

US EPA ARCHIVE DOCUMENT

October 20, 1989

MEMORANDUM

SUBJECT: EFED list A Inventory Meeting for Special Review Chemicals

FROM: Bill Evans *[Signature]*
EFED/SPSMS

TO: Henry Jacoby, Chief
Paul Mastradone
Emil Regelman
Bob Holst
Herb Manning
Environmental Fate & Ground Water Branch
H7507C

James Akerman, Chief
Harry Craven
Norm Cook
Doug Urban
Ray Matheny
Ecological Effects Branch
H7507C

Regretfully, I wish to inform you that we are not yet quite finished with with the List A Inventory. There still remains a number of Special Review chemicals which will need to be discussed in our division.

The meeting is scheduled in Anne Barton's office (RM 1121) ON WEDNESDAY OCTOBER 25 FROM 1:30 TO 3:00 PM.

The chemicals that will be covered during this meeting are:

DDVP
ALDICARB
LINDANE
CAPTAN

John Niles
Dave Warburton
Anne Stavola
Otto Detenson

[Signature]
ANTHOZIDE
METHOXY
MELACHLOR

* Previously discussed in SRRD meeting. May require further discussion

Other chemicals which will be discussed in future meeting include the following.

EHTYL PARATHION

TELONE

TPTH

Thank you for your cooperation!!

cc Anne Barton, Director
Paul Schuda, Deputy Director
Amy Rispin, Chief, SACS

GROUP -
 CHEMICALS IN SPECIAL REVIEW THAT WOULD BE CANDIDATES FOR
 REREGISTRATION

	A	B	C	D	E	F
	CHEMICAL	TOX	EFGWB	EEB	NDEB	OVR'L/DTE
1						
2						
3	ALACHLOR					
4	ALDICARB					
5	AMITROLE					
6	ARSENIC ACID					9/7
7	CAPTAN					
8	CARBOFURAN					
9	DAMINOZIDE					
10	DDVP					
11	DIAZINON					
12	ETHYL PARATHION					
13	LINDANE					
14	MANCOZEB					
15	MANEB					
16	METIRAM					
17	NABAM					
18	OXDEMETON-METHYL					8/7
19	TELONE					
20	TPTH					

2

ONCOGENICITY CHOLINESTERASE INHIBITION ONCOGEN ONCOGENICITY/GROUND WATER ONCOGENICITY AVIAN EFFECTS ONCOGENICITY ONCOGENICITY (liver chold) AVIAN EFFECTS AVIAN TOX/HUMAN TOX KIDNEY EFFECTS ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/TERATOGENICITY ONCOGENICITY/POT. DEV. EFFECTS	SPECIAL REVIEW TRIGGER(S)
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TABLE A
 GENERIC DATA REQUIREMENTS FOR ALDICARB

Data Requirement	Composition	Use Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?
\$158.155 Nontarget Insect (continued)					
<u>NONTARGET INSECT TESTING - AQUATIC INSECTS:</u>					
142-1 - Acute toxicity to aquatic insects	(Reserved) 5/				
142-2 - Aquatic insect life-cycle study	(Reserved) 5/				
142-3 - Simulated or actual field testing for aquatic insects	(Reserved) 5/				
143-1 - <u>NONTARGET INSECT TESTING - PREDATORS AND PARASITES</u>	(Reserved) 5/				
143-3					

- 1/ Composition: TGA = Technical grade of the active ingredient; TEP = Typical end-use product.
- 2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
- 3/ As Aldicarb is registered only as a granular formulation, there is no potential for bee exposure. Thus, testing beyond the first tier is not required.
- 4/ Reserved pending development of test methodology.
- 5/ Reserved pending Agency decision as to whether the data requirement should be established.

III. 19
 Prog. N. 19

TABLE A
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\$158.155 Nontarget Insect (continued)					
<u>NONTARGET INSECT TESTING - AQUATIC INSECTS:</u>					
142-1 - Acute toxicity to aquatic insects			(Reserved) 5/		
142-2 - Aquatic insect life-cycle study			(Reserved) 5/		
142-3 - Simulated or actual field testing for aquatic insects			(Reserved) 5/		
143-1 - <u>NONTARGET INSECT TESTING - PREDATORS AND PARASITES</u>			(Reserved) 5/		
143-3					

- 1/ Composition: TGA1 = Technical grade of the active ingredient; TEP = Typical end-use product.
- 2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
- 3/ As Aldicarb is registered only as a granular formulation, there is no potential for bee exposure. Thus, testing beyond the first tier is not required.
- 4/ Reserved pending development of test methodology.
- 5/ Reserved pending Agency decision as to whether the data requirement should be established.

Pro III.

TABLE A
 GENERIC DATA REQUIREMENTS FOR ALDICARB

Data Requirement	Composition	1 / Use 2 /		Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?
		Pattern				

\$158.155 Nontarget Insect

NONTARGET INSECT TESTING - POLLINATORS:

141-1 - Honey bee acute contact LD50		TCGI	A,B	Yes	00036935	No
141-2 - Honey bee - toxicity of residues on foliage		TEP	A,B	No	-	No3/
141-3 - Wild bees important in alfalfa pollination - toxicity of residues on foliage		TEP	A,B	No	-	No3/
141-4 - Honey bee subacute feeding study		(Reserved) 4/				
141-5 - Field testing for pollinators		TEP	A,B	No	-	No3/

\$158.145 Wildlife and Aquatic Organisms (cont.)

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- 1/ Composition: TCAI = Technical grade of the active ingredient; PAI = pure active ingredient; TEP = Typical end-use product; A=Terrestrial, Food Crop; B=Terrestrial, Non-Food Crop; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
- 2/ The use patterns are coded as follows: APR 1980 Such data should determine whether D=Aquatic, Non-Food; E=Greenhouse, Food Crop.
- 3/ Data must be submitted no later than APR 1980 on avian and small mammal populations. Such data should determine whether A=Terrestrial, Food Crop; B=Terrestrial, Non-Food Crop; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
- 4/ Data are needed which quantify the impact on avian and small mammal populations. Such data should determine whether A=Terrestrial, Food Crop; B=Terrestrial, Non-Food Crop; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
- 5/ This requirement is reserved pending registrant satisfying certain environmental fate data requirements (photo-degradation in water, aquatic metabolism, leaching and adsorption/desorption, and laboratory and field volatility) and information concerning aldicarb transport to water via runoff.

* Data submitted by Union Carbide. These data may be compensable.

TABLE A
 GENERIC DATA REQUIREMENTS FOR ALDICARB

Data Requirement	Composition	1/ Use	2/ Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>\$158.145 Wildlife and Aquatic Organisms</u> (continued)						
72-3 - Acute LC50 Estuarine and Marine Organisms a. shrimp b. fish c. mollusk	TGAI		A,B	Yes	00066341	No
72-4 - Fish Early Life Stage and Aquatic Invertebrate Life-Cycle a. Freshwater fish b. shrimp	TGAI		A,B	Partially	GS0140105	Reserved ^{5/}
72-5 - Fish - Life-Cycle	TGAI		A,B	Yes	00066341	No
72-6 - Aquatic Organism Accumulation	TGAI, PAI OR Degradation Product		-	N/A	-	No
72-7 - Simulated or Actual Field Testing - Aquatic Organisms	TEP		A,B	No	-	Reserved ^{6/}

3002

ENVIRONMENTAL PROTECTION AGENCY
PROGRAM MANAGEMENT AND SUPPORT DIVISION
PESTICIDE DOCUMENT MANAGEMENT SYSTEM (PDMS)

GUIDELINE SEQUENCE BIBLIOGRAPHY
EXPANDED FORMAT

ALDICARB
LOIS ROSSI

BRANCH: ENVIRONMENTAL EFFECTS

GDLN

71-1

MRID CITATION

- 00148695 Balcomb, R.; Stevens, R.; Bowen, C. (1984) Toxicity of 16 granular insecticides to wild-caught songbirds. Bulletin of Environmental Contamination and Toxicology 33:302-307.
- 00148698 Benjamini, L. (1981) Testing aldicarb as a bird repellent in a sprouting sugar beet field. Phytoparasitica 9(2):89-94.
- 00148703 Hill, E.; Camardese, M. (1984) Toxicity of anticholinesterase insecticides to birds: Technical grade versus granular formulations. Ecotoxicology and Environmental Safety 8:551-563.
- 00148704 Hilbig, V.; Westphal, D.; Lucas, K.; et al. (1979) Vergleichende Untersuchungen zur Vogeltoxizitaet mit Zwei Granulatformulierungen des Nematizides Temik [Comparative Studies of the Toxicity to Birds of Two Granulated Formulations of Temik Nematocides]: Vetmed-Berichte 2/1979. Unpublished study prepared by Institute of Veterinary Medicine. 24 p.
- 00148707 Medd, R.; Burrows, I.; Roberts, N.; et al. (1972) The Determination of the Single Dose Oral LD50 (24 Hour Value) and Residual Levels of Temik (Coal) in the Pheasant: Amended: 5355/72/751. Unpublished study prepared by Huntingdon Research Centre. 28 p.

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LOIS ROSSI

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71-1

MRID CITATION

00148709 Ross, D.; Roberts, N.; Cameron, D. (1977) A Comparison of the Acute Oral Toxicity (LD50) of Three Formulations of Temik to the Japanese Quail: UNC 68 W/771042. Unpublished study prepared by Huntingdon Research Centre. 12 p.

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GDLN

71-2

MRID CITATION

00148705 Lund, R. (1970) Summary of Field Observations: Potential Hazard of Temik 10G Aldicarb Pesticide to Ring-necked Pheasant ... from Simulated Spills. Unpublished study prepared by State of New Jersey, Dept. of Conservation and Economic Development, Black River Wildlife Management Area. 2 p.

00148706 Medd, R.; Roberts, N. (1972) Palatability and Acceptability of Temik (Corn Cob and Coal Formulations) to the Pheasant and the Pigeon: 5419/72/815. Unpublished study prepared by Huntingdon Research Centre. 31 p.

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EXPANDED FORMATALDICARB
LOIS ROSSIBRANCH: ENVIRONMENTAL EFFECTS
-----GDLN

71-5

MRID CITATION

- 00132989 Ashton, A.; Jackson, W. (1983) Letter sent to Union Carbide dated Nov 18, 1983: Temik field trial (Michigan): Effects on wild-life. (Unpublished study received Dec 13, 1983 under 264-330; prepared by Bowling Green State Univ., submitted by Union Carbide Agricultural Products Co., Inc., Research Triangle Park, NC; CDL:251947-A)
- 00144970 Jackson, W. (1984) Letter sent to T. DeWitt dated June 21, 1984: [A Field study to evaluate the hazard to birds in Corn Fields treated with Temik. 6 p.
- 00148685 Ross, D.; Roberts, N.; Eichler, A. (1977) Temik 10G--Gypsum Formulation (Blue): Wildlife Surveys following Application to Four Sugar Beet and Four Potato Fields: UNC 57/774581. Unpublished study prepared by Huntingdon Research Centre. 255 p.
- 00148691 Tait, F. (1972) Aldicarb: Wild Life Survey 1972. Unpublished study prepared by Duphar-Midox Ltd. 28 p.
- 00148692 United Kingdom, Ministry of Agriculture, Fisheries & Food, Pest Infestation Control Laboratory (1974) A Study of the Effects of Aldicarb on Wildlife. Unpublished study. 65 p.

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71-5

MRID CITATION

- 00148693 Brown, P.; Bunyan, P.; Stanley, P.; et al. (1975) Field Surveillance of the Possible Wildlife Hazards Associated with the Use of the Nematicide, Aldicarb: Chemistry Department Report No. 17. Unpublished study prepared by U.K. Ministry of Agriculture, Fisheries and Food, Pest Infestation Control Laboratory. 57 p.
- 00148696 Back, R. (1968) Temik 10G Granular Pesticide: Field Evaluation of Potential Hazard to Bobwhite Quail. Unpublished study prepared by Union Carbide Corp. 15 p.
- 00148697 Benjamini, L. (1981) The efficacy of seed treatment with aldicarb to establish conditioned aversion in birds to sprouting sugar beets. *Phytoparasitica* 9(1):3-9.
- 00148698 Benjamini, L. (1981) Testing aldicarb as a bird repellent in a sprouting sugar beet field. *Phytoparasitica* 9(2):89-94.
- 00148699 Clarkson, V.; Rowe, B. (1970) Temik Insecticide: Field Evaluations of the Toxic Hazard of Temik Formulations 10G, 10GV, 10GC and 10GVB4 to Bobwhite Quail: Project No. 111B32: File No. 12676. Unpublished study prepared by Union Carbide Corp. 15 p.

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71-5

MRID CITATION

- 00148700 Haines, R. (1970) Temik 10G Granular Pesticide: Field Evaluations of Potential Hazard of Temik 10G Aldicarb Pesticide to Valley Quail and Ring-necked Pheasants in Sugar Beet Plantings: Trial III. Unpublished study prepared by Union Carbide Corp. 8 p.

- 00148701 Haines, R. (1971) Continued Field Evaluations on the Potential Hazard of Temik 10G Aldicarb Pesticide to Valley Quail and Ring-necked Pheasants in a Cotton Planting. Unpublished study prepared by Union Carbide Corp. 7 p.

- 00148702 Haines, R. (1971) Continued Field Evaluations on the Potential Hazards of Temik 10G Aldicarb Pesticide to Bob White Quail in Cotton Plantings. Unpublished study prepared by Union Carbide Corp. 7 p.

- 00148705 Lund, R. (1970) Summary of Field Observations: Potential Hazard of Temik 10G Aldicarb Pesticide to Ring-necked Pheasant ... from Simulated Spills. Unpublished study prepared by State of New Jersey, Dept. of Conservation and Economic Development, Black River Wildlife Management Area. 2 p.

- 00148706 Medd, R.; Roberts, N. (1972) Palatability and Acceptability of Temik (Corn Cob and Coal Formulations) to the Pheasant and the Pigeon: 5419/72/815. Unpublished study prepared by Huntingdon Research Centre. 31 p.

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ALDICARB
LOIS ROSSI

BRANCH: ENVIRONMENTAL EFFECTS

GDLN

71-5

MRID CITATION

40607502 Fletcher, D. (1988) Application of Temik Brand 15G Aldicarb to
Three Major Crops: A Terrestrial Verbebrate Field Study: BLAL
Study No. 87 FV 3. Unpublished study prepared by Bio-Life
Associates, Ltd. 536 p.

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BRANCH: ENVIRONMENTAL EFFECTS

GDLN

72-1

MRID CITATION

00139863 Clarkson, V.A.; Hensley, W.H. (1968) Temik Insecticide: Toxicity of
Temik, Temik Sulfoxide, and Temik Sulfone Bluegill Sunfish.
Project No. 111B32. (Unpublished study received Jan 18, 1977
under 1016-EX-37; submitted by Union Carbide Corp., Arlington,
Va.; CDL:238153-C)

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LOIS ROSSIBRANCH: ENVIRONMENTAL EFFECTS
-----GDLN

121-1MRID CITATION

- 00124047 Union Carbide Corp. (1975) Effectiveness Data: †Temik|. (Compilation; unpublished study received Oct 1, 1975 under 6G1689; CDL:095061-A)
- 00126688 Union Carbide Agricultural Products Co., Inc. (1983) Effectiveness Data: †Temik|. (Compilation; unpublished study received Feb 25, 1983 under 264-330; CDL:071499-A)
- 00135031 Union Carbide Agricultural Products Co., Inc. (1976) The Results of Tests on the Amount of Residue Remaining, Including a Description of the Analytical Method Used: †Aldicarb in Dry Beans and Soybeans|. (Compilation; unpublished study received Aug 10, 1976 under 6F1849; CDL:096405-B)
- 00140367 Back, R.C. (1970) Letter sent to Harold G. Alford dated Mar 2, 1970: Temik 10G aldicarb pesticide--Third and final periodic report. (Unpublished study received Mar 3, 1970 under 1016-EX-30; submitted by Union Carbide Corp., Arlington, Va.; CDL:126506-A)

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GUIDELINE SEQUENCE BIBLIOGRAPHY
SUMMARY FORMAT

ALDICARB
LOIS ROSSI

BRANCH: ENVIRONMENTAL EFFECTS

GDLN	MRID					
71-1	148695	148698	148703	148704	148707	148709
71-2	148705	148706				
71-5	132989	132989	144970	148685	148691	148692
	148693	148696	148697	148698	148699	148700
	148701	148702	148705	148706	40607502	40607502
72-1	139863					
121-1	124047	126688	135031	140367		

GENERAL CATEGORY: _____

SPECIFIC CATEGORY: _____

LIST A PROJECT
INVENTORY SUMMARY SHEET

1. CHEMICAL CASE NAME: Aldicarb
2. CHEMICAL CASE NO.: 0140
3. PM 12
4. CAS NOS.: 116-06-3
5. CASWELL NO.: 011A
6. SHAUGHNESSY CODE(S): 098301
7. DATE OF ISSUANCE OF REGISTRATION STANDARD:
8. TYPE OF PESTICIDE:
9. USE PATTERN: Terrestrial Food Crop, Terrestrial Feed Crop, Terrestrial Non Food Crop, Greenhouse Non-Food Crop, ~~Indoor Non-Food~~, Residential Outdoor
10. SUMMARY OF DATA REQUIREMENTS AND STUDIES

DISCIPLINE	STUDIES REQ.	STUDIES REC'D.	STUDIES REV'D.	STUDIES NOT	STUDIES OUTSTAND. REV'D.	NEW REQ.
TOX.	-----	-----	-----	-----	-----	-----
ENVIRON. FATE	-----	-----	-----	-----	-----	-----
ECO.EFF.	-----	-----	-----	-----	-----	-----
PROD.CHEM.	-----	-----	-----	-----	-----	-----
RES.CHEM.	-----	-----	-----	-----	-----	-----
NDEB.	-----	-----	-----	-----	-----	-----
TOTALS	-----	-----	-----	-----	-----	-----

Note: 13% (7/55) product jackets were unobtainable from R.O.
Used CLF microfiche for 4 of 7 products.

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB*

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<u>Site Name</u>	<u>Page</u>
TERRESTRIAL FOOD CROP	
(Agricultural Crops)	
TERRESTRIAL NONFOOD CROP	
(Agricultural Crops)	
(Ornamental Plants and Forest Trees)	
GREENHOUSE NONFOOD CROP	
(Ornamental Plants and Forest Trees)	
Beans, Dried-Type	1
Beans (seed crop)	1
Birch	1
Carnation (greenhouse)	2
Chrysanthemum (greenhouse)	2
Coffee	2
Cotton	2
Dahlia	1
Daisies, Gerbera (greenhouse)	2
Easter Lily (greenhouse)	2
Grapefruit	2
Holly	1
Lemon	2
Lilies	3
Lime	2
Orange	3
Orchids (greenhouse)	2,3
Ornamental and/or Shade Trees (including nursery stock)	3
Ornamental Bulb, Corm and Rhizome Plants	4
Ornamental Evergreens (including nursery stock)	3
Ornamental Ferns	3
Ornamental Flowering Plants	3
Ornamental Plants	4
Ornamental Vines	3
Ornamental Woody Shrubs	3
Peanuts	4
Pecan	4
Pecan (nonbearing)	5
Poinsettia (greenhouse)	2
Potato	5
Rose	5
Snapdragon (greenhouse)	2
Sorghum	6
Soybeans	6
Strawberry (nursery stock)	6
Sugar Beets	6
Sugarcane	7

*Temik

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ALDICARB

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<u>Site Name</u>	<u>Page</u>
Sweet Potato	7
Tobacco (Flue Cured)	7

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(List A Inventory)

ALDICARB*.

TYPE PESTICIDE: Insecticide, Nematicide

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number

Beans, Dried-Type

Postemergence soil application (shanking).

(G)

000264-00330 000264-00331 000264-00426

CA810016 ID800037 OR820049

Postemergence soil application (side dressing).

(G)

000264-00330 000264-00331 000264-00426

CA810016 ID800037 OR820049 WA810033

Soil application at planting (band).

(G)

000264-00330 000264-00331 000264-00426

Soil application at planting (drilling).

(G)

000264-00330 000264-00331 000264-00426

Soil application at planting (in-furrow).

(G)

000264-00330 000264-00331 000264-00426

MI820012 WA810033

Beans (seed crop)

Postemergence soil application (shanking).

(G)

ID800037 WA810033

Postemergence soil application (side dressing).

(G)

ID800037 WA810033

Birch

Dahlia

Holly

Postemergence soil application (side dressing).

(G)

000264-00322

*Temik

Issued: 8-17-89

II-098301-1

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Carnation (greenhouse)
Chrysanthemum (greenhouse)
Easter Lily (greenhouse)
Daisies, Gerbera (greenhouse)
Poinsettia (greenhouse)
Rose (greenhouse)
Snapdragon (greenhouse)

Postemergence soil application.

(G)
000264-00322

Coffee

Soil application.

(G)
PR870001

Cotton

Postemergence soil application (side dressing).

(G)
000264-00330 000264-00331 000264-00426
AZ800008

Soil application at planting (band).

(G)
000264-00330 000264-00331 000264-00426

Soil application at planting (drilling).

(G)
000264-00319 000264-00330 000264-00331 000264-00426

Soil application at planting (in-furrow).

(G)
000264-00319 000264-00331 000264-00426

Grapefruit

Lemon

Lime

Soil application (band).

(G)
000264-00417
FL880003

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Grapefruit cluster (continued)

Soil application (shanking).

(G)
CA780038 FL880003

Lilies

Soil application at planting (in-furrow).

(G)
000264-00322

Orange

Soil application (band).

(G)
000264-00417
CA780038 FL880003

Soil application (shanking).

(G)
CA780038

Orchids (greenhouse)

Preemergence soil application.

(G)
000264-00322

Ornamental and/or Shade Trees (including nursery stock)

Ornamental Evergreens (including nursery stock)

Ornamental Ferns

Ornamental Flowering Plants

Ornamental Vines

Ornamental Woody Shrubs

Postemergence soil application (broadcast).

(G)
IL800003 MD780009 M0840001 OK840006 PA780005 WV780013

Postemergence soil application (side dressing).

(G)
IL800003 MD780009 M0840001 OK840006 PA780005 WV780013

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Ornamental Bulb, Corm and Rhizome Plants

Soil application at planting (band).

(G)

IL800003 MD780009 MO840001 OK840006 PA780005 WV780013

Soil application at planting (broadcast).

(G)

IL800003 MD780009 MO840001 OK840006 PA780005 WV780013

Soil application at planting (in-furrow).

(G)

IL800003 MD780009 MO840001 OK840006 PA780005 WV780013

Ornamental Plants

Soil application.

(G)

FL870009

Peanuts

Soil application at pegging (band).

(G)

FL780023 GA800019 NC800023 NC810033 VA800032

Soil application at planting (band).

(G)

000264-00330 000264-00331 000264-00426

FL780023 GA800019 NC800023 NC810033

Soil application at planting (in-furrow).

(G)

000264-00330 000264-00331 000264-00426

NC800023 NC810033 VA800032

Pecan

Soil application (band).

(G)

000264-00330 000264-00331 000264-00426

AL820033 AZ820015 GA820013 MS830009 NM820016 SC830009 TX790010

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Pecan (continued)

Soil application (shanking or injection).

(G)

000264-00330 000264-00331 000264-00426
AL820033 AL870008 AZ820015 GA820013 GA870003 MS830009 NM820016
SC830009 TX790010

Pecan (nonbearing)

Soil application (side dressing).

(G)

000264-00330 000264-00331 000264-00426
AZ820015 NM820016 TX790010

Potato

Postemergence soil application (band).

(G)

CT850001 DE850003 ME850002 NH850001 VA860006

Postemergence soil application (side dressing).

(G)

000264-00330 000264-00426

Soil application at emergence (band).

(G)

000264-00330 000264-00426

Soil application at planting (band).

(G)

000264-00330 000264-00426

Soil application at planting (drill).

(G)

000264-00330 000264-00426

Soil application at planting (in-furrow).

(G)

000264-00330 000264-00426

Rose

Soil application.

(G)

000264-00322
IL800003 MD780009 MO840001 OK840001 PA780005 WV780013

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB -

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Sorghum

Soil application at planting (band).

(G)
000264-00330 000264-00331 000264-00426

Soil application at planting (drilling).

(G)
000264-00330 000264-00331 000264-00426

Soil application at planting (in-furrow).

(G)
000264-00330 000264-00331 000264-00426

Soybeans

Soil application at planting (band).

(G)
FL800008 SC790011

Soil application at planting (drilling).

(G)
VA790016

Soil application at planting (in-furrow).

(G)
000264-00330 000264-00331 000264-00426
AR810011 LA810016 M0810011 MS820006

Strawberry (nursery stock)

Post-transplant soil application (band).

(G)
MD780009

Sugar Beets

Postemergence soil application (band).

(G)
000264-00330 000264-00331 000264-00426

Postemergence soil application (side dressing).

(G)
000264-00330 000264-00331 000264-00426

Soil application at planting (band).

(G)
000264-00330 000264-00331 000264-00426

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB -

Appendix B Report

Listing by Site/Use Pattern Statement/Form/Registration Number (continued)

Sugar Beets (continued)

Soil application at planting (drilling).

(G)

000264-00330 000264-00331 000264-00426

Sugarcane

Soil application at planting (band).

(G)

000264-00330 000264-00331

Soil application at stubble stage (band).

(G)

LA820010

Soil application at stubble stage (side dressing).

(G)

LA820010

Sweet Potato

Soil application at planting (band).

(G)

000264-00330 000264-00331

Tobacco (Flue Cured)

Soil application to plant bed, pretransplant (band).

(G)

NC780021 NC820008 VA820013

Soil application to plant bed, pretransplant (broadcast).

(G)

NC780021

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Listing of Registered Pesticide Products by Formulation

5% granular

aldicarb (098301), pentachloronitrobenzene (056502) plus 5-ethoxy-
3-(trichloromethyl)-1,2,4-thiadiazole (084701)
000264-00319

10% granular

aldicarb (098301)
000264-00322# 000264-00331
#fiche/label copy

(000264-00322) FL870009 IL800003 M0840001 OK840006
PR870001

(000264-00331) PR810009*
*jacket currently unavailable for review

(001016-00069)@ MD780009 PA780005 WV780013
@Federal parent label no longer registered

15% granular

aldicarb (098301)
000264-00330# 000264-00417# 000264-00426#
#fiche/label copy

(000264-00330) AL820033 AL870008 AR810011 AZ820015
CA810016 CT850001 DE850003 FL800008
GA800019 GA820013 GA870003 ID800037
LA810016 LA820010 ME850002 MI820012
MO810011 MS820006 MS830009 NC800023
NC810033 NC820008 NH850001 NM820016
OR820049 SC830009 VA800032 VA820013
VA860006 VT850002* WA810033

*jacket currently unavailable for review

(000264-00417) FL880003

(001016-00078)@ AZ800008 CA780038 FL780023 NC780021
NC790021* SC790011 TX790010 VA790016

*jacket currently unavailable for review
@Federal parent label no longer registered

EPA Index to Pesticide Chemicals
(List A Inventory)

ALDICARB

Appendix B Report

FOOTNOTES

1) The following SLN (24C) registrations have been omitted from this report because they are found on the, "Preliminary List of Section 24C Registrations For Which Voluntary Cancellation Has Been Requested in Response to the Maintenance Fee Mail Out as of 08/10/89":

AZ790018 CA760083 CA790110 CA820069 CA860017 HI780005 IL820004
MA840001 ME830004 NJ860001 NY780015 NY790003 TN810017 WA840053

2) Aldicarb is a Restricted Use Pesticide. For application by or under the direct supervision of a certified applicator.

3) The jacket for PR870001 is incomplete, only letter confirming site and pest is enclosed. The actual label is missing.

4) SLN parent labels 001016-00069 and 001016-00078 are no longer registered.

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th:

I. REGULATORY POSITION

A. Introduction

This guidance document describes the Agency's current regulatory position regarding continued registration of manufacturing use products (MPs) and end-use products (EPs) containing the insecticide, acaricide and nematocide aldicarb. The Agency's position is based on an evaluation of all registered uses and registered products with aldicarb as the sole active ingredient. This document considers known chemical and toxicological properties of this chemical, as well as established tolerances for residues in food and feed commodities. From these considerations the Agency sets forth the data and labeling requirements that must be met by registrants and applicants of aldicarb products in order for the products to be registered. These are interim requirements pending the outcome of the Special Review process for this chemical, which is being initiated by the Agency and will be conducted pursuant to 40 CFR 162.11. To be registrable under this document, MPs and EPs must list aldicarb as the sole active ingredient. However, products containing aldicarb will not be reregistered until the problem of ground water contamination, as discussed below, has been resolved. The tables accompanying this document list the data gaps which must be satisfied through submission of additional information.

B. Description of Chemical and Use Profile

Aldicarb - $C_7H_{14}N_2O_2S$; mol. wt. 190.3

C.A.S. # 116-06-3, Shaughnessy # 098301

Aldicarb is the accepted common name for 2-methyl-2-(methylthio)

propionaldehyde O-(methylcarbamoyl)oxime. Other names include the trade name Temik® and UC-21149.

Technical aldicarb is a white crystalline solid. It has a melting point of 98-100° C (pure material). Under normal conditions, aldicarb is a heat-sensitive, inherently unstable chemical and must be stabilized to obtain a practical shelf-life.

Aldicarb is a carbamate pesticide which causes cholinesterase inhibition at very low dosage levels. Its chief metabolites aldicarb sulfoxide and aldicarb sulfone are also potent cholinesterase inhibitors.

This insecticide, acaricide and nematicide is manufactured and registered in the United States solely by Union Carbide Corporation.

There are no federally registered MPs containing aldicarb. However, there are three federally registered EPs which contain aldicarb as the sole active ingredient. There is also one federally registered EP containing aldicarb in a mixture with the fungicides pentachloronitrobenzene and 5-ethoxy-3-(trichloromethyl) 1,2,4-thiadiazole. Aldicarb is a soil incorporated pesticide commercially formulated into a 5 percent(%) granular formulation, 10% granular formulations and a 15% granular formulation. Registered uses include beans (dried), cotton, grapefruit, lemons, limes, oranges, peanuts, pecans, potatoes, sorghum, soybeans, sugar beets, sugarcane, sweet potatoes, and ornamental plants. In addition to the federal registrations, there are twelve (12) intra-state registrations and sixty six (66) Special Local Need registrations for aldicarb.

C. Regulatory Position

Based on the review and evaluation of all available data and other relevant information on aldicarb, the Agency has made the following determinations:

1. Aldicarb is highly toxic by the oral, dermal and inhalation routes of exposure. Neither aldicarb or its metabolites have been demonstrated to be neurotoxic, oncogenic, teratogenic or mutagenic in valid data reviewed to date.
2. Union Carbide has voluntarily restricted the use of aldicarb products to certified applicators or people under their direct supervision in part to reduce to potential for further ground water contamination. Also, based on its high acute toxicity via the oral, dermal and inhalation routes of exposure, the Agency has determined that all aldicarb products must bear the "Restricted Use Pesticide" statement on the product label.
3. Aldicarb leaches through soil and has been found in ground water. The wide natural variability in soil types, weather patterns and aquifer characteristics make it impossible to specify a precise set of circumstances under which aldicarb will not reach ground water. In an effort to reduce further ground water contamination stringent label/use restrictions are being imposed by this guidance document. Also, an expedited Special Review of the aldicarb ground water contamination problem is being initiated under Section 162.11

other

(a)(6)(i) of Title 40 Code of Federal Regulations to determine whether aldicarb products could be labeled in any way that would both permit continued use and preclude ground water contamination at unacceptable levels and determine what such levels might be.

4. Although the Agency is unable to complete a full tolerance reassessment because of certain residue chemistry data gaps, the Agency concludes that changes in the present tolerances for aldicarb are not warranted at this time. The additional residue data being required under this document may necessitate a revision of specific tolerances in the future.
5. In the absence of adequate soil dissipation data and dermal exposure data, the Agency is imposing an interim 24-hour reentry interval for aldicarb.
6. MPs and EPs containing aldicarb as the sole active ingredient may be registered for sale, distribution, and use under the conditions set forth in the document pending the outcome of the Special Review Process.
7. Registrants must provide or agree to develop additional data, as specified in the tables in this guidance document, to maintain existing registrations or to obtain new registrations of substantially similar products.

D. Regulatory Rationale

The Agency has reviewed the available data concerning toxicology,

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environmental, residue and product chemistry, and ecological effects. Sufficient data are available to show that aldicarb has a high acute toxicity via the oral, inhalation and dermal routes of exposure and has been assigned to Toxicity Category I. The toxicology data base for aldicarb is nearly complete; however, additional mutagenicity tests are being required by this guidance document. Neither aldicarb nor its metabolites have been shown to be neurotoxic, oncogenic, teratogenic, or mutagenic in studies that have been reviewed to date.

Several data gaps have been identified in the areas of product chemistry and residue chemistry. These data gaps require the submission of additional information on the manufacturing process, chemical analysis, certification of upper limits of impurities, as well as large animal metabolism data and residue analyses of various food and feed commodities.

In 1979, aldicarb residues were found in drinking water wells located near aldicarb treated potato fields in Suffolk County, Long Island, New York at levels <200 parts per billion (ppb). The Agency's Office of Drinking Water subsequently established a Health Advisory Level (HAL) of 10 ppb for residues of aldicarb in drinking water. Aldicarb residues have since been found in drinking water wells at levels above 10 ppb in other states including Wisconsin, Florida, Maine, Connecticut, Delaware, Maryland, New Jersey, Rhode Island, Virginia and California.

As a result of the ground water contamination, Union Carbide Corporation voluntarily imposed use restrictions on their aldicarb products

intended to reduce further ground water contamination. First, aldicarb has been restricted from use in Suffolk County, Long Island, New York. Secondly, the use on potatoes has been limited to one application every other year and only after plant emergence in the counties of of Hartford in Connecticut, Kent and New Castle in Delaware, Franklin and Hampshire in Massachusetts, Worcester in Maryland, Atlantic, Burlington, Cumberland, Monmouth and Salem in New Jersey, Newport and Washington in Rhode Island and Accomack and Northampton in Virginia. Third, users are advised to apply aldicarb selectively and to avoid use in well drained soils, particularly in areas having shallow and unconfined aquifers. Fourth, the sale and use of all aldicarb products have been voluntarily restricted to certified applicators or people under their direct supervision.

While the Agency has voluminous ground water monitoring data and some descriptive environmental fate data on aldicarb, this information is not sufficient to fully assess the environmental fate of aldicarb. However, from these data and other information it has been determined that aldicarb and its sulfoxide and sulfone metabolites may leach in areas of fine to coarse textured soils, including those soils with a high organic matter content. Additional data on soil metabolism, soil and aquatic dissipation, leaching and volatility are being required to fully assess the environmental fate and transport of aldicarb and its metabolites.

Based on the current and the additional use restrictions imposed by this guidance document, the Agency believes that the potential for further ground water contamination will be reduced. However,

because of the ground water contamination problem an expedited Special Review is being initiated by the Agency to determine whether aldicarb products could be practically labeled to permit the continued use of the products, preclude further ground water contamination at unacceptable levels and determine what such levels might be.

The available data indicate that aldicarb is highly toxic to mammals, birds, estuarine/marine organisms and freshwater organisms. However, limited exposure is expected to mammals from a dietary standpoint. Data from field studies and the use history of aldicarb provide sufficient information to suggest that application of this pesticide may result in some mortality, if not local population reductions, in certain avian species. Whether these effects are excessive, long lasting, or likely to diminish wildlife resources cannot be stated with any degree of certainty. Therefore, additional field studies are needed which further quantify the impact on avian and small mammal populations.

The Pesticide Incident Monitoring System (PIMS) reports on aldicarb from 1966 through 1982, contained 165 incidents associated with human injury, 6 incidents involving animals, 6 incidences involving environmental contamination and 6 incidences involving non-target plants and crops. Most of the human incidents alleged that aldicarb was the cause of the poisoning, but there was insufficient evidence to support that conclusion. Those incidents involving confirmed aldicarb poisonings resulted from failure to use label recommended safety equipment while

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applying aldicarb.

Other incidents resulted from accidental spillage, ingestion of aldicarb, or the consumption of food commodities improperly treated with aldicarb.

In summary, the Agency has concluded that it can continue the registration, but not reregister this chemical at this time for the following reasons:

1. Adequate data are available to assess the acute oral, inhalation and dermal toxicological effects of this chemical on humans.
2. The review of the available data and other information on ground water contamination raises concerns of possible unreasonable adverse effects to man. The Special Review will investigate the practicality of labeling/use restrictions that would permit aldicarb's continued use while preventing ground water contamination at unacceptable levels of either aldicarb or its metabolites. Among other things, the Special Review will attempt to determine what such levels might be.
3. In accordance with the FIFRA, the Agency's policy is not to cancel or to withhold registration merely for the lack of certain data (See sections 3(c)(2)(B) and 3(c)(7) of FIFRA). Rather, publication of this document provides a mechanism for identifying data needs, and registration under this document allows for upgrading of labels during the

period in which the required data are being generated. When these data are received, they will be reviewed by the Agency. The Agency will then determine whether these data will affect the registration of this chemical.

E. Criteria for Products Subject to the Document

This guidance document covers all manufacturing use and end use products that contain aldicarb as the sole active ingredient. Registrants and applicants for registration of such products must comply with all terms and conditions described herein. This includes making a commitment to fill data gaps on a schedule specified by the Agency. Also, registrants and applicants for registration must follow the instructions contained in the document and complete and submit the appropriate forms within the specified timeframe.

F. Acceptable Ranges and Limits

1. Product Composition Standards

To be fully covered under this document, MPs and EPs must contain aldicarb as the sole active ingredient. Each product formulation proposed for registration must be fully described with appropriate certification of limits.

2. Acute Toxicity Limits

The Agency will consider for registration any MPs and EPs provided the product is supported by acute toxicity data and the labeling for the product bears appropriate precautionary statements.