

THE AGROCHEMICALS HANDBOOK

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INTRODUCTION

The area of agrochemicals information is of great importance and is in a state of continual change. New agrochemicals appear on the market, new formulations of existing active ingredients are made available, new uses for existing products are announced, and indeed some products and active ingredients disappear from the market as they are superseded by more effective or safer agrochemicals. In such a situation, the best form of publication is one which is regularly updated (e.g. every 6-9 months), so that the most recent information is always available, rather than one which merely appears as a new edition every 2-3 years.

One publication in this area which is regularly updated is the German-language book Werner Perkow: *Wirksubstanzen der Pflanzenschutz- und Schädlingsbekämpfungsmittel*, published by Verlag Paul Parey of Berlin and Hamburg, of which a completely updated second edition has recently been published. It was felt that this important source of agrochemicals data would have a wider appeal generally if it was available in the English language, and thus an agreement was concluded between The Royal Society of Chemistry (RSC) and Verlag Paul Parey for the RSC to publish a translated version of the German book. However *The Agrochemicals Handbook* is not simply a straight translation of the German-language book. It has been supplemented with additional information and data from a number of sources worldwide to give it a more international appeal and greater usefulness. Because of the RSC's extensive and long-standing experience with chemical nomenclature, a very wide selection of names (common, systematic, trivial, trade) has been brought together in this publication, and a comprehensive index of names allows rapid access to information on any active ingredient. Other areas for which supplementary material has been added include the Chemical Abstracts Service Registry Numbers, the range of formulations available, details of mixed products (i.e. those containing more than one active ingredient), and additional information on uses of agrochemicals. A number of active ingredients not present in the German book have also been included. As far as the United Kingdom is concerned, some of the material relating to formulations and uses has been obtained from the publication *Approved Products for Farmers and Growers* and is reproduced with the permission of the Controller of Her Majesty's Stationery Office. However, information on formulations and uses in many other countries, obtained from a number of sources, is also included in the book. Some of the information in the German book has not been included in this edition of *The Agrochemicals Handbook*, as it was considered to be of relevance only to Germany; for example, poison classifications, tolerance levels and pre-harvest intervals, for which each country has its own regulations.

The Agrochemicals Handbook will be updated at regular intervals by the publication of sets of update sheets for those active ingredients for which new information is available or for which some of the information has changed. If any changes occur in the indexes, e.g. additional names for an existing or new active ingredient, then a completely updated set of indexes will be produced at the same time. Details of how to obtain information regarding the availability and cost of the updates can be found on page 9.

HOW TO USE THE AGROCHEMICALS HANDBOOK

The Agrochemicals Handbook contains a list of abbreviations used in the text, literature references, a list of active ingredient manufacturers, a comprehensive chemical name index, and a series of biological activity listings. Following these indexes and listings is the main body of the book, consisting of individual sheets relating to each active ingredient.

The manufacturers of the active ingredients included in this book are listed alphabetically by name, together with the address of the headquarters of each organisation. The addresses of the company or its subsidiaries in other countries are also given where appropriate.

The main index is an alphabetical listing of all Common Names, other names and trade names included in this book. Because entering the book via a systematic chemical name is rarely done, and also because of the complex nature of these names, with a preponderance of locants, hyphens, commas, etc., systematic chemical names have not been included in this index. A typical section of the index is shown below:

direct access to Common Name	DDD, <i>see</i> TDE DDT DDTC, <i>see</i> di-allyl DDVP, <i>see</i> dichlorvos decamethrin, <i>see</i> deltamethrin Decis, <i>see</i> deltamethrin Dedevap, <i>see</i> dichlorvos DEET dichlorprop dichlorvos diclofop-methyl dicofol	cross reference to Common Name
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The index includes two types of entry:

- (i) **Common Names** — Each active ingredient Common Name has an entry in the index in bold type, and, as the sheets relating to individual active ingredients are arranged within the book alphabetically by Common Name, it is a simple matter to locate a particular active ingredient sheet, given the Common Name.

ABBREVIATIONS USED IN THE TEXT

a.i.	active ingredient
ANSI	American National Standards Institute
AOAC	Association of Official Analytical Chemists (before 1966, Association of Official Agricultural Chemists)
BAL	dimercaprol (British Anti-Lewisite)
b.p.	boiling point
BSI	British Standards Institution
°C	degrees centigrade
CA	Chemical Abstracts (used for 9th Collective Index Names)
ca.	about
cf.	compare
CIPAC	Collaborative International Pesticides Analytical Committee
d.	density
e.g.	for example
et al.	and others (used for authors)
etc.	and so on
°F	degrees fahrenheit
FAO	Food and Agriculture Organisation (of the United Nations)
g	gram (hence also ng, μ g, mg, kg, etc.)
ha	hectare
ibid.	in the journal last mentioned
i.e.	that is
i.p.	intraperitoneal
IR	infra-red
ISO	International Standardization Organization
IUPAC	International Union of Pure and Applied Chemistry
i.v.	intravenous
JMAF	Japanese Ministry for Agriculture and Forestry
l	litre (hence also ml etc.)
lb	pound
LC50	concentration required to kill 50% of test animals
LD50	dose required to kill 50% of test animals
m	metre (hence also nm, mm, etc.)
M	molarity
mb ar	millibar; 1mm Hg = 1.33 mbar
m.p	melting point
N	normality
PAM	2-pyridine aldoxime methiodide (pralidoxime iodide)
PAMCl	pralidoxime chloride
PAMM	pralidoxime mesylate
ppm	parts per million
ULV	ultra low volume (<5 l/ha)
UV	ultraviolet
vol.	volume
WHO	World Health Organisation
WSSA	Weed Science Society of America
wt.	weight

REFERENCES AND FURTHER READING

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MAKE SURE THAT INFORMATION RELATING TO YOUR PRODUCTS IS INCLUDED IN THIS BOOK, ACCURATELY AND UP TO DATE

Since agrochemicals is a rapidly-changing field, we have decided to produce regular updates to keep the contents of this book as up-to-date as possible. Hence the editors would be grateful to receive any new information on agrochemicals (for example, new active ingredients, new formulations, new uses of existing products) and/or data sheets for inclusion in these updates.

Whilst every care has been taken in the compilation of this book, it is almost inevitable that, in a work of this size and complexity, a small number of inaccuracies may have arisen. The editors would be very grateful if they could be notified of any such inaccuracies, so that necessary changes may be included in a future update sheet.

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Mitchell Cotts Chemicals Ltd., P.O. Box 6, Steanard Lane, Mirfield, W. Yorks., WF14 8QB, UK.

Mobay Chemical Corp., Agricultural Chemicals Division, P.O. Box 4913, Hawthorn Road, Kansas City, MO 64120, USA.

Mobil Chemical Co., P.O. Box 26683, Richmond, VA 23261, USA.

Monsanto Agricultural Products Co., 800 North Lindbergh Boulevard, St. Louis, MO 63167, USA.

Austria: Monsanto Ges. m.b.H., Am Stadtpark (Hilton Center), A-1030 Wien.

Belgium: Monsanto Europe S.A., Avenue de Tervuren 270-272, 1150 Bruxelles.

Denmark: Monsanto A/S, Naverland 11, 2600 Glostrup.

France: Monsanto S.A. (Division Agrochimie), Vaugelas-Roche - B.P. 52, 38290 La Verpilliere.

W. Germany: Monsanto (Deutschland) GmbH, Immermannstrasse 3-5, 4000 Duesseldorf.

Italy: Monsanto Italiana, Via Melchiorre Gioia 18, 20124 Milano.

Netherlands: Monsanto B.V., Jan van Nassastraat 53-55, 's-Gravenhage.

Spain: Monsanto Espana S.A., Orense 4, 9 B, Madrid-20.

Sweden: Monsanto Scandinavia AB, Norra Neptunigatan 3, 211 20 Malmoe.

UK: Monsanto PLC, Agricultural Division, Thames Tower, Burleys Way, Leicester LE1 3TP.

Montedison Group; Farmoplant, S.p.A., Piazza Della Repubblica 6, 20124 Milano, Italy.

Austria: Montedison Handelsgesellschaft mbH, Karlsplatz 1, A-1010 Wien.

Belgium: Montedison Belgio S.A., Avenue Louise 326, Bte 50, 1050 Bruxelles.

W. Germany: Montedison Deutschland GmbH, Postfach 56 26, Frankfurter Strasse 33-35, 6236 Eschborn Bei Frankfurt.

Spain: Montedison Hispania, S.A., Torre de Madrid, Pl. de Espana 18, planta 19-3, Madrid-13.

Switzerland: Montedison (Suisse) SA, St. Jakobstr. 25, 4000 Basel.

UK: Montedison (U.K.) Ltd., 7/8 Lygon Place, Ebury Street, London SW1W 0JR.

Motor: co Inc., 267 Vreeland Avenue, P.O. Box 300, Paterson, NJ 07543, USA.

MSD AGVET See Merck Sharp and Dohme.

Murphy Chemical Ltd., Latchmore Court, Brand Street, Hitchin, Herts. SG5 1HZ, UK.

Niklor Chemical Co. Inc., 2060 E. 220th St., Long Beach, CA 90810, USA.

Nippon Kayaku Co. Ltd., New Kaijo Building 2-1, 1-chome, Marunouchi, Chiyoda-ku, Tokyo-100, Japan.

Nippon Soda Co. Ltd., Agro-Pharm. Div., No 2-1, Ohtemachi-2, Chiyoda-ku, Tokyo-100, Japan.

Nissan Chemical Industries Ltd., Agricultural Chemicals Division, 7-1, 3-chome, Kanda-Nishiki-cho, Chiyoda-ku, Tokyo-101, Japan.

NOR AM Agricultural Products Inc., 350 West Shuman Boulevard, Naperville, IL 60566, USA.

Occidental Chemical Co., 16777 Howland Avenue, P.O. Box 198, Lathrop, CA 95330, USA.

Olin Corp., P.O. Box 991, Little Rock, AR 72203, USA.

PBI Gordon Corp., 1217 West 12th Street, Kansas City, MO 64101, USA.

Pecten Chemicals Inc., One Shell Plaza, P.O. Box 4407, Houston, TX 77210, USA.

Penick Corp., 1050 Wall Street West, Lyndhurst, NJ 07071, USA.

Pennwalt Corp., 1630 East Shaw Avenue - Suite 179, Fresno, CA 93710, USA.

France: Pennwalt France (Departement Agchem Decol), B.P. 32 - 1 rue des Freres-Lumiere, 78370 Plaisir.

Netherlands: Pennwalt Holland BV, Postbus 7120, NL-3000 HC Rotterdam.

Spain: Pennwalt Iberica S.A., Villa de Madrid 50, Fuento del Jarro, Aptdo. 45, Paterna (Valencia).

Pestcon Systems Inc., P.O. Box 469, Alhambra, CA 91802, USA.

Philips-Duphar BV, Crop Protection Division, P.O. 54, 's-Graveland, Netherlands.

PPG Industries Inc., One Gateway Center, Pittsburgh, PA 15222, USA.

Prentiss Drug and Chemical Co. Inc., 363 Seventh Avenue, New York, NY 10001, USA.

Procida (Groupe Roussel Uclaf), Saint-Marcel, 13367 Marseille Cedex 4, France.

Quimica Estrella, Agrochemical Dept., Av. Constituyentes 2995, 1427 - Buenos Aires, Argentina.

Rhone-Poulenc Agrochimie, BP 9163, Rue Pierre Baizet, 69263 Lyon Cedex 1, France.

Austria: Rhone-Poulenc Handelsgesellschaft m.b.H., Am Heumarkt 6, A-1030 Wien.

W. Germany: Rhone-Poulenc GmbH, Delegation Agrochimie, Staedelstr. 10, Postfach 70 10 29, 6000 Frankfurt/Main 70.

Portugal: Rhone-Poulenc Agrop-Produtos Quimicos, Lda, Rua Antonio Enes 25-2, 1 000 Lisboa.

Switzerland: Rhone-Poulenc (Suisse) S.A., 63 rue de Lausanne, 1211 Geneve 21.

USA: Rhone-Poulenc Inc., P.O. Box 125, Monmouth Junction, NJ 08852.

Rigo Corp., P.O. Box 89, Buckner, KY 40010, USA.

Rohm and Haas Co., Independence Mall West, Philadelphia, PA 19105 USA.

Austria: Rohm and Haas Ges. m.b.H., Marokkanergasse 16, Postfach 131, A-1037 Wien.

France: Rohm and Haas France S.A., La Tour de Lyon - 185 rue de Bercy, 75579 Paris Cedex 12.

W. Germany: Rohm and Haas Deutschland GmbH, Rheinstrasse 29, 6000 Frankfurt/Main.

Italy: Rohm and Haas Italia, Via Vittor Pisani 26, 20124 Milano.

Portugal: Rohm and Haas (Portugal), Av. Columbano Bordalo Pinheiro, 74-7., Dto, 100 Lisboa.

Spain: Rohm and Haas Espana S.A., Provenza 216, Barcelona-36.

Sweden: Rohm and Haas Nordiska AB, Box 11045, 161 11 Bromma.

UK: Rohm and Haas (U.K.) Ltd., Agrochemical Dept., Lennig House, 2 Mason's Avenue, Croydon, Surrey, CR9 3NB.

Roussel Uclaf, Division Agro-Veterinaire, 163 Avenue Gambetta, 75020 Paris, France.

Sandoz AG, Lichtstrasse 35, CH-4002, Basle, Switzerland.

Belgium: Sandoz S.A., Chaussee de Haecht 226, 1030 Bruxelles.

France: Sandoz (Produits), 14 boulevard de Richelieu - B.P. 318, 92506 Rueil-Malmaison Cedex.

W. Germany: Sandoz AG, Techn. Buero fuer die Bundesrepublik, Seebachweg 1, 7121 Mundelsheim.

Italy: Sandoz, Divisione Agrochimica, Via C. Arconati 1, 20135 Milano.

Netherlands: Sandoz B.V., Loopkantstraat 25, Postbus 91, Uden (N.Br.).

Portugal: Produtos Sandoz, Lda, Rua de S. Caetano 4, 1200 Lisboa.

Spain: Sandoz S.A.E., Gran Via de les Corts, Catalanes 764, Aptdo. 708, Barcelona-13.

UK: Sandoz Products Ltd., Norwich Union House, 16/18 Princes Street, Ipswich, Suffolk, IP1 1QT.

USA: Sandoz Inc., 480 Camino del Rio South - Suite 204, San Diego, CA 92108.

Sankyo Co. Ltd., 17 10, 3-chome Ginza, Chuo-ku, Tokyo-104, Japan.

Schering AG, Agrochemical Division, P.O. Box 65 03 11, D-1000 Berlin 65, W. Germany.

Austria: Schering Wien Ges. m.b.H., Scheringgasse 2, A-1140 Wien.

Belgium: Schering Agro N.V., Mommaertslaen 14, 1920 Machelen.

France: Schering-France, 5 rue Le Corbusier - Silic 237, 94528 Rungis Cedex.

Italy: Schering, Via Mancinelli 7, 20131 Milano.