I	4	450	JMPR 2002; *ICSC 1501*

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Iminoctadine [ISO]	13516-27-3			S	F	3	300	Eye irritant
Indoxacarb [ISO]	*173584-44-6*			*S*	*I*	*3*	*268*	*JMPR 2006b; LD_{50} applies to 3:1 mixture of isomers in commercial use*
Ioxynil [ISO]	1689-83-4	2588		S	H	3	110	ICSC 900
Ioxynil octanoate [(ISO)]	3861-47-0			S	H	4	390	
Iprobenfos	26087-47-8			S	F	4	600	
Isoprocarb [ISO]	2631-40-5	2757	C	S	I	4	403	
Isoprothiolane [ISO]	50512-35-1			S	F	4	1190	
Isoproturon [ISO]	34123-59-6			S	H	4	1800	
Isouron [ISO]	55861-78-4			S	H	4	630	
Lambda-cyhalothrin	2164-08-1	3349	PY	S	I	3	c56	See note 9, p. 8; EHC 142; HSG 38; *JMPR 2009b; ICSC 859*
MCPA [ISO]	94-74-6		PAA	S	H	4	700	IARC 30, 41; ICSC 54
MCPA-thioethyl [ISO]	25319-90-8		PAA	S	H	4	790	
MCPB [ISO]	94-81-5			S	H	4	680	
Mecoprop [ISO]	7085-19-0			S	H	4	930	ICSC 55
Mecoprop-P [ISO]	16484-77-8			S	H	4	1050	
Mefluidide [ISO]	53780-34-0			S	H	4	1920	
Mepiquat [ISO]	15302-91-7			S	PGR	4	1490	
Mercurous chloride [C]	10112-91-1	2025	HG	S	F	3	210	See note 3; ICSC 984; *CICAD 50*
Metalaxyl [ISO]	57837-19-1			S	F	4	670	JMPR 1983, 2003b
Metaldehyde [ISO]	108-62-3			S	M	3	227	DS 93
Metamitron [ISO]	41394-05-2			S	H	4	1183	*ICSC 1361*
Metam-sodium [(ISO)]	137-42-8	2771		S	F-S	3	285	
Metconazole [ISO]	125116-23-6			S	F	4	660	
Methacrifos [ISO]	62610-77-9		OP	L	I	4	678	JMPR 1991

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Methasulfocarb [ISO]	66952-49-6	2757		S	F	3	112	
Methylarsonic acid [ISO]	124-58-3		AS	S	H	4	1800	ICSC 755; EHC 224
Methyl isothiocyanate [ISO]	556-61-6	2588		S	F-S	3	72	Skin and eye irritant; see note 6
Metolcarb [ISO]	1129-41-5		C	S	I	3	268	
Metribuzin [ISO]	21087-64-9			S	H	4	322	*ICSC 516*
Molinate [ISO]	2212-67-1		TC	L	H	4	720	
Myclobutanil	88671-89-0			S	F	4	1600	JMPR 1993
Nabam [ISO]	142-59-6	2771		S	F	4	395	Goitrogenic in rats
Naled [ISO]	300-76-5	3018	OP	L	I	4	430	DS 39; ICSC 925
2-Napthyloxyacetic acid [ISO]	120-23-0			S	PGR	4	600	
Nitrapyrin [ISO]	1929-82-4			S	B-S	4	1072	*ICSC 1658*
Nuarimol [ISO]	63284-71-9			S	F	4	1250	
Octhilinone [ISO]	26530-20-1			S	F	4	1470	
Oxadixyl	77732-09-3			S	F	4	1860	
Paclobutrazol [ISO]	76738-62-0			S	PGR	4	1300	JMPR 1989
Paraquat [ISO]	1910-42-5	2781	BP	S	H	3	150	See note 7; DS 4; EHC 39; HSG 51; ICSC 5; JMPR 1987a, 2004
Pebulate [ISO]	1114-71-2		TC	L	H	4	1120	
Pendimethalin [ISO]	40487-42-1			S	H	4	1050	
Permethrin [ISO]	52645-53-1	3352	PY	L	I	4	c500	See note 9, p. 8; DS 51; EHC 94; HSG 33; IARC 53; ICSC 312; JMPR 2000
Phenthoate [ISO]	2597-03-7	3018	OP	L	I	4	c400	DS 48; JMPR 1985c
Phosalone [ISO]	2310-17-0	2783	OP	S	I	3	120	ICSC 797; JMPR 1998b, 2002
Phosmet [ISO]	732-11-6	2783	OP	S	I,AC	3	113	ICSC 543; JMPR 1999, 2004
Phoxim [ISO]	14816-18-3		OP	L	I	4	D1975	DS 31; JECFA 2000a
Piperophos [ISO]	24151-93-7	3018	OP	oil	H	4	324	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Pirimicarb [ISO]	23103-98-2	2757	C	S	AP	3	147	JMPR 1983, 2005
Pirimiphos-methyl [ISO]	29232-93-7		OP	L	I	4	*1667*	DS 49; JMPR 1993, *2008*
Prallethrin [ISO]	23031-36-9	3352	PY	oil	I	4	460	
Prochloraz [ISO]	67747-09-5			S	F	4	1600	JMPR 1985a
Profenofos [ISO]	41198-08-7	3018	OP	L	I	4	358	JMPR 1991, 2008
Propachlor [ISO]	1918-16-7			S	H	4	1500	DS 78; EHC 147; HSG 77; JMPR 2002
Propanil [ISO]	709-98-8			S	H	4	c1400	ICSC 552
Propiconazole [ISO]	60207-90-1			L	F	4	1520	JMPR 1988, 2005
Propoxur [ISO]	114-26-1	2757	C	S	I	3	95	DS 25; ICSC 191; JMPR 1990
Prosulfocarb [ISO]	52888-80-9		TC	L	H	4	1820	
Prothiofos [ISO]	34643-46-4		OP	L	I	4	925	
Pyraclofos [ISO]	77458-01-6	3018	OP	L	I	3	237	
Pyrazophos [ISO]	13457-18-6	2784		S	F	4	435	JMPR 1993
Pyrazoxyfen [ISO]	71561-11-0			S	H	4	1644	
Pyrethrins [C]	8003-34-7			L	I	4	500-1000	See note 8; DS 11; JMPR 2000, 2004; *ICSC 1475*
Pyridaben [ISO]	96489-71-3			S	AC	4	820	
Pyridaphenthion	119-12-0		OP	S	I	4	769	
Pyroquilon [ISO]	57369-32-1			S	F	4	320	
Quinalphos [ISO]	13593-03-8	2783	OP	S	I	3	62	
Quinoclamine [ISO]	2797-51-5			S	H	4	1360	
Quizalofop	76578-12-6			S	H	4	1670	
Quizalofop-p-tefuryl [ISO]	119738-06-6			L	H	4	1012	
Rotenone [C]	83-79-4	2588		S	I	3	132-1500	See note 9; HSG 73; ICSC 944
Simetryn [ISO]	1014-70-6		T	S	H	4	1830	
Sodium chlorate [ISO]	7775-09-9	1495		S	H	4	1200	ICSC 1117

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Spiroxamine [ISO]	118134-30-8			L	F	4	500	Dermal LD_{50} 1068 mg/kg; may cause skin sensitisation
Sulfluramid [ISO]	4151-50-2			S	I	4	543	
2,3,6-TBA [ISO]	50-31-7			S	H	4	1500	
TCA [ISO] (acid)	76-03-9	1839		S		4	400	See note 5 to Table 4, p. 38; ICSC 586
Tebuconazole [ISO]	107534-96-3			S	F	4	1700	JMPR 1995b
Tebufenpyrad [ISO]	119168-77-3			S	MT	4	595	
Tebuthiuron [ISO]	34014-18-1			S	H	4	644	
Terbumeton [ISO]	33693-04-8		T	S	H	4	483	
Tetraconazole [ISO]	112281-77-3			Oil	F	4	1031	
Thiacloprid	111988-49-9		S	I		4	*396*	*JMPR 2008*
Thiobencarb [ISO]	28249-77-6		TC	L	H	4	1300	
Thiocyclam [ISO]	31895-22-4			S	I	4	310	
Thiodicarb [ISO]	59669-26-0	2757	C	S	I	3	66	JMPR 2001
Thiram [ISO]	137-26-8			S	F	4	560	DS 71; EHC 78; IARC 12, 53; ICSC 757; JMPR 1993; See note 3
Tralkoxydim [ISO]	87820-88-0			S	H	4	934	
Tralomethrin	66841-25-6	3349	PY	S	I	3	c85	
Triadimefon [ISO]	43121-43-3			S	F	4	602	JMPR 1986b, 2005
Triadimenol [ISO]	55219-65-3			S	FST	4	900	JMPR 1990, 2005
Triazamate [ISO]	112143-82-5	2588		S	AP	3	50-100	
Trichlorfon [ISO]	52-68-6		OP	S	I	3	250	DS 27; EHC 132; HSG 66; IARC 30, Suppl 7; ICSC 585; JMPR 1979; JECFA 2000b, 2003
Triclopyr [ISO]	55335-06-3			S	H	4	710	
Tricyclazole [ISO]	41814-78-2			S	F	4	305	
Tridemorph [ISO]	81412-43-3			Oil	F	4	650	
Triflumizole	99387-89-0			S	F	4	695	ICSC 1252

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Uniconazole [ISO]	83657-22-1			S	PGR	4	1790	
XMC	2655-14-3		C	S	I	4	542	
Xylylcarb	2425-10-7		C	S	I	4	380	
Ziram [ISO]	137-30-4			S	F	4	1400	Irritant to skin; DS 73; EHC 78; IARC 12, 53; ICSC 348; JMPR 1997b

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

Notes to Class II

1. Alachlor was previously classified as a Class Ia pesticide due to its carcinogenicity in rats. However mechanistic studies have indicated that tumors are induced by a mechanism not relevant to humans.
2. Bioallethrin, esbiothrin, esbiol, and esdepalléthrine are members of a series; their toxicity varies considerably within this series, according to concentrations of isomers.
3. The international trade of chlordane, DDT, Gamma-HCH (lindane), HCH, mercury compounds and thiram is regulated by the Rotterdam convention on Prior Informed Consent (see http://www.pic.int/), which entered into force on 24 February 2004. See Table 7, p. 51.
4. The production and use of chlordane, DDT, *Gamma-HCH (lindane) and HCH (specifically alpha-HCH and beta-HCH)* are strictly limited by the Stockholm convention on persistent organic pollutants, which entered into force on 17 May, 2004 *and has subsequently been amended*. See http://www.pops.int/.
5. HCH: The LD_{50} varies according to the mixture of isomers. The value shown has been chosen, and the technical product placed in Class II, as a result of the cumulative properties of the beta isomer.
6. The melting point of methyl isothiocyanate (S) is 35°C.
7. Paraquat has serious delayed effects if absorbed. It is of relatively low hazard in normal use but may be fatal if the concentrated product is taken by mouth or spread on the skin.
8. Mixture of compounds present in *Pyrethrum cineraefolium* and other flowers.
9. Compounds from roots of *Derris* and *Lonchocarpus* spp.

THE FINAL CLASSIFICATION OF ANY PRODUCT
DEPENDS ON ITS FORMULATION
See Pages 7 & 8, and the Annex

Table 4. Slightly hazardous (Class III) technical grade active ingredients in pesticides

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Acetochlor [ISO]	34256-82-1			L	H	5	2950	
Alloxydim	55634-91-8			S	H	5	2260	
Ammonium sulfamate	7773-06-0			S	H	5	3900	
Ancymidol [ISO]	12771-68-5			S	PGR	5	4500	
Asulam [ISO]	3337-71-1			S	H	5	4000	
Atrazine [ISO]	1912-24-9		T	S	H	4	c2000	DS 82; HSG 47; IARC 53; ICSC 99
Bacillus thuringiensis (Bt)	68038-71-1			S	I	5	>4000	EHC 217
Benalaxyl [ISO]	71626-11-4			S	F	5	4200	JMPR 1988, 2006
Benazolin [ISO]	3813-05-6			S	H	5	3200	Irritant to skin and eyes
Benfuresate	68505-69-1			S	H	5	2031	
Biphenyl	92-52-4			S	F	5	3280	ICSC 106
Bispyribac	125401-75-4			S	H	5	2635	
Borax [ISO]	1303-96-4			S	F	5	4500	ICSC 567
Bupirimate [ISO]	41483-43-6			S	F	5	c4000	
Buprofezin [ISO]	69327-76-0			S	I	5	2200	JMPR 1992
Butachlor	23184-66-9			L	H	5	3300	
Butylate [ISO]	2008-41-5		TC	L	F	5	>4000	
Carboxin [ISO]	5234-68-4			S	FST	5	3820	
Chinomethionat [ISO]	2439-01-2			S	AC,F	5	2500	JMPR 1988
Chloridazon [ISO]	1698-60-8			S	H	5	2420	
Chlorimuron	99283-00-8			S	H	5	4102	
Chlorpyrifos methyl [ISO]	5598-13-0		OP	S	I	5	>3000	DS 33; JMPR 1993
Chlorthal-dimethyl [ISO]	1861-32-1			S	H	5	>3000	
Chlozolinate	84332-86-5			S	F	5	>4000	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Cinmethylin	87818-31-3			L	H	5	3960	
Clofentezine [ISO]	74115-24-5			S	AC	5	*>3200*	JMPR 1987a, *2006b*
Clopyralid	57754-85-5			S	H	5	4300	Severe irritant to eyes; *ICSC 443*
Cycloate [ISO]	1134-23-2		TC	L	H	4	>2000	
Cycloxydim	101205-02-1			S	H	5	3900	JMPR 1993
Cyromazine	66215-27-8			S	L	5	3300	JMPR 1991
Diafenthiuron [ISO]	80060-09-9			S	AC	5	2068	
Dichlobenil [ISO]	1194-65-6			S	H	5	3160	ICSC 867
Dichlormid	37764-25-3			L	H	5	2080	
Dicloran	99-30-9			S	F	5	4000	ICSC 871; JMPR 1999
Diethyltoluamide [ISO]	134-62-3			L	RP (insect)	4	c2000	DS 80
Diflubenzuron	35367-38-5			S	L	5	>4640	DS 77, EHC 184; HSG 99; JMPR 2002
Diflufenican [ISO]	83164-33-4			S	H	4	>2000	
Dimefuron [ISO]	34205-21-5			S	H	4	>2000	
Dimethametryn [ISO]	22936-75-0		T	L	H	5	3000	
Dimethirimol	5221-53-4			S	F	5	2350	
Dimethomorph [ISO]	110488-70-5			S	F	5	*3500*	*JMPR 2009b*
Dinitramine [ISO]	29091-05-2			S	H	5	3000	
Diuron [ISO]	330-54-1			S	H	5	3400	
Dodemorph [ISO]	1593-77-7			L	H	5	4500	
Empenthrin [(1R) isomers] [ISO]	54406-48-3		PY	Oil	I	5	>2280	
Esprocarb [ISO]	85785-20-2		TC	L	H	4	>2000	Skin and eye irritant
Ethephon	16672-87-0			S	PGR	5	>4000	JMPR 2004; 2003b
Etridiazole [ISO]	2593-15-9			L	F	4	2000	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Fenarimol [ISO]	60168-88-9			S	F	5	2500	JMPR 1996b
Fenbuconazole	114369-43-6			S	F	4	>2000	JMPR 1998
Fenbutatin oxide [ISO]	13356-08-6		OT	S	MT	5	2630	EHC 15; JMPR 1993
Fenpropimorph	67564-91-4			oil	F	5	3515	JMPR 1995b, 2002, 2005
Flamprop-M	90134-59-1			S	F	5	>3000	
Fluazifop-p-butyl [ISO]	83066-88-0			L	H	5	2451	
Flufenoxuron	101463-69-8			S	I	5	>3000	
Flurochloridone	61213-25-0			S	H	5	4000	
tau-Fluvalinate	102851-06-9		PY	oil	I	5	>3000	Skin and eye irritant
Fosamine [ISO]	25954-13-6		OP	S	H	5	2400	
Glyphosate [ISO]	1071-83-6			S	H	5	4230	EHC 159, DS 91; ICSC 160; JMPR 1987a
Halofenozide	112226-61-6			S	I	5	2850	
Hexaconazole	79983-71-4			S	F	5	2180	JMPR 1991
Hymexazol	10004-44-1			S	FST	5	3900	
Iprodione [ISO]	36734-19-7			S	F	5	3500	JMPR 1996b
Linuron [ISO]	330-55-2			S	H	5	4000	ICSC 1300
Malathion [ISO]	121-75-5	3082	OP	L	I	5	c2100	See note 1; DS 29; IARC 30; ICSC 172; JMPR 1998b, 2004
Metazachlor	67129-08-2			S	H	5	2150	
Methabenzthiazuron [ISO]	18691-97-9			S	H	5	>2500	
Methyldymron	42609-73-4			S	H	5	3948	
Metobromuron [ISO]	3060-89-7			S	H	5	2500	
Metolachlor [ISO]	51218-45-2			L	H	5	2780	*ICSC 1360*
Metoxuron	19937-59-8			S	H	5	>3200	
Monolinuron	1746-81-2			S	H	5	2250	ICSC 1273

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
1-Naphthylacetic acid	86-87-3			S	PGR	5	c3000	
N-octylbicycloheptene dicarboximide [C]	113-48-4			L	SY	5	2800	
Ofurace	58810-48-3			S	F	5	2600	
Oxycarboxin [ISO]	5259-88-1			S	F	4	2000	
Penconazole	66246-88-6			S	F	5	2120	JMPR 1993
2-Phenylphenol [C]	90-43-7			S	F	5	2480	ICSC 669; IARC 30; JMPR 2000
Pimaricin	7681-93-8			S	F	5	2730	See note 2
Probenazole	27605-76-1			S	F	5	2030	
Prometon [ISO]	1610-18-0		T	S	H	5	2980	
Prometryn [ISO]	7287-19-6		T	S	H	5	3150	
Propargite [ISO]	2312-35-8			L	AC	5	2200	JMPR 2000
Pyridate [ISO]	55512-33-9			S	H	5	c2000	
Pyrifenox [ISO]	88283-41-4			L	F	4	2900	
Pyrimethanil [ISO]	53112-28-0			S	F	5	4150	*JMPR 2009b*
Pyrithiobac sodium [ISO]	123343-16-8			S	H	5	3200	
Quinclorac	84087-01-4			S	H	5	2680	
Resmethrin [ISO]	10453-86-8		PY	S	I	4	2000	See note 3; EHC 92, DS 83, HSG 25; ICSC 324
Sethoxydim [ISO]	74051-80-2			L	H	5	3200	
Spinosad [ISO]	168316-95-8			S	I	5	3738	For Spinosyn A and D, CAS numbers are 131929-60-7 and 131929-63-0; JMPR 2002; *ICSC 1502*
Spirotetramat [ISO]	203313-25-1			*S*	*I*	4	*>2000*	*JMPR 2009a*
Sulphur	7704-34-9	1350		S	F,I	5	>3000	Skin and mucous membrane irritant. See note 4; ICSC 1166
TCA (sodium salt) [ISO]	650-51-1			S	H	5	3200	*ICSC 1139*; Irritant to skin and eyes: see note 5
Temephos [ISO]	3383-96-8		OP	L	I	5	*4000*	DS 8; ICSC 199; *JMPR 2008*

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Terbuthylazine [ISO]	5915-41-3		T	S	H	5	2160	
Terbutryn [ISO]	886-50-0		T	S	H	5	2400	
Tetrachlorvinphos [ISO]	22248-79-9		OP	S	I	5	4000	
Thiabendazole [ISO]	148-79-8			S	F	5	3330	JECFA 1997, 2002
Thidiazuron	51707-55-2			S	PGR	5	>4000	
Tri-allate [ISO]	2303-17-5		TC	L	H	5	2165	HSG 89; ICSC 201
Trietazine [ISO]	1912-26-1		T	S	H	5	2830	ICSC 202
Triticonazole [ISO]	131983-72-7			S	F	4	>2000	
Undecan-2-one [C]	112-12-9			Oil	RP, (dogs,cats)	5	2500	

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

Notes to Class III

1. Malathion: LD_{50} value can vary according to impurities. This value has been adopted for classification purposes and is that of a technical product conforming to WHO specifications.
2. Pimaricin: antibiotic, identical with tennecetin and natamycin.
3. Resmethrin is a mixture of isomers, the trans isomer (70-80%) also being known as bioresmethrin and the cis isomer (20-30%) as cismethrin. Bioresmethrin alone is of much lower toxicity (oral LD_{50} >7000 mg/kg) and is the subject of DS 34. It appears in Table 5.
4. Sulphur dust can spontaneously ignite unless diluted about 50% with inert material.
5. TCA: The data shown refer to sodium trichloroacetic acid. In many countries, the same term (TCA) refers to the free acid (now accepted by ISO): this is a solid with an oral LD_{50} of 400 mg/kg bw and if used as a pesticide would be placed in Class II. It is highly corrosive to skin.

THE FINAL CLASSIFICATION OF ANY PRODUCT
DEPENDS ON ITS FORMULATION
See Pages 7 & 8, and the Annex

Table 5. Technical grade active ingredients of pesticides unlikely to present acute hazard in normal use

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Aclonifen	74070-46-5			S	H	5	>5000	
Acrinathrin [ISO]	101007-06-1		PY	S	MT	5	>5000	
Aminopyralid [ISO]	*150114-71-9*			*S*	*H*	5	*>5000*	*JMPR 2009b*
Amitrole [ISO]	61-82-5			S	H	5	5000	EHC 158, DS 79; HSG 85; IARC 79; ICSC 631; JMPR 1998b
Anthraquinone	84-65-1			S	RP (birds)	5	>5000	*ICSC 1605*
Azimsulfuron [ISO]	120162-55-2			S	H	5	>5000	
Azoxystrobin [ISO]	131860-33-8			S	F	5	>5000	*JMPR 2009a*
Benfluralin [ISO]	1861-40-1			S	H	5	>10000	
Benomyl [ISO]	17804-35-2			S	F	5	>10000	EHC 148, DS 87; HSG 81; ICSC 382; JMPR 1996b. *See note 1*
Benoxacor [ISO]	98730-04-2			S	H	5	>5000	This molecule is not an active substance as such but is a “safener”
Bensulfuron-methyl	83055-99-6			S	H	5	>5000	
Bifenazate [ISO]	*149877-41-8*			*S*	*AC*	5	*>5000*	*JMPR 2008*
Bifenox [ISO]	42576-02-3			S	H	5	>6400	
Bioresmethrin [ISO]	28434-01-7		PY	L	I	5	>7000	DS 34; EHC 92; HSG 25; ICSC 229; JMPR 1992
Bitertanol	55179-31-2			S	F	5	>5000	JMPR 1999
Boscalid [ISO]	*188425-85-6*			*S*	*F*	5	*>5000*	*JMPR 2008*
Bromacil [ISO]	314-40-9			S	H	5	5200	*ICSC 1448*
Bromobutide	74712-19-9			S	H	5	>5000	
Bromopropylate [ISO]	18181-80-1			S	AC	5	>5000	JMPR 1994
Captan [ISO]	133-06-2			S	F	5	9000	Irritant to skin; DS 9; HSG 50; IARC 30, Suppl 7; ICSC 120; JMPR 1996b, 2005

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Carbendazim [ISO]	10605-21-7			S	F	5	>10000	DS 89; EHC 149; HSG 82; ICSC 1277; JMPR 1996b, *2006b*
Carbetamide [ISO]	16118-49-3		C	S	H	5	>10000	
Carpropamid [ISO]	104030-54-8			L	F	5	>5000	
Chloransulam methyl	14750-35-4			S	H	5	>5000	
Chlorantraniliprole [ISO]	*500008-45-7*			*S*	*I*	5	*>5000*	*JMPR 2009a*
Chlorfluazuron	71422-67-8			S	IGR	5	8500	
Chlorothalonil [ISO]	1897-45-6			S	F	5	>10000	EHC 183; HSG 98; IARC 30; ICSC 134; JMPR 1993
Chlorotoluron [ISO]	15545-48-9			S	H	5	>10000	*ICSC 1327*
Chlorpropham [ISO]	101-21-3		C	S	PGR	5	>5000	IARC 12; JMPR 2001; *ICSC 1500*
Chlorsulfuron	64902-72-3			S	H	5	5545	
Cinosulfuron [ISO]	94593-91-6			S	H	5	>5000	
Clomeprop	84496-56-0			S	H	5	>5000	
Cloxyfonac	32791-87-0		PAA	S	PGR	5	>5000	
Cryolite [C]	15096-52-3			S	I	5	>10000	
Cycloprothrin	63935-38-6		PY	L	I	5	>5000	
Cyclosulfamuron [ISO(*)]	136849-15-5			S	H	5	>5000	
Cyhalofop [ISO]	122008-85-9			S	H	5	>5000	
Daimuron	42609-52-9			S	H	5	>5000	
Dalapon	75-99-0			S	H	5	9330	
Daminozide [ISO]	1596-84-5			S	H	5	8400	JMPR 1993
Desmedipham [ISO]	13684-56-5			S	H	5	>9600	
Dichlofluanid [ISO]	1085-98-9			S	F	5	>5000	JMPR 1985a
Diclomezine	62865-36-5			S	F	5	>10000	
Diclosulam [ISO]	145701-21-9			S	H	5	>5000	
Diethofencarb	87130-20-9			S	F	5	>5000	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Dikegulac [ISO]	18467-77-1			S	PGR	5	>10000	
Dimethomorph [ISO]	110488-70-5			S	F	5	>5000	
Dimethyl phthalate [C]	131-11-3			L	RP (insect)	5	8200	ICSC 261
Dipropyl isocinchomerate [C]	3737-22-2			L	RP (fly)	5	5230	
Dithiopyr [ISO]	97886-45-8			S	H	5	>5000	
Ethalfluralin [ISO]	55283-68-6			S	H	5	>10000	
Ethirimol [ISO]	23947-60-6			S	FST	5	6340	
Ethofumesate [ISO]	26225-79-6			S	H	5	>6400	
Ethyl butylacetylaminopropionate	52304-36-6			L	RP (insect)	5	>5000	
Etofenprox	80844-07-1			S	I	5	>10000	JMPR 1994
Famoxadone [ISO(*)]	131807-57-3			S	F	5	>5000	JMPR 2004
Fenchlorazole [ISO]	103112-35-2			S	H	5	>5000	
Fenclorim	3740-92-9			S	H	5	>5000	
Fenfuram [ISO]	24691-80-3			S	FST	5	>10000	
Fenhexamid [ISO]	126833-17-8			S	F	5	>5000	*JMPR 2006b*
Fenoxycarb	79127-80-3		C	S	I	5	>10000	
Fenpiclonil	74738-17-3			S	FST	5	>5000	
Ferbam [ISO]	14484-64-1			S	F	5	>10000	DS 94; EHC 78; IARC 12, 42; ICSC 792; JMPR 1997b
Florasulam	145701-23-1			S	H	5	>5000	
Flucarbazone-sodium	181274-17-9			S	H	5	> 5000	
Flucycloxuron [ISO]	94050-52-9			S	AC	5	>5000	
Fludioxonil [ISO]	*131341-86-1*			*S*	*F*	5	>5000	*JMPR 2006a*
Flumetralin	62924-70-3			S	PGR	5	>5000	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Flumetsulam [ISO]	98967-40-9			S	H	5	>5000	
Fluometuron [ISO]	2164-17-2			S	H	5	>8000	
Flupropanate	756-09-2			S	H	5	>10000	
Flupyrsulfuron [ISO]	144740-54-5			S	H	5	>5000	
Flurenol [ISO]	467-69-6			S	PGR	5	>5000	
Fluridone [ISO]	59756-60-4			S	H	5	>10000	
Fluroxypyr	69377-81-7			S	H	5	>5000	
Fluthiacet	149253-65-6			S	H	5	>5000	
Flutolanil	66332-96-5			S	F	5	>10000	ICSC 1265; JMPR 2003b
Folpet	133-07-3			S	F	5	>10000	HSG 72; ICSC 156; JMPR 1996b
Fosetyl	15845-66-2			S	F	5	5800	
Gibberellic acid	77-06-5			S	PGR	5	>10000	
Hexaflumuron [ISO]	86479-06-3			S	I	5	>5000	ICSC 1266
Hexythiazox	78587-05-0			S	AC	5	>5000	JMPR 1992, *2009a*
Hydroprene [ISO]	41205-09-8			L	IGR	5	>10000	
2-Hydroxyethyl octyl sulphide [C]	3547-33-9			L	RP (insect)	5	8530	
Imazamethabenzmethyl [(ISO)]	81405-85-8			S	H	5	>5000	
Imazapyr	81334-34-1			S	H	5	>5000	Irritant to eyes
Imazaquin	81335-37-7			S	H	5	>5000	
Imazethapyr	81335-77-5			S	H	5	>5000	
Imibenconazole [ISO]	86598-92-7			S	F	5	>5000	
Inabenfide	82211-24-3			S	PGR	5	>10000	
Iprovalicarb	140923-17-7			S	F	5	>5000	
Isoxaben	82558-50-7			S	H	5	>10000	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Kasugamycin	19408-46-9			S	F	5	>10000	
Lenacil [ISO]	2164-08-1			S	H	5	>10000	
Maleic hydrazide [C]	123-33-1			S	PGR	5	6950	IARC 4, 42; JMPR 1997b CAS10071-13-3
Mancozeb	8018-01-7			S	F	5	>8000	Irritant to skin on multiple exposure; DS 94; EHC 78; ICSC 754; JMPR 1994
Mandipropamid [ISO]	*374726-62-2*			*S*	*F*	5	*>5000*	*JMPR 2009a*
Maneb [ISO]	12427-38-2			S	F	5	6750	Irritant to skin on multiple exposure; DS 94; EHC 78; ICSC 173; JMPR 1994
Mefenacet	73250-68-7			S	H	5	>5000	
Mepanipyrim [ISO]	110235-47-7			S	F	5	>5000	
Mepronil [ISO]	55814-41-0			S	F	5	>10000	
Methoprene [ISO]	40596-69-8			L	IGR	5	>10000	DS 47; JMPR 1987b, 2002
Methoxychlor [ISO]	72-43-5		OC	S	I	5	6000	DS 28; IARC 5, 20; ICSC 1306; JMPR 1978
Methozyfenozide	161050-58-4			S	I	5	>5000	Dermal LD_{50} > 5000; JMPR 2004
Metiram	9006-42-2			S	F	5	>10000	JMPR 1994
Metosulam	139528-85-1			S	H	5	>5000	
Metsulfuron methyl	74223-64-6			S	H	5	>5000	
2-(1-Naphthyl) acetamide	86-86-2			S	PGR	5	6400	
Napropamide	15299-99-7			S	H	5	5000	
Naptalam	132-66-1			S	PGR	5	8200	
Neburon [ISO]	555-37-3			S	H	5	>10000	
Niclosamide [ISO]	50-65-7			S	M	5	5000	DS 63
Nicosulfuron [ISO]	111991-09-4			S	H	5	>5000	Irritant to eyes
Nitrothal-isopropyl [ISO]	10552-74-6			S	F	5	6400	
Norflurazon [ISO]	27314-13-2			S	H	5	>8000	
Novaluron [ISO]	*116714-46-6*			*S*	*I*	5	*>5000*	*JMPR 2006b*

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Noviflumuron	121451-02-3			S	I	5	>5000	Dermal LD_{50} > 5000
Oryzalin [ISO]	19044-88-3			S	H	5	>10000	
Oxabetrinil	74782-23-3			S	H	5	>5000	
Oxadiazon [ISO]	19666-30-9			S	H	5	>8000	
Oxine-copper [ISO]	10380-28-6		CU	S	F	5	7792	
Oxyfluorfen [ISO]	42874-03-3			S	H	5	>5000	
Pencycuron	66063-05-6			S	F	5	>5000	
Penoxsulam	219714-96-2			S	H	5	>5000	Dermal LD_{50} > 5000
Pentanochlor	2307-68-8			S	H	5	>10000	
Phenmedipham [ISO]	13684-63-4			S	H	5	>8000	
Phenothrin [ISO]	26002-80-2		PY	L	I	5	>5000	DS 85; EHC 96; HSG 32; ICSC 313; JMPR 1989
Phosphorus acid [C]	13598-36-2			L	F	5	>5000	
Phthalide	27355-22-2			S	F	5	>10000	
Picloram [ISO]	1918-02-1			S	H	5	8200	ICSC 1246
Piperonyl butoxide	51-03-6			Oil	SY	5	>7500	IARC 30; JMPR 1996b; *ICSC 1347*
Pretilachlor [ISO]	51218-49-6			L	H	5	6100	
Primisulfuron [ISO]	113036-87-6			S	H	5	>5050	
Procymidone [ISO]	32809-16-8			S	F	5	6800	JMPR 1990, *2009b*
Prodiamine [ISO]	29091-21-2			S	H	5	>5000	
Propamocarb	24579-73-5			S	F	5	8600	JMPR 1987a
Propaquizafop	111479-05-1			S	H	5	>5000	ICSC 1271
Propazine [ISO]	139-40-2		T	S	H	5	>5000	ICSC 697
Propham [ISO]	122-42-9			S	H	5	5000	IARC 12; JMPR 1993
Propineb [ISO]	12071-83-9			S	H	5	8500	DS 94; EHC 78; JMPR 1994
Propyzamide [ISO]	23950-58-5			S	H	5	5620	

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Prothioconazole [ISO]	*178928-70-6*			*S*	*F*	5	*>6200*	*JMPR 2009a*
Pyrazolynate [ISO]	58011-68-0			S	H	5	9550	
Pyrazosulfuron [ISO]	98389-04-9			S	H	5	>5000	
Pyriminobac	136191-56-5			S	H	5	>5000	
Pyriproxyfen [ISO]	95737-68-1			S	I	5	>5000	ICSC 1269; JMPR 2000
Quinmerac [ISO]	90717-03-6			S	H	5	>5000	
Quinoxyfen [ISO]	124495-18-7			S	F	5	>5000	*JMPR 2008*
Quintozene [ISO]	82-68-8			S	F	5	>10000	EHC 41; HSG 23; IARC 5; JMPR 1996b; *ICSC 745*
Rimsulfuron [C]	122931-48-0			S	H	5	>5000	
Siduron [ISO]	1982-49-6			S	H	5	>7500	
Simazine [ISO]	122-34-9		T	S	H	5	>5000	ICSC 699
Spinetoram [ISO]	*187166-40-1*			S	*I*	5	*>5000*	*JMPR 2009a*
Sulfometuron	74223-56-6			S	H	5	>5000	
Tebufenozide	112410-23-8			S	I	5	>5000	Dermal LD50 > 5000; JMPR 1997b, 2004
Tebutam	35256-85-0			Oil	H	5	6210	
Tecnazene [ISO]	117-18-0			S	F	5	>10000	EHC 42; HSG 12; JMPR 1995b
Teflubenzuron	83121-18-0			S	I	5	>5000	JMPR 1995b
Terbacil [ISO]	5902-51-2			S	H	5	>5000	
Tetradifon [ISO]	116-29-0			S	AC	5	>10000	EHC 67; HSG 11; ICSC 747
Tetramethrin [ISO]	7696-12-0		PY	S	O	5	>5000	EHC 98; HSG 31; ICSC 334
Thifensulfuron-methyl	79277-27-3			S	H	5	>5000	
Thifluzamide	130000-40-7			S	F	5	>5000	Dermal LD_{50} > 5000
Thiophanate-methyl [ISO]	23564-05-8			S	F	5	>6000	JMPR 1996b, 1999, *2008*
Tiocarbazil	36756-79-3		TC	L	H	5	10000	
Tolclofos-methyl [ISO]	57018-04-9			S	F-S	5	c5000	JMPR 1995b

Common name	CAS no	UN no	Chem type	Phys state	Main use	GHS	LD_{50} mg/kg	Remarks
Tolylfluanid [ISO]	731-27-1			S	F	5	>5000	JMPR 1989, 2003b
Transfluthrin [ISO]	118712-89-3		PY	S	I	5	>5000	
Triasulfuron	82097-50-5			S	H	5	>5000	
Tribenuron [ISO]	106040-48-6			S	H	5	>5000	
Trifloxystrobin [ISO]	*141517-21-7*			S	F	5	*>5000*	*JMPR 2006a*
Triflumuron	64628-44-0			S	PGR	5	>5000	
Trifluralin [ISO]	1582-09-8			S	H	5	>10000	IARC 53; ICSC 205
Triflusulfuron-methyl [ISO]	126535-15-7			S	H	5	>5000	
Triforine [ISO]	26644-46-2			S	F	5	>6000	JMPR 1998b
Validamycin	37248-47-8			S	F	5	>10000	
Vinclozolin [ISO]	50471-44-8			S	F	5	10000	JMPR 1996b
Zineb [ISO]	12122-67-7			S	F	5	>5000	DS 94; EHC 78; IARC 12; ICSC 350; JMPR 1994
Zoxamide [ISO]	*156052-68-5*			*S*	*F*	5	*>5000*	*JMPR 2009b*

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

Notes to Table 5

1. The international trade of benomyl is regulated by the Rotterdam convention on Prior Informed Consent (see http://www.pic.int/), which entered into force on 24 February 2004. See Table 7, p. 51.

THE FINAL CLASSIFICATION OF ANY PRODUCT
DEPENDS ON ITS FORMULATION
See Pages 7 & 8, and the Annex

TABLE 6. ACTIVE INGREDIENTS BELIEVED TO BE OBSOLETE OR DISCONTINUED FOR USE AS PESTICIDES

Ingredients discontinued have been identified from the previous edition of this classification, from the Pesticide Manual (Pesticide Manual, 1991, 1994; 1997, 2003), and in some cases from the manufacturer. It is difficult, in some cases, to be sure whether or not all commercial activity in a substance has ceased; some of these materials are known to be still in use for non-agricultural purposes. IPCS will be grateful for details of any materials in this Section, which are still in commercial use. The common name and CAS number are indicated.

Active ingredient	CAS no	Active ingredient	CAS no
Acrylonitrile	107-13-1	Butonate	126-22-7
Aldoxycarb	1646-88-4	Butopyronoxyl	532-34-3
Aldrin[1,2]	309-00-2	Buturon	3766-60-7
Allidochlor	93-71-0	Calcium cyanamide	156-62-7
Allyxycarb	6392-46-7	Camphechlor[1,2]	8001-35-2
Amidithion	919-76-6	Carbamorph	31848-11-0
Aminocarb	2032-59-9	Carbanolate	671-04-5
Anilazine	101-05-3	Carbon disulfide	75-15-0
ANTU	86-88-4	Carbophenothion	786-19-6
Aramite	140-57-8	Chlomethoxyfen	32861-85-1
Arsenous oxide	1327-53-3	Chloramben	133-90-4
Athidathion	19691-80-6	Chloraniformethan	20856-57-9
Atraton	1610-17-9	Chloranil	118-75-2
Aziprotryne	4658-28-0	Chloranocryl	2164-09-2
Azothoate	5834-96-8	Chlorbenside	103-17-3
Barban	101-27-9	Chlorbufam	1967-16-4
Barium carbonate	513-77-9	Chlorbicyclen	2550-75-6
Benodanil	15310-01-7	Chlorbormuron	13360-45-7
Benquinox	495-73-8	Chlordecone	143-50-0
Benzoximate	29104-30-1	Chlordimeform[1]	6164-98-3
Benzoylprop-ethyl	33878-50-1	Chlorfenac	85-34-7
Benzthiazuron	1929-88-0	Chlorfenethol	80-06-8
Binapacryl[1]	485-31-4	Chlorfenprop-methyl	14437-17-3
Bis(tributyltin) oxide	56-35-9	Chlorfenson	80-33-1
Bisthiosemi	39603-48-0	Chlorfensulfide	22274-74-0
Bromocyclen	1715-40-8	Chlorflurenol	2536-31-4
Bromofenoxim	13181-17-4	Chlormebuform	37407-77-5
Bromophos	2104-96-3	Chlormethiuron	28217-97-2
Bromophos-ethyl	4824-78-6	Chlornitrofen	1836-77-7
Bufencarb	8065-36-9	Chlorobenzilate[1]	510-15-6
Butacarb	2655-19-8	Chloroneb	2675-77-6
Butam	35256-85-0	Chloropropylate	5836-10-2
Butenachlor	87310-56-3	Chloroxuron	1982-47-4
Buthidazole	55511-98-3	Chlorquinox	3495-42-9
Buthiobate	51308-54-4	Chlorphoxim	14816-20-7

TABLE 6. ACTIVE INGREDIENTS BELIEVED TO BE OBSOLETE OR DISCONTINUED FOR USE AS PESTICIDES, continued

Active ingredient	CAS no
Chlorthiamid	1918-13-4
Chlorthiophos	21923-23-9
Cloethocarb	51487-69-5
Clofop	26129-32-8
Coumachlor	81-82-3
Crimidine	535-89-7
Credazine	14491-59-9
Crotoxyphos	7700-17-6
Crufomate	299-86-5
Cyanofenphos	13067-93-1
Cyanthoate	3734-95-0
Cycloheximide	66-81-9
Cycluron	2163-69-1
Cyometrinil	63278-33-1
Cypendazole	28559-00-4
Cyprofuram	69581-33-5
Cypromid	2759-71-9
Delachlor	24353-58-0
Demephion-O	682-80-4
Demephion-S	2587-90-8
Demeton-O	298-03-3
Demeton-S	126-75-0
Demeton-S-methylsulphon	17040-19-6
Desmetryn	1014-69-3
Dialifos	10311-84-9
Di-allate	2303-16-4
Diamidafos	1754-58-1
Dibromochloropropane	96-12-8
Dibutyl phthalate	84-74-2
Dibutyl succinate	141-03-7
Dichlofenthion	97-17-6
1,2-Dichloropropane	78-87-5
Dichlozoline	24201-58-9
Diclobutrazol	75736-33-3
Dieldrin[1,2]	60-57-1
Dienochlor	2227-47-0
Diethatyl	38727-55-8
Difenoxuron	14214-32-5
Dimefox	115-26-4
Dimethirimol	*5221-53-4*
Dimetilan	644-64-4
Dimexano	1468-37-7
Dinex	131-89-5
Dinocton	32534-96-6
Dinoseb[1]	88-85-7
Dinoseb acetate[1]	2813-95-8
Dioxabenzophos	3811-49-2
Dioxacarb	6988-21-2
Dioxathion	78-34-2
Dipropetryn	4147-51-7
Disul	149-26-8
Ditalimfos	5131-24-8
Drazoxolon	5707-69-7
Eglinazine	6616-80-4
Endothion	2778-04-3
Endrin[2]	72-20-8
EPBP	3792-59-4
Erbon	136-25-4
ESP (Oxydeprofos)	2674-91-1
Etacelasil	37894-46-5
Etaconazole	60207-93-4
Ethidimuron	30043-49-3
Ethiolate	2941-55-1
Ethirimol	*23947-60-6*
Ethoate-methyl	116-01-8
Ethohexadiol	94-96-2
Ethyleneglycolbis (trichloroacetate)	2514-53-6
Etrimfos	38260-54-7
EXD	502-55-6
Fenaminosulf	140-56-7
Fenazaflor	14255-88-0
Fenchlorphos	299-84-3
Fenitropan	65934-95-4
Fenoprop (Silvex)	93-72-1
Fenoxaprop-ethyl	82110-72-3
Fenson	80-38-6
Fensulfothion	115-90-2
Fenthiaprop	95721-12-3
Fenuron	101-42-8
Fenuron-TCA	4482-55-7
Flamprop	58667-63-3
Fluazifop	69335-91-7
Flubenzimine	37893-02-0

TABLE 6. ACTIVE INGREDIENTS BELIEVED TO BE OBSOLETE OR DISCONTINUED FOR USE AS PESTICIDES, continued

Active ingredient	CAS no
Fluenetil	4301-50-2
Fluorodifen	15457-05-3
Fluoromide	13577-71-4
Fluotrimazole	31251-03-3
Fluvalinate	69409-94-5
Fonofos	944-22-9
Formothion	2540-82-1
Fosmethilan	83733-82-8
Fosthietan	21548-32-3
Furconazole-cis	112839-32-4
Furmecyclox	60568-05-0
Glyodin	556-22-9
Glyphosine	2439-99-8
Griseofulvin	126-07-8
Halacrinate	34462-96-9
Haloxydine	2693-61-0
Heptachlor[1,2]	76-44-8
Heptopargil	73886-28-9
Hexachloroacetone	116-16-5
Hexaflurate	17029-22-0
Hydroxyquinoline sulfate	134-31-6
Ipazine	1912-25-0
IPSP	5827-05-4
Isazofos	42509-80-8
Isobenzan	297-78-9
Isobornyl thiocyano acetate	115-31-1
Isocarbamid	30979-48-7
Isocil	314-42-1
Isodrin	465-73-6
Isofenphos	25311-71-1
Isomethiozin	57052-04-7
Isonoruron	28805-78-9
Isopropalin	33820-53-0
Isothioate	36614-38-7
Isoxapyrifop	87757-18-4
Jodfenphos	18181-70-9
Karbutilate	4849-32-5
Kelevan	4234-79-1
Kinoprene	42588-37-4
Leptophos	21609-90-5
Lythidathion	2669-32-1
Malonoben	10537-47-0
Mebenil	7055-03-0
Mecarbinzid	27386-64-7
Mecarphon	29173-31-7
Medinoterb acetate	2487-01-6
Menazon	78-57-9
Mephospholan	950-10-7
Methazole	20354-26-1
Methiuron	21540-35-2
Methoprotryne	841-06-5
Methoxyethylmercury silicate[1]	64491-92-5
Methoxyphenone	41295-28-7
Methoxymethyl mercurychloride[1]	123-88-6
Methylmercury dicyan-diamide[1]	502-39-6
Metobromuron	*3060-89-7*
Metsulfovax	21542-18-6
Mexacarbate	315-18-4
Mipafox	371-86-8
Mirex[2]	2385-85-5
Monalide	7187-36-7
Monuron	150-68-5
Monuron-TCA	140-41-0
Morfamquat	4636-83-3
Myclozolin	54864-61-8
Naphthalene	91-20-3
Naphthalic anhydride	81-84-5
Nitralin	4726-14-1
Nitrilacarb	29672-19-3
Nitrofen	1836-75-5
Norbormide	991-42-4
Noruron	2163-79-3
Oxapyrazon	4489-31-0
Oxydisulfoton	2497-07-6
Parafluron	7159-99-1
Perfluidone	37924-13-3
Phenisopham	57375-63-0
Phenkapton	2275-14-1
Phenobenzuron	3134-12-1

TABLE 6. ACTIVE INGREDIENTS BELIEVED TO BE OBSOLETE OR DISCONTINUED FOR USE AS PESTICIDES, continued

Active ingredient	CAS no
Phenylmercurydimethyl-dithiocarbamate[1]	32407-99-1
Phenylmercury nitrate[1]	8003-05-2
Phosacetim	4104-14-7
Phosdiphen	36519-00-3
Phosfolan	947-02-4
Pindone	83-26-1
Piproctanyl	69309-47-3
Pirimiphos-ethyl	23505-41-1
Potassium cyanate	590-28-3
Profluralin	26399-36-0
Proglinazine	68228-20-6
Promacyl	34264-24-9
Promecarb	2631-37-0
Propaphos	7292-16-2
Propyl isome	83-59-0
Prothiocarb	19622-08-3
Prothoate	2275-18-5
Proxan	108-25-8
Pydanon	22571-07-9
Pyracarbolid	24691-76-7
Pyridinitril	1086-02-8
Quinacetol sulfate	57130-91-3
Quinonamid	27541-88-4
Ryania	8047-13-0
Sabadilla	8051-02-3
Salicylanilide	87-17-2
Schradan	152-16-9
Scilliroside	507-60-8
Secbumeton	26259-45-0
Sesamex	51-14-9
Sodium fluoride	7681-49-4
Sodium hexafluorosilicate	16893-85-9
Sulfallate	95-06-7
Sulfoxide	120-62-7
Sulprofos	35400-43-2
SWEP	1918-18-9
2,4,5-T[1]	93-76-5
TDE	72-54-8
TEPP	107-49-3
Terbucarb	1918-11-2
Tetrasul	2227-13-6
Thiazafluron	25366-23-8
Thicyofen	116170-30-0
Thionazin	297-97-2
Thiophanate	23564-06-9
Thioquinox	93-75-4
Triamiphos	1031-47-6
Triapenthenol	76608-88-3
Triarimol	26766-27-8
Tricamba	2307-49-5
Trichlamide	70193-21-4
Trichloronat	327-98-0
Tridiphane	58138-08-2
Trifenmorph	1420-06-3
Trimethacarb	12407-86-2
Vernolate	1929-77-7

[1] The international trade of aldrin, binapacryl, camphechlor (toxaphene), chlordimeform, chlorobenzilate, dieldrin, dinoseb and dinoseb salts, heptachlor, mercury compounds, and 2,4,5-T is regulated by the Rotterdam convention on Prior Informed Consent (see http://www.pic.int/), which entered into force on 24 February 2004, with subsequent amendments. See Table 7, p. 51.

[2] The use and production of aldrin, camphechlor (toxaphene), *chlordecone*, dieldrin, endrin, heptachlor and mirex is prohibited or severely restricted by the Stockholm convention on persistent organic pollutants, which entered into force on 17 May, 2004, with subsequent amendments. See http://www.pops.int/

Table 7. Pesticides subject to the Rotterdam Convention[1]

Class	Pesticide	CAS number
O	Aldrin[2]	309-00-2
O	Binapacryl	485-31-4
Ia	Captafol	2425-06-1
II	Chlordane[2]	57-74-9
O	Chlordimeform	6164-98-3
O	Chlorobenzilate	510-15-6
II	DDT[2]	50-29-3
	1,2-Dibromoethane (EDB)	106-93-4
O	Dieldrin[2]	60-57-1
O	Dinoseb and dinoseb salts	88-85-7
Ib	DNOC and its salts (such as ammonium salt, potassium salt and sodium salt)	534-52-1; 2980-64-5; 5787-96-2; 2312-76-7
	Ethylene dichloride	107-06-2
	Ethylene oxide	75-21-8
Ib	Fluoroacetamide	640-19-7
II	HCH (mixed isomers)	608-73-1
O	Heptachlor[2]	76-44-8
Ia	Hexachlorobenzene[2]	118-74-1
II	Lindane[2]	58-89-9
	Mercury compounds, including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds	
Ib	Pentachlorophenol	87-86-5
O	2,4,5-T	93-76-5
O	Camphechlor (Toxaphene)	8001-35-2
	Dustable powder formulations containing a combination of benomyl at or above 7%, carbofuran at above 10%, thiram at or above 15%	17804-35-2; 1563-66-2; 137-26-8
Ib	Methamidophos (soluble liquid formulations of the substance that exceed 600 g active ingredient/L)	10265-92-6
Ia	Methyl-parathion (emulsifiable concentrates (EC) with 19.5%, 40%, 50%, 60% active ingredient and dusts containing 1.5%, 2% and 3% active ingredient	298-00-0
Ib	Monocrotophos (all formulations)	6923-22-4

Ia	Parathion (all formulations – aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) of this substance are included, except capsule suspensions (CS)	56-38-2
Ia	Phosphamidon (soluble liquid formulations of the substance that exceed 1000 g active ingredient/L)	13171-21-6 [mixture, (E) & (Z) isomers] 23783-98-4 [(Z)-isomer] 297-99-4 [(E)-isomer]
	Tributyltin compounds, including: tributyltin oxide; tributyltin benzoate; tributyltin chloride; tributyltin fluoride; tributyltin linoleate; tributyltin methacrylate; tributyltin naphthenate	

[1] According to the Rotterdam Convention, export of a chemical can only take place with the prior informed consent of the importing Party. The Prior Informed Consent (PIC) procedure is a means for formally obtaining and disseminating the decisions of importing countries as to whether they wish to receive future shipments of a certain chemical and for ensuring compliance to these decisions by exporting countries. The aim is to promote a shared responsibility between exporting and importing countries in protecting human health and the environment from the harmful effects of such chemicals (further information can be found at: http://www.pic.int/). The Rotterdam Convention (which entered into force on 24 February 2004) built on the voluntary PIC procedure which was initiated by UNEP and FAO in 1989.

[2] The use and production of aldrin, chlordane, DDT, dieldrin, heptachlor, hexachlorobenzene and lindane is prohibited or severely restricted by the Stockholm convention on persistent organic pollutants, which entered into force on 17 May, 2004. See http://www.pops.int/

TABLE 8. GASEOUS OR VOLATILE FUMIGANTS NOT CLASSIFIED UNDER THE WHO RECOMMENDED CLASSIFICATION OF PESTICIDES BY HAZARD

The Classification does not set out any criteria for air concentrations on which classification could be based. Most of these compounds are of high hazard and recommended exposure limits for occupational exposure have been adopted by national authorities in many countries.

Pesticide	CAS number	Remarks
Aluminium phosphide	20859-73-8	DS 46; EHC 73; HSG 28; JMPR 1967
Chloropicrin	76-06-2	JMPR 1965b
1,2-Dibromoethane	106-93-4	EHC 177; IARC 15
1,3-Dichloropropene	542-75-6	EHC 146; HSG 76; IARC 41
Ethylene dichloride	107-06-2	EHC 62, 176; HSG 55; IARC 20
Ethylene oxide	75-21-8	EHC 55; HSG 16; JMPR 1969; IARC 11, 36, 42
Formaldehyde	50-00-0	EHC 89; HSG 57
Hydrogen cyanide	74-90-8	JMPR 1965b
Magnesium phosphide	12057-74-8	EHC 73; HSG 28
Methyl bromide	74-83-9	DS 5; EHC 166; HSG 86; IARC 41, 45; JMPR 1967
Phosphine	7803-51-2	DS 46; EHC 73; HSG 28; JMPR 1967
Sulfuryl fluoride	2699-79-8	*JMPR 2006b*

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

ANNEX

HOW TO FIND THE HAZARD CLASS OF A FORMULATION

The following tables A and B can be used to find the hazard class of a formulation. These should be used only if toxicity data is not available on the formulation itself; see the note at the top of page 7.

The tables should be used as follows:

Step 1: What is the approved name of the active ingredient in the pesticide? Use the index to find the entry in tables 1-5 of the Guidelines.

Step 2: From the entry in the Guidelines, what is the route of application used for the classification?

If the route is O (oral), use table A of this Annex. The same table is used for solids and liquids.

If the route is D (dermal), use table B of this Annex. The same table is used for solids and liquids.

Step 3: From the entry in the Guidelines, what is the LD_{50} of the active ingredient?

Using the table A or B, selected in Step 2, find the column along the top line which most nearly includes the LD_{50} figure.

Step 4: What is the concentration % of the active ingredient in the formulation?

Using the same table A or B, find the figure in the left hand column which most nearly includes this percentage figure.

Step 5: Find the square where the column selected in Step 3 crosses the line selected in Step 4. The number in this square is the approximate LD_{50} of the formulation.

Step 6: The hazard classes are shown by blocks of squares. The hazard class of the formulation is that of the block in which lies the square selected in Step 5.

These tables can also be used to find the hazard class of mixtures. First see page 7, para. 4 of the Guidelines and select the method to be used to arrive at the LD_{50} of the mixture. For method (b), use the above method from Step 1, using the name of the more or most toxic ingredient. For method (c), pass to Step 4 using the total percentages of all active ingredients in the mixture.

Table A. LD_{50} values and classification of formulations when the route is ORAL

First row = Oral LD_{50} of the active ingredient

First column = Percent concentration of the active ingredient in the formulation

	Class Ia			Class Ib									Class II																				Class III					
	1	3	5	10	15	20	25	30	35	40	45	50	60	80	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2000	2500	3000	3500	4000	4500	5000
100	1	3	5	10	15	20	25	30	35	40	45	50	60	80	100	120	140	160	180	200	250	300	350	400	500	600	700	800	900	1000	1500	2000	2500	3000	3500	4000	4500	5000
95	1	3	5	11	16	21	26	32	37	42	47	53	63	84	105	126	147	168	189	211	263	316	368	421	526	632	737	842	947	1053	1579	2105	2632	3158	3684	4211	4737	
90	1	3	6	11	17	22	28	33	39	44	50	56	67	89	111	133	156	178	200	222	278	333	389	444	556	667	778	889	1000	1111	1667	2222	2778	3333	3889	4444	5000	
85	1	4	6	12	18	24	29	35	41	47	53	59	71	94	118	141	165	188	212	235	294	353	412	471	588	706	824	941	1059	1176	1765	2353	2941	3529	4118	4706		
80	1	4	6	13	19	25	31	38	44	50	56	63	75	100	125	150	175	200	225	250	313	375	438	500	625	750	875	1000	1125	1250	1875	2500	3125	3750	4375	5000		
75	1	4	7	13	20	27	33	40	47	53	60	67	80	107	133	160	187	213	240	267	333	400	467	533	667	800	933	1067	1200	1333	2000	2667	3333	4000	4667			
70	1	4	7	14	21	29	36	43	50	57	64	71	86	114	143	171	200	229	257	286	357	429	500	571	714	857	1000	1143	1286	1429	2143	2857	3571	4286	5000			
65	2	5	8	15	23	31	38	46	54	62	69	77	92	123	154	185	215	246	277	308	385	462	538	615	769	923	1077	1231	1385	1538	2308	3077	3846	4615				
60	2	5	8	17	25	33	42	50	58	67	75	83	100	133	167	200	233	267	300	333	417	500	583	667	833	1000	1167	1333	1500	1667	2500	3333	4167	5000				
55	2	5	9	18	27	36	45	55	64	73	82	91	109	145	182	218	255	291	327	364	455	545	636	727	909	1091	1273	1455	1636	1818	2727	3636	4545					
50	2	6	10	20	30	40	50	60	70	80	90	100	120	160	200	240	280	320	360	400	500	600	700	800	1000	1200	1400	1600	1800	2000	3000	4000	5000					
45	2	7	11	22	33	44	56	67	78	89	100	111	133	178	222	267	311	356	400	444	556	667	778	889	1111	1333	1556	1778	2000	2222	3333	4444						
40	3	8	13	25	38	50	63	75	88	100	113	125	150	200	250	300	350	400	450	500	625	750	875	1000	1250	1500	1750	2000	2250	2500	3750	5000						
35	3	9	14	29	43	57	71	86	100	114	129	143	171	229	286	343	400	457	514	571	714	857	1000	1143	1429	1714	2000	2286	2571	2857	4286							
30	3	10	17	33	50	67	83	100	117	133	150	167	200	267	333	400	467	533	600	667	833	1000	1167	1333	1667	2000	2333	2667	3000	3333	5000							
25	4	12	20	40	60	80	100	120	140	160	180	200	240	320	400	480	560	640	720	800	1000	1200	1400	1600	2000	2400	2800	3200	3600	4000								
20	5	15	25	50	75	100	125	150	175	200	225	250	300	400	500	600	700	800	900	1000	1250	1500	1750	2000	2500	3000	3500	4000	4500	5000								
15	7	20	33	67	100	133	167	200	233	267	300	333	400	533	667	800	933	1067	1200	1333	1667	2000	2333	2667	3333	4000	4667											
10	10	30	50	100	150	200	250	300	350	400	450	500	600	800	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	5000													
5	20	60	100	200	300	400	500	600	700	800	900	1000	1200	1600	2000	2400	2800	3200	3600	4000	5000																	
3	33	100	167	333	500	667	833	1000	1167	1333	1500	1667	2000	2667	3333	4000	4667																					
1	100	300	500	1000	1500	2000	2500	3000	3500	4000	4500	5000																										
0.5	200	600	1000	2000	3000	4000	5000																															
0.3	333	1000	1667	3333	5000																																	
0.1	1000	3000	5000																																			
0.05	2000																																					

UNLIKELY TO PRESENT ACUTE HAZARD IN NORMAL USE

Table B. LD_{50} values and classification of formulations when the route is DERMAL

First row = Dermal LD_{50} of the active ingredient

First column = Percent concentration of the active ingredient in the formulation

	Class Ia							Class Ib										Class II													Class III					
	1	5	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000	2500	3000	3500	4000	4500	5000
100	1	5	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000	2500	3000	3500	4000	4500	5000
95	1	5	11	21	32	42	53	63	74	84	95	105	126	147	168	189	211	263	316	368	421	474	526	632	737	842	947	1053	1579	2105	2632	3158	3684	4211	4737	
90	1	6	11	22	33	44	56	67	78	89	100	111	133	156	178	200	222	278	333	389	444	500	556	667	778	889	1000	1111	1667	2222	2778	3333	3889	4444	5000	
85	1	6	12	24	35	47	59	71	82	94	106	118	141	165	188	212	235	294	353	412	471	529	588	706	824	941	1059	1176	1765	2353	2941	3529	4118	4706		
80	1	6	13	25	38	50	63	75	88	100	113	125	150	175	200	225	250	313	375	438	500	563	625	750	875	1000	1125	1250	1875	2500	3125	3750	4375	5000		
75	1	7	13	27	40	53	67	80	93	107	120	133	160	187	213	240	267	333	400	467	533	600	667	800	933	1067	1200	1333	2000	2667	3333	4000	4667			
70	1	7	14	29	43	57	71	86	100	114	129	143	171	200	229	257	286	357	429	500	571	643	714	857	1000	1143	1286	1429	2143	2857	3571	4286	5000			
65	2	8	15	31	46	62	77	92	108	123	138	154	185	215	246	277	308	385	462	538	615	692	769	923	1077	1231	1385	1538	2308	3077	3846	4615				
60	2	8	17	33	50	67	83	100	117	133	150	167	200	233	267	300	333	417	500	583	667	750	833	1000	1167	1333	1500	1667	2500	3333	4167	5000				
55	2	9	18	36	55	73	91	109	127	145	164	182	218	255	291	327	364	455	545	636	727	818	909	1091	1273	1455	1636	1818	2727	3636	4545					
50	2	10	20	40	60	80	100	120	140	160	180	200	240	280	320	360	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	3000	4000	5000					
45	2	11	22	44	67	89	111	133	156	178	200	222	267	311	356	400	444	556	667	778	889	1000	1111	1333	1556	1778	2000	2222	3333	4444						
40	3	13	25	50	75	100	125	150	175	200	225	250	300	350	400	450	500	625	750	875	1000	1125	1250	1500	1750	2000	2250	2500	3750	5000						
35	3	14	29	57	86	114	143	171	200	229	257	286	343	400	457	514	571	714	857	1000	1143	1286	1429	1714	2000	2286	2571	2857	4286							
30	3	17	33	67	100	133	167	200	233	267	300	333	400	467	533	600	667	833	1000	1167	1333	1500	1667	2000	2333	2667	3000	3333	5000							
25	4	20	40	80	120	160	200	240	280	320	360	400	480	560	640	720	800	1000	1200	1400	1600	1800	2000	2400	2800	3200	3600	4000								
20	5	25	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1250	1500	1750	2000	2250	2500	3000	3500	4000	4500	5000								
15	7	33	67	133	200	267	333	400	467	533	600	667	800	933	1067	1200	1333	1667	2000	2333	2667	3000	3333	4000	4667											
10	10	50	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500	5000													
5	20	100	200	400	600	800	1000	1200	1400	1600	1800	2000	2400	2800	3200	3600	4000	5000																		
3	33	167	333	667	1000	1333	1667	2000	2333	2667	3000	3333	4000	4667																						
1	100	500	1000	2000	3000	4000	5000																													
0.5	200	1000	2000	4000																																
0.3	333	1667	3333																																	
0.1	1000	5000																																		

UNLIKELY TO PRESENT ACUTE HAZARD IN NORMAL USE

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
50-00-0	FM	53	78-87-5	O	48	99-30-9	III	35
50-29-3	II	26, 51	79-11-8	III	34	101-05-3	O	47
50-31-7	II	32	80-06-8	O	47	101-21-3	U	40
50-65-7	U	43	80-33-1	O	47	101-27-9	O	47
51-03-6	U	44	80-38-6	O	48	101-42-8	O	48
52-51-7	II	24	81-81-2	Ib	23	103-17-3	O	47
52-68-6	II	32	81-82-3	O	48	106-46-7	II	26
52-85-7	Ib	22	81-84-5	O	49	107-02-8	Ib	21
54-11-5	Ib	22	82-66-6	Ia	19	107-06-2	FM	51, 53
55-38-9	II	27	82-68-8	U	45	107-13-1	O	47
56-35-9	O	47	83-26-1	O	50	107-18-6	Ib	21
56-38-2	Ia	20, 52	83-59-0	O	50	107-49-3	O	50
56-72-4	Ib	21	83-79-4	II	31	108-25-8	O	50
57-24-9	Ib	23	84-65-1	U	39	108-62-3	II	29
57-74-9	II	25, 51	84-74-2	O	48	112-12-9	III	38
58-89-9	II	28, 51	85-34-7	O	47	113-48-4	III	37
60-51-5	II	27	86-50-0	Ib	21	114-26-1	II	31
60-57-1	O	48, 51	86-86-2	U	43	115-26-4	O	48
61-82-5	U	39	86-87-3	III	37	115-29-7	II	27
62-38-4	Ia	20, 51	86-88-4	O	47	115-31-1	O	49
62-73-7	Ib	21	87-17-2	O	50	115-32-2	II	26
62-74-8	Ia	20	87-86-5	Ib	22, 51	115-78-6	II	25
63-25-2	II	25	88-85-7	O	48, 51	115-90-2	O	48
66-81-9	O	48	90-43-7	III	37	116-01-8	O	48
72-20-8	O	48	91-20-3	O	49	116-06-3	Ia	19
72-43-5	U	43	92-52-4	III	34	116-16-5	O	49
72-54-8	O	50	93-71-0	O	47	116-29-0	U	45
74-83-9	FM	53	93-72-1	O	48	117-18-0	U	45
74-90-8	FM	53	93-75-4	O	50	118-74-1	Ia	19, 51
75-15-0	O	47	93-76-5	O	50, 51	118-75-2	O	47
75-21-8	FM	51, 53	94-74-6	II	29	119-12-0	II	31
75-60-5	II	27	94-75-7	II	26	120-23-0	II	30
75-99-0	U	40	94-81-5	II	29	120-62-7	O	50
76-03-9	II	32	94-82-6	II	26	121-75-5	III	36
76-06-2	FM	53	94-96-2	O	48	122-14-5	II	27
76-44-8	O	49, 51	95-06-7	O	50	122-34-9	U	45
76-87-9	II	28	96-12-8	O	48	122-42-9	U	44
77-06-5	U	41	96-24-2	Ib	21	122-88-3	III	35
78-34-2	O	48	97-17-6	O	48	123-33-1	U	43
78-57-9	O	49	97-23-4	II	26	123-88-6	O	49, 51

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
124-58-3	II	30	300-76-5	II	30	682-80-4	O	48
125-67-9	II	27	301-12-2	Ib	22	709-98-8	II	31
126-07-8	O	49	309-00-2	O	47, 51	731-27-1	U	46
126-22-7	O	47	314-40-9	U	39	732-11-6	II	30
126-75-0	O	48	314-42-1	O	49	741-58-2	II	24
131-11-3	U	41	315-18-4	O	49	756-09-2	U	42
131-89-5	O	48	327-98-0	O	50	759-94-4	II	27
132-66-1	U	43	330-54-1	III	35	786-19-6	O	47
133-06-2	U	39	330-55-2	III	36	834-12-8	II	24
133-07-3	U	42	333-41-5	II	26	841-06-5	O	49
133-90-4	O	47	371-86-8	O	49	886-50-0	III	38
134-31-6	O	49	465-73-6	O	49	900-95-8	II	27
134-62-3	III	35	467-69-6	U	42	919-76-6	O	47
136-25-4	O	48	470-90-6	Ib	21	919-86-8	Ib	21
137-26-8	II	32, 51	485-31-4	O	47, 51	944-22-9	O	49
137-30-4	II	33	495-73-8	O	47	947-02-4	O	50
137-42-8	II	29	502-39-6	O	49, 51	950-10-7	O	49
139-40-2	U	44	502-55-6	O	48	950-37-8	Ib	22
140-41-0	O	49	507-60-8	O	50	957-51-7	II	27
140-56-7	O	48	510-15-6	O	47, 51	973-21-7	II	27
140-57-8	O	47	513-77-9	O	47	991-42-4	O	49
141-03-7	O	48	532-34-3	O	47	999-81-5	II	25
141-66-2	Ib	21	533-74-4	II	26	1014-69-3	O	48
142-59-6	II	30	534-52-1	Ib	22, 51	1014-70-6	II	31
143-33-9	Ib	23	535-89-7	O	48	1031-47-6	O	50
143-50-0	O	47	542-75-6	FM	53	1071-83-6	III	36
148-79-8	III	38	555-37-3	U	43	1085-98-9	U	40
149-26-8	O	48	556-22-9	O	49	1086-02-8	O	50
150-68-5	O	49	556-61-6	II	30	1113-02-6	Ib	22
152-16-9	O	50	563-12-2	II	27	1114-71-2	II	30
156-62-7	O	47	584-79-2	II	24	1129-41-5	II	30
297-78-9	O	49	584-79-2	II	24	1134-23-2	III	35
297-97-2	O	50	590-28-3	O	50	1194-65-6	III	35
297-99-4	Ia	20, 52	592-01-8	Ia	19	1303-96-4	III	34
298-00-0	Ia	19, 51	608-73-1	II	28, 51	1314-84-7	Ib	23
298-02-2	Ia	20	640-15-3	Ib	23	1317-39-1	II	25
298-03-3	O	48	640-19-7	Ib	22, 51	1327-53-3	O	47
298-04-4	Ia	19	644-64-4	O	48	1332-40-7	II	25
299-84-3	O	48	650-51-1	III	37	1420-06-3	O	50
299-86-5	O	48	671-04-5	O	47	1420-07-1	Ib	21

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
1468-37-7	O	48	2163-69-1	O	48	2655-19-8	O	47
1563-66-2	Ib	21, 51	2163-79-3	O	49	2669-32-1	O	49
1582-09-8	U	46	2164-08-1	II	29	2674-91-1	O	48
1593-77-7	U	41	2164-08-1	U	43	2675-77-6	O	47
1596-84-5	U	40	2164-09-2	O	47	2693-61-0	O	49
1610-17-9	O	47	2164-17-2	U	42	2699-79-8	FM	53
1610-18-0	III	37	2212-67-1	II	30	2759-71-9	O	48
1646-88-4	O	47	2227-13-6	O	50	2764-72-9	II	27
1689-83-4	II	29	2227-47-0	O	48	2778-04-3	O	48
1689-84-5	II	24	2275-14-1	O	49	2797-51-5	II	31
1698-60-8	III	34	2275-18-5	O	50	2813-95-8	O	48
1715-40-8	O	47	2275-23-2	Ib	23	2921-88-2	II	25
1746-81-2	III	36	2303-16-4	O	48	2980-64-5	Ib	22, 51
1754-58-1	O	48	2303-17-5	III	38	2941-55-1	O	48
1836-75-5	O	49	2307-49-5	O	50	3060-89-7	U	43
1836-77-7	O	47	2307-68-8	U	44	3134-12-1	O	49
1861-32-1	III	34	2310-17-0	II	30	3337-71-1	III	34
1861-40-1	U	39	2312-35-8	III	37	3347-22-6	II	27
1897-45-6	U	40	2312-76-7	Ib	22, 51	3383-96-8	III	37
1910-42-5	II	30	2385-85-5	O	49	3495-42-9	O	47
1912-24-9	III	34	2425-06-1	Ia	19, 51	3547-33-9	U	42
1912-25-0	O	49	2425-10-7	II	33	3689-24-5	Ia	20
1912-26-1	III	38	2439-01-2	II	25	3691-35-8	Ia	19
1918-00-9	II	26	2439-10-3	II	27	3734-95-0	O	48
1918-02-1	U	44	2439-99-8	O	49	3737-22-2	U	41
1918-11-2	O	50	2487-01-6	O	49	3740-92-9	U	41
1918-13-4	O	48	2497-07-6	O	49	3766-60-7	O	47
1918-16-7	II	31	2514-53-6	O	48	3766-81-2	II	27
1929-77-7	O	50	2536-31-4	O	47	3792-59-4	O	48
1929-82-4	II	30	2540-82-1	O	49	3811-49-2	O	48
1929-88-0	O	47	2550-75-6	O	47	3813-05-6	III	34
1967-16-4	O	47	2587-90-8	O	48	3861-47-0	II	29
1982-47-4	O	47	2593-15-9	III	35	3878-19-1	II	28
1982-49-6	U	45	2595-54-2	Ib	22	4104-14-7	O	50
2008-41-5	III	34	2597-03-7	II	30	4147-51-7	O	48
2032-59-9	O	47	2631-37-0	O	50	4151-50-2	II	32
2032-65-7	Ib	22	2631-40-5	II	29	4234-79-1	O	49
2079-00-7	Ib	21	2636-26-2	II	25	4301-50-2	O	49
2104-64-5	Ia	19	2642-71-9	Ib	21	4482-55-7	O	48
2104-96-3	O	47	2655-14-3	II	33	4489-31-0	O	49

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
4636-83-3	O	49	7778-44-1	Ib	21	13598-36-2	U	44
4658-28-0	O	47	7784-40-9	Ib	22	13684-56-5	U	40
4726-14-1	O	49	7784-46-5	Ib	23	13684-63-4	U	44
4824-78-6	O	47	7803-51-2	FM	53	13952-84-6	II	25
4849-32-5	O	49	8001-35-2	O	47, 51	14214-32-5	O	48
5131-24-8	O	48	8003-05-2	O	50, 51	14255-88-0	O	48
5221-53-4	III	35	8003-34-7	II	31	14437-17-3	O	47
5234-68-4	III	34	8018-01-7	U	43	14484-64-1	U	41
5259-88-1	III	37	8051-02-3	O	50	14491-59-9	O	48
5598-13-0	III	34	8065-36-9	O	47	14750-35-4	U	40
5707-69-7	O	48	9006-42-2	U	43	14816-18-3	II	30
5787-96-2	Ib	22, 51	10004-44-1	III	36	14816-20-7	O	47
5827-05-4	O	49	10071-13-3	U	43	15096-52-3	U	40
5834-96-8	O	47	10112-91-1	II	29, 51	15263-53-3	II	25
5836-10-2	O	47	10265-92-6	Ib	22, 51	15299-99-7	U	43
5836-29-3	Ib	21	10311-84-9	O	48	15302-91-7	II	29
5902-51-2	U	45	10380-28-6	U	44	15310-01-7	O	47
5915-41-3	III	38	10453-86-8	III	37	15457-05-3	O	49
6164-98-3	O	47, 51	10537-47-0	O	49	15545-48-9	U	40
6392-46-7	O	47	10552-74-6	U	43	15845-66-2	U	42
6616-80-4	O	48	10605-21-7	U	40	15879-93-3	II	25
6923-22-4	Ib	22, 51	12002-03-8	Ib	22	15972-60-8	II	24
6988-21-2	O	48	12057-74-8	FM	53	16118-49-3	U	40
7055-03-0	O	49	12071-83-9	U	44	16484-77-8	II	29
7085-19-0	II	29	12122-67-7	U	46	16672-87-0	III	35
7159-99-1	O	49	12407-86-2	O	50	16752-77-5	Ib	22
7187-36-7	O	49	12427-38-2	U	43	16893-85-9	O	50
7287-19-6	III	37	12771-68-5	III	34	17029-22-0	O	49
7292-16-2	*O*	*50*	13067-93-1	O	48	17040-19-6	O	48
7446-18-6	Ib	23	13071-79-9	Ia	20	17109-49-8	Ib	22
7487-94-7	Ia	19	13121-70-5	II	25	17606-31-4	II	24
7547-66-2	II	26	13171-21-6	Ia	20, 52	17804-35-2	U	39, 51
7681-49-4	O	50	13181-17-4	O	47	18181-70-9	O	49
7681-93-8	III	37	13194-48-4	Ia	19	18181-80-1	U	39
7696-12-0	U	45	13356-08-6	III	36	18467-77-1	U	41
7700-17-6	O	48	13360-45-7	O	47	18691-97-9	III	36
7704-34-9	III	37	13457-18-6	II	31	18854-04-8	Ib	22
7758-98-7	II	25	13516-27-3	II	29	19044-88-3	U	44
7773-06-0	III	34	13577-71-4	O	49	19408-46-9	U	43
7775-09-9	II	31	13593-03-8	II	31	19622-08-3	O	50

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
19666-30-9	U	44	24934-91-6	Ia	19	31895-22-4	II	32
19691-80-6	O	47	25057-89-0	II	24	32407-99-1	O	50, 51
19937-59-8	III	36	*25311-71-1*	*O*	*49*	32534-96-6	O	48
20354-26-1	O	49	25319-90-8	II	29	32791-87-0	U	40
20427-59-2	II	25	25366-23-8	O	50	32809-16-8	U	44
20856-57-9	O	47	25954-13-6	III	36	32861-85-1	O	47
20859-73-8	FM	53	26002-80-2	U	44	33089-61-1	II	24
21087-64-9	II	30	26087-47-8	II	29	33245-39-5	II	28
21540-35-2	O	49	26129-32-8	O	48	33629-47-9	II	24
21542-18-6	O	49	26225-79-6	U	41	33693-04-8	II	32
21548-32-3	O	49	26259-45-0	O	50	33820-53-0	O	49
21609-90-5	O	49	26399-36-0	O	50	33878-50-1	O	47
21725-46-2	II	25	26530-20-1	II	30	34014-18-1	II	32
21908-53-2	Ib	22, 51	26644-46-2	U	46	34123-59-6	II	29
21923-23-9	O	48	26718-65-0	Ia	19	34205-21-5	III	35
22224-92-6	Ib	22	26766-27-8	O	50	34256-82-1	III	34
22248-79-9	III	38	27314-13-2	U	43	34264-24-9	O	50
22259-30-9	Ib	22	27355-22-2	U	44	34462-96-9	O	49
22274-74-0	O	47	27386-64-7	O	49	34643-46-4	II	31
22571-07-9	O	50	27541-88-4	O	50	34681-10-2	Ib	21
22781-23-3	II	24	27605-76-1	III	37	34681-23-7	Ib	21
22936-75-0	III	35	28217-97-2	O	47	35256-85-0	O	47
23031-36-9	II	31	28249-77-6	II	32	35256-85-0	U	45
23103-98-2	II	31	28434-01-7	U	39	35367-38-5	III	35
23135-22-0	Ib	22	28559-00-4	O	48	35400-43-2	O	50
23184-66-9	III	34	28772-56-7	Ia	19	35554-44-0	II	28
23505-41-1	O	50	28805-78-9	O	49	35575-96-3	II	24
23560-59-0	Ib	22	29091-05-2	III	35	36335-67-8	II	24
23564-05-8	U	45	29091-21-2	U	44	36519-00-3	O	50
23564-06-9	O	50	29104-30-1	O	47	36614-38-7	O	49
23783-98-4	Ia	19, 51	29173-31-7	O	49	36734-19-7	III	36
23947-60-6	III	35	29232-93-7	II	31	36756-79-3	U	45
23950-58-5	U	44	29672-19-3	O	49	37248-47-8	U	46
24017-47-8	Ib	23	29973-13-5	Ib	22	37407-77-5	O	47
24151-93-7	II	30	30043-49-3	O	48	37764-25-3	III	35
24201-58-9	O	48	30560-19-1	II	24	37893-02-0	O	48
24353-58-0	O	48	30979-48-7	O	49	37894-46-5	O	48
24579-73-5	U	44	31218-83-4	Ib	23	37924-13-3	O	50
24691-76-7	O	50	31251-03-3	O	49	38260-54-7	O	48
24691-80-3	U	41	31848-11-0	O	47	38727-55-8	O	48

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
39196-18-4	Ib	23	53369-07-6	II	28	61432-55-1	II	26
39300-45-3	II	27	53780-34-0	II	29	62610-77-9	II	29
39515-40-7	II	26	54406-48-3	III	35	62850-32-2	II	27
39603-48-0	O	47	54593-83-8	Ia	19	62865-36-5	U	40
40483-25-2	II	26	54864-61-8	O	49	62924-70-3	U	41
40487-42-1	II	30	55179-31-2	U	39	63278-33-1	O	48
40596-69-8	U	43	55219-65-3	II	32	63284-71-9	II	30
41083-11-8	II	24	55283-68-6	U	41	63333-35-7	Ia	19
41198-08-7	II	31	55285-14-8	II	25	63935-38-6	U	40
41205-09-8	U	42	55290-64-7	II	26	64249-01-0	II	24
41295-28-7	O	49, 51	55335-06-3	II	32	64257-84-7	II	27
41394-05-2	II	29	55511-98-3	O	47	64491-92-5	O	49
41483-43-6	III	34	55512-33-9	III	37	64628-44-0	U	46
41814-78-2	II	32	55634-91-8	III	34	64902-72-3	U	40
42509-80-8	O	49	55814-41-0	U	43	65907-30-4	Ib	22
42576-02-3	U	39	55861-78-4	II	29	65934-95-4	O	48
42588-37-4	O	49	56073-07-5	Ia	19	66063-05-6	U	44
42609-52-9	III	35	56073-10-0	Ia	19	66215-27-8	III	35
42609-73-4	U	43	56425-91-3	II	28	66230-04-4	II	27
42874-03-3	U	44	57018-04-9	U	45	66246-88-6	III	37
43121-43-3	II	32	57052-04-7	O	49	66332-96-5	U	42
43222-48-6	II	26	57130-91-3	O	50	66841-25-6	II	32
50471-44-8	U	46	57369-32-1	II	31	66952-49-6	II	30
50512-35-1	II	29	57375-63-0	O	49	67129-08-2	III	36
50563-36-5	II	26	57646-30-7	II	28	67306-00-7	II	27
50594-66-6	II	24	57754-85-5	III	35	67375-30-8	II	26
51218-45-2	III	36	57837-19-1	II	29	67485-29-4	II	28
51218-49-6	U	44	57966-95-7	II	25	67564-91-4	III	36
51235-04-2	II	28	58011-68-0	U	45	67747-09-5	II	31
51308-54-4	O	47	58138-08-2	O	50	68038-71-1	III	34
51487-69-5	O	48	58667-63-3	O	48	68085-85-8	II	25
51630-58-1	II	28	58810-48-3	III	37	68228-20-6	O	50
51707-55-2	III	38	59669-26-0	II	32	68359-37-5	Ib	21
52304-36-6	U	41	59756-60-4	U	42	68505-69-1	III	34
52315-07-8	II	26	60168-88-9	III	36	69309-47-3	O	50
52315-07-8	Ib	21	60207-31-0	II	24	69327-76-0	III	34
52645-53-1	II	30	60207-90-1	II	31	69335-91-7	O	48
52888-80-9	II	31	60207-93-4	O	48	69377-81-7	U	42
52918-63-5	II	26	60568-05-0	O	49	69409-94-5	O	49
53112-28-0	III	37	61213-25-0	III	36	69581-33-5	O	48

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
69806-34-4	II	28	82110-72-3	O	48	96489-71-3	II	31
70124-77-5	Ib	22	82211-24-3	U	42	97886-45-8	U	41
70193-21-4	O	50	82558-50-7	U	42	98389-04-9	U	45
71048-99-2	II	24	82560-54-1	II	24	98730-04-2	U	39
71422-67-8	U	40	82657-04-3	II	24	98967-40-9	U	42
71561-11-0	II	31	83055-99-6	U	39	99283-00-8	III	34
71626-11-4	III	34	83066-88-0	III	36	99387-89-0	II	32
72178-02-0	II	28	83121-18-0	U	45	101007-06-1	U	39
73250-68-7	U	43	83130-01-2	II	24	101205-02-1	III	35
73886-28-9	O	49	83164-33-4	III	35	101463-69-8	III	36
74051-80-2	III	37	83657-22-1	II	33	102851-06-9	III	36
74070-46-5	U	39	83657-24-3	III	35	103112-35-2	U	41
74115-24-5	III	35	83733-82-8	O	49	104030-54-8	U	40
74223-56-6	U	45	84087-01-4	III	37	104653-34-1	Ia	19
74223-64-6	U	43	84332-86-5	III	34	106040-48-6	U	46
74712-19-9	U	39	84496-56-0	U	40	107534-96-3	II	32
74738-17-3	U	41	85509-19-9	II	28	108173-90-6	II	28
74782-23-3	U	44	85785-20-2	III	35	110235-47-7	U	43
75736-33-3	O	48	86479-06-3	U	42	110488-70-5	U	41
76578-12-6	II	31	86598-92-7	U	42	111479-05-1	U	44
76608-88-3	O	50	87130-20-9	U	40	111991-09-4	U	43
76674-21-0	II	28	87310-56-3	O	47	111988-49-9	II	32
76738-62-0	II	30	*87674-68-8*	*II*	*27*	112143-82-5	II	32
77458-01-6	II	31	87757-18-4	O	49	112226-61-6	III	36
77501-60-1	II	28	87818-31-3	II	25	112281-77-3	II	32
77732-09-3	II	30	87820-88-0	II	32	112410-23-8	U	45
78587-05-0	U	42	88283-41-4	III	37	112839-32-4	O	49
79127-80-3	U	41	88485-37-4	II	28	113036-87-6	U	44
79277-27-3	U	45	88671-89-0	II	30	114369-43-6	III	36
79538-32-2	Ib	23	89269-64-7	II	28	116170-30-0	O	50
79983-71-4	III	36	90035-08-8	Ia	19	116255-48-2	II	24
80060-09-9	III	35	90134-59-1	III	36	*116714-46-6*	*U*	*43*
80844-07-1	U	41	90717-03-6	U	45	118134-30-8	II	32
81334-34-1	U	42	94050-52-9	U	41	118712-89-3	U	46
81335-37-7	U	42	94361-06-5	II	26	119168-77-3	II	32
81335-77-5	U	42	94593-91-6	U	40	119446-68-3	II	26
81405-85-8	U	42	95465-99-9	Ib	21	119738-06-6	II	31
81412-43-3	II	32	95721-12-3	O	48	120068-37-3	II	28
81777-89-1	II	25	95737-68-1	U	45	120162-55-2	U	39
82097-50-5	U	46	96182-53-5	Ia	20	120928-09-8	II	27

Pesticide active ingredients, which occur in Tables 1-8, in CAS no order, continued

For each active ingredient, the classification (Ia, Ib, II, III, or U (unlikely to pose an acute hazard in normal use, O (obsolete), FM (fumigant), and page number(s) are given.

CAS no	Class	Page	CAS no	Class	Page	CAS no	Class	Page
121451-02-3	U	44	131929-63-0	U	45	*149877-41-8*	*U*	*39*
122008-85-9	U	40	131983-72-7	III	38	*150114-71-9*	*U*	*39*
122453-73-0	II	25	*134098-61-6*	*II*	*27*	*156052-68-5*	*U*	*46*
122931-48-0	U	45	136191-56-5	U	45	161050-58-4	U	43
123343-16-8	III	37	136849-15-5	U	40	168316-95-8	III	37
124495-18-7	U	45	138164-12-2	II	24	*173584-44-6*	*II*	*29*
125116-23-6	II	29	138261-41-3	II	28	*178928-70-6*	*U*	*45*
125401-75-4	III	34	139528-85-1	U	43	181274-17-9	U	41
126535-15-7	U	46	140923-17-7	U	42	*187166-40-1*	*U*	*45*
126833-17-8	U	41	*141517-21-7*	*U*	*46*	*188425-85-6*	*U*	*39*
130000-40-7	U	45	142459-58-3	II	28	*203313-25-1*	*III*	*37*
131341-86-1	*U*	*41*	144740-54-5	U	42	219714-96-2	U	44
131807-57-3	U	41	145701-21-9	U	40	*374726-62-2*	*U*	*43*
131860-33-8	U	39	145701-23-1	U	41	*500008-45-7*	*U*	40
131929-60-7	U	45	149253-65-6	U	42			

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.

INDEX. CLASSIFICATION OF ACTIVE PESTICIDE INGREDIENTS, CONTINUED

Ia = Extremely hazardous; Ib = Highly hazardous; II = Moderately hazardous; III = slightly hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified; O = Obsolete as pesticide, not classified.