



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402-2801

O. J. "Ike" Zeringue  
Senior Vice President, Nuclear Operations

MAR 7 1995

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of ) Docket Nos. 50-390  
Tennessee Valley Authority ) 50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - REQUEST FOR ADDITIONAL  
INFORMATION RELATED TO THE WATTS BAR ENVIRONMENTAL REVIEW (TAC NOS. M88691  
and M88692)

This letter provides TVA's response to the NRC's request for additional  
information dated February 14, 1995, concerning the environmental review  
for WBN. TVA understands that the additional information is needed to  
assist the NRC in addressing the concerns received from the public during  
the comment period from December 9, 1994 to February 14, 1995, concerning  
the draft supplement to the Watts Bar Final Environmental Statement  
(NUREG-0498, Supplement 1).

The enclosure provides the response to the NRC's request for additional  
information. If you should have any questions concerning this matter,  
please telephone John Vorees at (615)-365-8819.

Sincerely,



O. J. Zeringue

Enclosure

cc: See page 2

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Enclosure

cc (Enclosure):

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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2  
DRAFT NUREG-0498, SUPPLEMENT 1, FINAL ENVIRONMENTAL STATEMENT SUPPLEMENT  
REQUEST FOR ADDITIONAL INFORMATION (RAI)

The following provides TVA's response to the NRC's request for additional information dated February 14, 1995.

QUESTION 1

"Provide a short (2-3 sentence) paragraph describing the official status of WBN Unit 2."

RESPONSE 1

WBN Unit 2 is in construction status with a Construction Permit expiration date of December 1999. On December 12, 1994, TVA announced that it would not, by itself, complete WBN Unit 2 as a nuclear unit. Alternative arrangements for completing Unit 2 or possible conversion to another fuel source are being considered as part of TVA's integrated resource planning (IRP) process. WBN Unit 2 will remain in its present mode at least until the IRP process is completed in December 1995.

QUESTION 2

"If the status of WBN Unit 2 has changed, please provide TVA's employment plans for the WBN site. Previous plans called for site employment to fall to about 1,800 including 450 at WBN Unit 2. How will this now change?"

RESPONSE 2

WBN Unit 2 employment plans are contingent upon the outcome of TVA's IRP process as noted in Response 1 above. TVA anticipates maintaining the current employment level for WBN Unit 2 layup (preventative maintenance), at least until the completion of the IRP process in December 1995. Systems that are common to both units are being maintained under the Unit 1 level of effort. Insofar as site employment is concerned, the number of site employees is expected to fall to approximately 1300 when an operating status is achieved for Unit 1.

QUESTION 3

"Describe the method of handling solid waste disposal at the Watts Bar Plant. Specifically, is any solid waste disposed of in public or non-TVA owned landfills? Do these landfills fall under the jurisdiction of the state of Tennessee's Department of Solid Waste Management? If the answer is affirmative, what types of monitoring programs are in place to ensure that this waste is not hazardous?"

## ENCLOSURE

### WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 DRAFT NUREG-0498, SUPPLEMENT 1, FINAL ENVIRONMENTAL STATEMENT SUPPLEMENT REQUEST FOR ADDITIONAL INFORMATION (RAI)

#### RESPONSE 3

WBN solid waste is disposed of in state approved landfills as described in the Environmental Compliance Manual (ECM). The following paragraphs discuss the applicable ECM requirements.

Hazardous waste is managed in accordance with State and Federal regulations. WBN is classified as a large quantity generator under a State hazardous waste generator number 26400300035. Hazardous waste is shipped to the TVA Muscle Shoals storage facility for subsequent disposal. This facility is permitted to store hazardous waste.

Used oil is shipped offsite for energy recovery by an outside contractor.

Nonradioactive asbestos containing waste material is disposed of by contract in a Tennessee state-approved landfill.

Construction and demolition wastes are disposed of in the onsite landfill. This landfill is permitted by the State of Tennessee under permit number 721030025. Access to the landfill is controlled and materials deposited there are closely monitored by trained personnel.

Commercial solid waste and nonradioactive special wastes are disposed of by contract in state-approved landfills. WBN does not routinely monitor the shipments of solid waste to these landfills. Hazardous constituents of the commercial solid waste are controlled by the Chemical Traffic Control (CTC) Program. Hazardous materials are disposed of properly. Site personnel receive General Employee Training that describes the CTC Program and their responsibilities regarding safe handling of chemicals.

#### QUESTION 4

"Provide information on the status and contents of the report required by 10 CFR 50.33 (k)(1) indicating how reasonable assurance will be provided that funds will be available to decommission the facility."

#### RESPONSE 4

The NRC's regulations at 10 CFR 50.75(e)(C)(3)(iv) specifically provide that Federal Government utility licensees may provide a statement of intent containing a cost estimate or an amount based on an NRC formula, indicating that adequate decommissioning funds will be available when necessary. In July 1990, TVA notified NRC of its intent to have adequate funds available for decommissioning the Browns Ferry and Sequoyah Nuclear Plant units. In accordance with NRC regulations, TVA will also provide a statement of intent

ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2  
DRAFT NUREG-0498, SUPPLEMENT 1, FINAL ENVIRONMENTAL STATEMENT SUPPLEMENT  
REQUEST FOR ADDITIONAL INFORMATION (RAI)

to ensure adequate funding for decommissioning Watts Bar Unit 1 prior to the receipt of an operating license.

QUESTION 5

"Update the status of the program to restore populations of freshwater mussels, which was discussed in the following statement given in response to a public comment in the Draft Final Environmental Impact Statement for the Tennessee River and Reservoir System Operation and Planning Review (1990)."

"TVA recently initiated a long-term project aimed at restoring populations of freshwater mussels, including endangered species, in a large river segment where they occurred historically. The proposed increases in minimum flows and aeration of releases through TVA dams will support the goals of this project by recovering 180 miles of river habitat suitable to mussels."

RESPONSE 5

TVA began the Large-River Mussel Restoration Project in 1991 by resuming mussel propagation research and working with cooperators to select an initial reintroduction location. In 1992 the work on the project was deferred because reservoir release improvements had yet to be made at the dams upstream from possible reintroduction sites. The TVA large-river mussel project has not been restarted because restoration of native mussel populations in large-river reaches no longer appears likely to succeed. In addition, zebra mussels have spread to the Tennessee River and are projected to decimate native mussel populations in locations just downstream from large impoundments -- the precise areas which this project was designed to enhance. Since 1992 several reservoir release improvement projects have been completed but the potential for zebra mussel impacts has persisted or worsened. The U.S. Fish and Wildlife Service has been meeting with TVA and others to focus mussel protection efforts on identifying or establishing refuges from zebra mussels.

QUESTION 6

"Have herbicides been sprayed over the Watts Bar reservoir, or the stretch of the Tennessee River from the Watts Bar Dam to Hunter Shoals? If they have been used, identify the herbicide, provide the MSDS and the year it was used. Are there future plans to spray herbicides in the Tennessee River in this area?"

## ENCLOSURE

### WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 DRAFT NUREG-0498, SUPPLEMENT 1, FINAL ENVIRONMENTAL STATEMENT SUPPLEMENT REQUEST FOR ADDITIONAL INFORMATION (RAI)

#### RESPONSE 6

Attached to this enclosure are tables showing herbicide use since 1972, copies of labels and Material Safety Data Sheet (MSDS), and a table showing aquatic plant acreages since 1976.

TVA has not used herbicides for aquatic plant control on Watts Bar Reservoir since 1990. When herbicides were used, applications were restricted to designated areas along developed shoreline. Because of the low level of aquatic plants, TVA has no plans to use herbicides for aquatic plant control on Watts Bar Reservoir or the Chickamauga Reservoir from the Watts Bar Dam to Hunter's Bend (downstream of WBN, near Dayton, TN) in the foreseeable future. Additionally, there are no plans for at least 3 years to apply herbicides on any of the Chickamauga Reservoir. If aquatic plants recolonize the reservoir and create problems in areas designated for aquatic plant control, control options would be evaluated at that time.

#### QUESTION 7

"Provide information regarding whether any Species Recovery Plans have been issued by U.S. Fish and Wildlife for endangered or threatened species within the WBN or transmission line areas. If such recovery plans exist, please provide information on TVA's compliance with those plans."

#### RESPONSE 7

Seven federally-listed endangered or threatened species are discussed in the NRC's draft Supplemental Final Environmental Statement review and the TVA-NRC jointly prepared Biological Assessment for WBN. The U.S. Fish and Wildlife Service has prepared a recovery plan for each of these seven species and these recovery plans are cited in the WBN Biological Assessment. Recovery objectives are included in each of these plans. Although Federal agencies should be aware of these plans, these agencies are not required to assist in their implementation. Operation of WBN does not conflict with any of these plans.

Although not required, TVA routinely participates in a variety of recovery activities for listed species which occur in the Tennessee Valley. Agency biologists routinely exchange information on listed species with various U.S. Fish and Wildlife Service staff members. TVA biologists also participate in status surveys and other projects involving listed species when they occur in the area. For example, much of the distribution and population status information available on the endangered mussel species and the snail darter has been collected by TVA. TVA biologists also have participated actively in the monitoring and protection of bat caves in the Tennessee Valley and have been active participants in hacking and related projects concerning the bald eagle.

50-390

TVA

WATTS BAR 1

RESPONSE TO NRC'S REQUEST FOR ADDL INFO  
RE THE ENVIRONMENTAL REVIEW

3/7/95

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**-NOTICE-**

**ATTACHMENT**

**WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
ADDITIONAL INFORMATION  
QUESTION 6**



**AQUATIC PLANT ACREAGES  
SINCE 1976**

## AQUATIC PLANT / TVA RESERVOIRS

RESERVOIR	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
KENTUCKY	200	250	300	350	400	450	1478	1633	1633	316	2067	7112	6145	5718	2106	2813	2616	3467	415
PICKWICK				0						85	231	121	120	120	25	25	105	105	15
WILSON	150	175	20	5	15	30	25	25	25	25	30	30	30	30	30	0	5	55	10
WHEELER	20	20	20	100	325	758	800	800	2466	3105	6901	9650	9843	5991	1981	3462	4412	6577	6597
GUNTERSVILLE	6700	6800	6493	7708	10200	14441	14363	12055	11343	13798	16460	15909	20242	14166	7891	5166	5993	7613	9584
NICKAJACK	950	1000	1078	734	1025	1200	1150	1150	1166	1166	1485	1200	1200	1111	800	832	583	1001	1001
CHICKAMAUGA	125	1042	1981	1570	3280	5407	6488	6896	5341	5621	6865	6845	7455	3492	2127	680	387	1186	1186
WATTS BAR	10	10	10	59	125	903	712	1334	547	405	450	613	675	675	80	10	10	10	10
MELTON HILL	182	175	113	261	200	396	231	209	209	208	250	150	150	150	100	240	240	240	240
FORT LOUDOUN	140	150	138	200	215	126	135	139	139	50	130	50	50	50	25	25	25	25	25
TELLICO					11	20	25	25	35	35	150	44	103	941	368	340	228	246	246
TOTAL	8477	9622	10153	10987	15796	23731	25407	24266	22904	24814	35019	41724	46013	32444	15533	13593	14604	20545	19329

**TABLES**

**HERBICIDES USE ON TVA RESERVOIRS  
1972-1994**

HERBICIDE USE ON TVA RESERVOIRS----FY 1972 - FY 1977

RESERVOIR	FY1972 2,4-D LBS*	FY1973 2,4-D LBS*	FY1974 2,4-D LBS*	FY1975 2,4-D LBS*	FY1976 2,4-D LBS*	FY1976TP <sup>1</sup> 2,4-D LBS*	FY1977 2,4-D LBS*
Kentucky	0	0	0	0	0	0	0
Pickwick	0	19	0	0	0	0	0
Wilson	9067	19066	18065	3724	12578	12084	6384
Wheeler	484	346	0	0	0	0	38
Guntersville	180327	165699	214187	117078	53466	115786	107464
Nickajack	29640	33012	36452	22078	7220	19912	16644
Chickamaug	1463	1492	760	3876	7030	12160	13680
Watts Bar	88	267	86	608	2356	1520	2280
Melton Hill	2204	38466	23142	10108	15580	12350	19950
Fort Loudou	0	0	0	0	0	0	0
Tellico	0	0	0	0	0	0	0
TOTAL	223273	258367	292692	157472	98230	173812	166440

\*LBS=ACID EQUIVALENT OR ACTIVE INGREDIENT

1-Transition Period: July 1 - October 1, 1976

Moved end of fiscal year from July 1 to October 1

HERBICIDE USE ON TVA RESERVOIRS ----FY 1978

RESERVOIR	2,4-D LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	0	0	0
Pickwick	0	0	0
Wilson	0	0	0
Wheeler	0	0	0
Guntersville	109440	72	109512
Nickajack	16340	0	16340
Chickamauga	34124	0	34124
Watts Bar	2774	0	2774
Melton Hill	24054	0	24054
Fort Loudoun	6384	0	6384
Tellico	0	0	0
TOTAL	193116	72	193188

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TV RESERVOIRS ---FY 1979

RESERVOIR	2,4-D LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	0	0	0
Pickwick	0	0	0
Wilson	0	0	0
Wheeler	3040	0	3040
Guntersville	84550	0	84550
Nickajack	19000	1539	20539
Chickamauga	21850	24	21874
Watts Bar	6954	198	7152
Melton Hill	8436	0	8436
Fort Loudoun	10070	9	10079
Tellico	0	0	0
TOTAL	153900	1770	155670

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TVA RESERVOIRS ----FY 1980

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	0	0	0	0
Pickwick	0	0	0	0
Wilson	0	0	0	0
Wheeler	3040	0	0	3040
Guntersville	74024	0	0	74024
Nickajack	14972	2430	1005	18407
Chickamauga	18582	0	147	18729
Watts Bar	9044	0	666	9710
Melton Hill	18392	0	0	18392
Fort Loudoun	21736	0	51	21787
Tellico	0	0	0	0
TOTAL	159790	2430	1869	164089

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TVA RESERVOIRS ----FY 1981

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	0	0	0	0
Pickwick	0	0	0	0
Wilson	0	0	171	171
Wheeler	0	0	0	0
Guntersville	53428	8565	312	62305
Nickajack	5320	105	366	5791
Chickamauga	11362	2160	819	14341
Watts Bar	5966	270	39	6275
Melton Hill	29830	0	0	29830
Fort Loudoun	10792	0	18	10810
Tellico	0	0	0	0
TOTAL	116698	11100	1725	129523

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT



HERBICIDE USE ON TVA RESERVOIRS ----FY 1982

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	380	45	0	425
Pickwick	0	0	0	0
Wilson	0	0	0	0
Wheeler	0	0	0	0
Guntersville	40052	35295	0	75347
Nickajack	4674	2760	45	7479
Chickamauga	9310	8355	0	17665
Watts Bar	11438	1545	0	12983
Melton Hill	17632	0	0	17632
Fort Loudoun	2660	0	0	2660
Tellico	0	0	0	0
TOTAL	86146	48000	45	134191

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TVA RESERVOIRS ----FY 1983

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	TOTAL LBS*
Kentucky	0	0	0
Pickwick	0	0	0
Wilson	0	30	30
Wheeler	0	30	30
Guntersville	30856	29595	60451
Nickajack	5434	2475	7909
Chickamauga	9044	18465	27509
Watts Bar	13946	7350	21296
Melton Hill	17100	0	17100
Fort Loudoun	6764	2400	9164
Tellico	0	0	0
TOTAL	83144	60345	143489

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TVA RESERVOIRS ----FY 1984

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	TOTAL LBS*
Kentucky	0	0	0	0	0
Pickwick	0	0	0	0	0
Wilson	0	0	0	0	0
Wheeler	0	0	0	0	0
Guntersville	26974	43585	80	192	70831
Nickajack	1368	3555	0	0	4923
Chickamauga	3838	21825	0	0	25663
Watts Bar	10298	5400	0	0	15698
Melton Hill	11096	0	0	0	11096
Fort Loudoun	4028	0	0	0	4028
Tellico	0	0	0	0	0
TOTAL	57602	74365	80	192	132239

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE ON TVA RESERVOIRS ----FY 1985

RESERVOIR	2,4-D LBS*	ENDSULPHATHAL LBS*	COPPER LBS*	DIQUAT LBS*	RODEO LBS*	TOTAL LBS*
Kentucky	0	0	0	0	0	0
Pickwick	0	0	0	0	0	0
Wilson	0	0	0	0	0	0
Wheeler	0	0	0	60	0	60
Guntersville	12453 <sup>1</sup>	46635	180	2599	152 <sup>2</sup>	62019
Nickajack	76	3120	0	141	0	3337
Chickamauga	3116	18870	0	846	0	22832
Watts Bar	6080	2520	0	291	0	8891
Melton Hill	8816	0	0	0	0	8816
Fort Loudoun	8132	0	0	90	0	8222
Tellico	0	0	0	0	0	0
TOTAL	26220	71145	180	4027	152	114177

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Includes 134 pounds for emergent control

2 - Emergent control

HERBICIDE ON TVA RESERVOIRS ----FY 1986

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TOTAL LBS*
Kentucky	9424	2055	0	0	0	0	11479
Pickwick	0	0	0	0	0	0	0
Wilson	0	0	0	0	0	0	0
Wheeler	1140	945	1236	192	10	0	3523
Guntersville	39316 <sup>1</sup>	33345 <sup>2</sup>	0	3124	450 <sup>3</sup>	100 <sup>4</sup>	76335
Nickajack	836	2730	0	84	0	0	3650
Chickamauga	5396	20970	0	585	0	0	26951
Watts Bar	6308	3255	0	138	0	0	9701
Melton Hill	9652	0	0	0	0	0	9652
Fort Loudoun	3154	0	0	0	0	0	3154
Tellico	1520	0	0	0	0	0	1520
TOTAL	76746	63300	1236	4123	460	100	145965

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

- 1 - Includes 26 pounds for emergent control
- 2 - Includes 380 pounds applied by helicopter
- 3 - Includes 424 pounds applied by helicopter
- 4 - Emergent control

# HERBICIDE USE ON TVA RESERVOIRS - FY 1987

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TOTAL LBS*
Kentucky	1634	600	0	1758	0	0	3992
Pickwick	0	900	0	0	0	0	900
Wilson	0	0	0	0	0	0	0
Wheeler	950	4020	0	66	0	0	5036
Guntersville	29988 <sup>1</sup>	25650 <sup>2</sup>	3927	5088	1468 <sup>3</sup>	192 <sup>5</sup>	66313
Nickajack	836	1515	0	417	0	0	2768
Chickamauga	0	14355	0	1548	208 <sup>4</sup>	0	16111
Watts Bar	5776	1590	0	294	0	0	7660
Melton Hill	1900	0	0	0	0	0	1900
Fort Loudoun	950	0	0	0	0	0	950
Tellico	3534	0	0	0	0	0	3534
<b>TOTAL</b>	<b>45568</b>	<b>48630</b>	<b>3927</b>	<b>9171</b>	<b>1676</b>	<b>192</b>	<b>109164</b>

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Includes 32 pounds for emergent control

2 - Includes 3600 pounds applied by helicopter

3 - Includes 1436 pounds applied by helicopter

4 - All applied by helicopter

5 - Emergent control

HERBICIDE USE ON TVA RESERVOIRS ----FY 1988

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	TOTAL LBS*
Kentucky	11590	4575	0	0	122 <sup>1</sup>	16287
Pickwick	0	180	0	0	30 <sup>1</sup>	210
Wilson	0	180	0	0	0	180
Wheeler	4142	1980	0	0	20 <sup>1</sup>	6142
Guntersville	35948	18945	1968	108	130 <sup>1</sup>	57099
Nickajack	4180	1875	0	0	0 <sup>1</sup>	6055
Chickamauga	608	8835	0	0	292	9735
Watts Bar	5016	0	0	27	0	5043
Melton Hill	2014	0	0	0	0	2014
Fort Loudoun	646	0	0	0	0	646
Tellico	2660	600	0	0	0	3260
TOTAL	66804	37170	1968	135	594	106671

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Applied by helicopter

III. PESTICIDE USE ON TVA RESERVOIRS ----FY 1989

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TOTAL LBS*
Kentucky	27208	6630	268	0	134	4 <sup>5</sup>	34244
Pickwick	0	330	0	0	0	0	330
Wilson	0	0	0	0	0	0	0
Wheeler	2128	300	28	0	14	20 <sup>5</sup>	2490
Guntersville	32011 <sup>1</sup>	15786 <sup>2</sup>	6516 <sup>3</sup>	5128	318 <sup>4</sup>	228 <sup>5</sup>	59987
Nickajack	2090	1245	0	44	0	0	3379
Chickamauga	2850	10170	48	268	6	8 <sup>5</sup>	13350
Watts Bar	6878	885	0	0	0	0	7763
Melton Hill	3078	0	0	0	0	0	3078
Fort Loudoun	1558	0	0	0	0	0	1558
Tellico	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>77801</b>	<b>35346</b>	<b>6860</b>	<b>5440</b>	<b>472</b>	<b>260</b>	<b>126179</b>

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Includes 256 pounds used for emergent control, and 10,500 pounds applied by helicopter

2 - Includes 6000 pounds applied by helicopter

3 - Includes 636 pounds applied by helicopter

4 - Includes 308 pounds applied by helicopter

5 - Emergent control



HERBICIDE ON TVA RESERVOIRS ----FY 1990

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TOTAL LBS*
Kentucky	6593	2370	0	0	136	0	9099
Pickwick	0	300	0	0	0	0	300
Wilson	0	0	0	0	0	0	0
Wheeler	0	0	0	0	0	0	0
Guntersville	24890	1050	240	240	32	196 <sup>1</sup>	26648
Nickajack	38	1425	0	12	0	0	1475
Chickamauga	0	4800	0	0	0	0	4800
Watts Bar	190	0	0	0	0	0	190
Melton Hill	798	0	0	0	0	0	798
Fort Loudoun	304	0	0	0	0	0	304
Tellico	0	0	0	0	0	0	0
TOTAL	32813	9945	240	252	168	196	43614

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Emergent control

HERBICIDE USE ON TVA RESERVOIRS ----FY 1991

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	RODEO LBS*	TRICLOPYR LBS*	TOTAL LBS*
Kentucky	2261	0	0	0	0	2261
Pickwick	0	0	0	0	0	0
Wilson	0	0	0	0	0	0
Wheeler	0	0	0	0	0	0
Guntersville	2717	225	208	160 <sup>1</sup>	150	3460
Nickajack	19	1305	0	0	0	1324
Chickamauga	95	1155	0	8 <sup>1</sup>	0	1258
Watts Bar	0	0	0	0	0	0
Melton Hill	665	0	0	0	0	665
Fort Loudoun	380	0	0	0	0	380
Tellico	95	0	0	0	0	95
TOTAL	6232	2685	208	168	150	9443

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

1 - Emergent control

HERBICIDE USE ON TVA RE RVOIRS ----FY 1992

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	TRICLOPYR LBS*	TOTAL LBS*
Kentucky	1558	990	0	0	0	2548
Pickwick	0	150	0	0	0	150
Wilson	0	0	0	0	0	0
Wheeler	0	0	0	0	0	0
Guntersville	2337	1125	83	80	60	3685
Nickajack	57	675	4	4	0	740
Chickamauga	0	900	12	12	0	924
Watts Bar	0	0	0	0	0	0
Melton Hill	437	0	0	0	0	437
Fort Loudoun	38	0	0	0	0	38
Tellico	0	0	0	0	0	0
TOTAL	4427	3840	99	96	60	8522

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

HERBICIDE USE 1993

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TRICLOPYR LBS*	TOTAL LBS*
Kentucky	950	4950						5900
Pickwick		0						0
Wilson								0
Wheeler								0
Guntersville	1140	0	2092	1980	0			5212
Nickajack	57	0	0	0				57
Chickamaug		0	0	0				0
Watts Bar								0
Melton Hill	836							836
Fort Loudou	399							399
Tellico								0
TOTAL	3382	4950	2092	1980	0	0	0	12404

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

## HERBICIDE USE 1994

RESERVOIR	2,4-D LBS*	ENDOTHALL LBS*	COPPER LBS*	DIQUAT LBS*	SONAR LBS*	RODEO LBS*	TRICLOPYR LBS*	TOTAL LBS*
Kentucky	0	510						510
Pickwick		0						0
Wilson								0
Wheeler								0
Guntersville	4769	6375	1440	1962	0			14546
Nickajack	0	0	0	0				0
Chickamaug		0	0	0				0
Watts Bar								0
Melton Hill	342							342
Fort Loudou	133							133
Tellico								0
TOTAL	5244	6885	1440	1962	0	0	0	15531

\*LBS = ACID EQUIVALENT OR ACTIVE INGREDIENT

**COPIES OF LABELS**  
**MATERIAL SAFETY DATA SHEETS (MSDS)**

**elf atochem**

**ATO**

# AQUATHOL® K

## AQUATIC HERBICIDE

### ACTIVE INGREDIENT

Dipotassium salt of endothall\* ..... 40.3%

INERT INGREDIENTS ..... 59.7%

TOTAL ..... 100.0%

\*7-oxabicyclo [2.2.1]heptane-2,3-dicarboxylic acid equivalent 28.6%  
Contains per gallon 4.23 lb. dipotassium endothall  
(equivalent to 3.0 lbs. endothal acid)



**KEEP OUT OF REACH OF CHILDREN**

**DANGER POISON**



### STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED**, drink promptly a large quantity of milk, egg whites, gelatin solution or if these are not available, drink large quantities of water. Avoid alcohol. Call a physician immediately.

**IF ON SKIN**, immediately flush with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before reuse.

**IF IN EYES**, immediately flush with plenty of water for at least 15 minutes. Call a physician.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

See Side Panel for Additional Precautionary Statements

NOTE: For GENERAL INFORMATION and DIRECTIONS FOR USE refer to accompanying brochure.

EPA Registration No. 4581-204

EPA Establishment No. 4581-TX-1

Net Contents \_\_\_\_ Gallons/\_\_\_\_ Liters

**ELF Atochem North America, Inc.**  
**Agchem Division**

Philadelphia, PA

Common Name	Latin Name	Entire Pond Or Large Area Treatment	Spot Or Lake Margin Treatment
Bass Weed .....	Potamogeton amplifolius .....	2.0-3.0 ppm ...	3.0-4.0 ppm
Bur Reed .....	Sparganium spp. ....	3.0-4.0 ppm ...	4.0-5.0 ppm
Coontail .....	Ceratophyllum spp. ....	1.0-2.0 ppm ...	2.0-3.0 ppm
Hydrilla .....	Hydrilla verticillata .....	2.0-3.0 ppm ...	3.0-4.0 ppm
Milfoil .....	Myriophyllum spp. ....	2.0-3.0 ppm ...	3.0-4.0 ppm
Pondweed			
Bushy .....	Najas spp. ....	0.5-1.5 ppm ...	2.0-3.0 ppm
Curly-Leaf .....	Potamogeton crispus .....	0.5-1.5 ppm ...	2.0-3.0 ppm
Flat-Stem .....	Potamogeton zosteriformis .....	2.0-3.0 ppm ...	3.0-4.0 ppm
Floating-Leaf ....	Potamogeton natans .....	1.0-2.0 ppm ...	2.0-3.0 ppm
Horned .....	Zannichellia spp. ....	1.0-2.0 ppm ...	2.0-3.0 ppm
Sago .....	Potamogeton pectinatus .....	1.0-2.0 ppm ...	2.0-3.0 ppm
_____	Potamogeton americanus .....	2.0-3.0 ppm ...	3.0-4.0 ppm
_____	Potamogeton diversifolius .....	1.0-2.0 ppm ...	2.0-3.0 ppm
_____	Potamogeton filiformis .....	2.0-3.0 ppm ...	3.0-4.0 ppm
_____	Potamogeton pusillus .....	1.0-2.0 ppm ...	2.0-3.0 ppm
Water Star Grass	Heteranthera spp. ....	2.0-3.0 ppm ...	3.0-4.0 ppm

### RATE OF APPLICATION—LAKES AND PONDS

The following chart indicates the total quantity of material to be applied.

#### APPROXIMATE GALLONS OF AQUATHOL K FOR ONE ACRE (208' x 208') TREATMENT

DEPTH	DOSAGE IN GALLONS FOR VARIOUS CONCENTRATIONS IN PPM						
	0.5 ppm	1.0 ppm	1.5 ppm	2.0 ppm	3.0 ppm	4.0 ppm	5.0 ppm
1 ft. ....	0.3	0.6	1.0	1.3	1.9	2.6	3.2
2 ft. ....	0.6	1.3	1.9	2.6	3.8	5.1	6.4
4 ft. ....	1.3	2.6	3.8	5.1	7.7	10.2	12.8
6 ft. ....	1.9	3.8	5.8	7.6	11.5	15.3	19.2

### RATE OF APPLICATION—IRRIGATION AND DRAINAGE CANALS\*\*

The following indicates the total quantity of material to be applied.

#### GALLONS OF AQUATHOL K REQUIRED TO TREAT 1 MILE BY 1 FOOT DEEP\*

PPM	WIDTH OF CANAL IN FEET			
	5	10	15	20
1.0 ppm	0.4	0.75	1.2	1.5
2.0 ppm	0.75	1.5	2.3	3.0
3.0 ppm	1.2	2.3	3.5	4.5
4.0 ppm	1.5	3.0	4.5	6.0
5.0 ppm	2.0	3.8	5.7	7.5

The minimum contact time with weeds for optimum results should be 2 hours.

\*For deeper water, adjust rate accordingly.

\*\*Not for this use in California.

### WARRANTY AND DISCLAIMER

Elf Atochem North America warrants that this material conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the risks referred to therein. ELF ATOCHEM MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL ELF ATOCHEM OR SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, BUSINESS REPUTATION, OR CUSTOMERS; LABOR COST; OR OTHER EXPENSES INCURRED IN PLANTING OR HARVESTING.

Elf Atochem and seller offer this product and the buyer and user accept it subject to the foregoing conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of Elf Atochem.



## GENERAL INFORMATION

AQUATHOL K is a liquid concentrate soluble in water which is effective against a broad range of aquatic plants with a margin of safety to fish.

Dosage rates indicated for the application of AQUATHOL K are measured in "Parts Per Million" (ppm) of dipotassium endothall. Only 0.5 to 5.0 ppm are generally required for aquatic weed control, whereas some fish species are tolerant to approximately 100 ppm or over.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

## AQUATIC WEEDS CONTROLLED AND DOSAGE RATE CHARTS

AQUATHOL K is recommended for the control of the following aquatic weeds in irrigation and drainage canals, ponds and lakes at the rates indicated. Since the active ingredient is water soluble and tends to diffuse from the area treated, select the dosage rate applicable to the area to be treated. Use the lower rate in each range of rates where the growth is young and growing and/or where the weed stand is not heavy. Marginal treatments of large bodies of water require higher rates as indicated.

### HOW TO APPLY:

AQUATHOL K is a contact killer; consequently, do not apply before weeds are present. Application as early as possible after weeds are present is recommended to permit use of lower application rates. However, for best results water temperature should be at 65°F or above. If an entire pond is treated at one time, or if the dissolved oxygen level is low at time of application, decay of weeds may remove enough oxygen from the water, causing fish to suffocate. Water containing very heavy vegetation should be treated in sections to prevent suffocation of fish. Sections should be treated 5-7 days apart. Carefully measure size and depth of area to be treated and determine amount of AQUATHOL K to apply from chart. For best results apply on a calm day where there is little wave action.

AQUATHOL K should be sprayed on the water or injected below the water surface and should be distributed as evenly as possible. It may be applied as it comes from the container or diluted with water depending on the equipment. Some dilution will give better distribution.

In instances where the nuisance to be controlled is an exposed surface problem (i.e., some of the broad-leaved pond weeds) it is important to get good contact coverage utilizing the highest concentration (least water dilution) compatible with the type of equipment used so that even distribution is achieved.

Necessary approval and/or permits should be obtained in states where required.

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS**  
**(AND DOMESTIC ANIMALS)**

**DANGER**

FATAL IF ABSORBED THROUGH SKIN. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CORROSIVE, CAUSES IRREVERSIBLE EYE DAMAGE. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. WEAR PROTECTIVE CLOTHING, RUBBER GLOVES, AND GOGGLES OR FACE SHIELD WHEN HANDLING. Wash thoroughly with soap and water after handling and before eating or smoking. Remove contaminated clothing and wash before reuse. Avoid breathing spray mist.

**ENVIRONMENTAL HAZARDS**

Avoid contact with or drift to other crops or plants as injury result. Wash out spray equipment with water after each operation.

Do not use fish from treated areas for food or feed within 3 days of treatment. Do not use water from treated areas for watering livestock, for preparing agricultural sprays for food crops, for irrigation or for domestic purposes within the following periods:

Up to 0.5 ppm dipotassium salt  
(0.35 ppm acid equivalent)— 7 days after application

Up to 4.25 ppm dipotassium salt  
(3.0 ppm acid equivalent)—14 days after application

Up to 5.0 ppm dipotassium salt  
(3.5 ppm acid equivalent)—25 days after application

NOTE: Areas treated with AQUATHOL K may be used for swimming twenty-four hours after treatment.

Treated water can be used for sprinkling bent grass immediately.

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**Storage Instructions:** Store in the original container. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. Storage at temperatures below 32°F may result in the product freezing or crystallizing. Should this occur the product must be warmed to 50°F or higher and thoroughly agitated. In the event of a spillage during handling or storage, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal Instructions listed below.

**Pesticide Disposal Instructions:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal Instructions:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

# AQUATHOL® K

AQUATIC HERBICIDE

**EMERGENCY  
TELEPHONE NUMBERS:**  
(409) 779-0060 (PRIMARY)  
(800) 424-9300 (CHEMTREC)

**ADDRESS:**  
PENNWALT CORPORATION  
AGCHEM DIVISION  
THREE PARKWAY  
PHILADELPHIA, PA 19102

AGCHEM

**PENNWALT**

FORM 4627  
REV. 3/89

MATERIAL  
SAFETY  
DATA SHEET

## PRODUCT IDENTIFICATION

### PRODUCT NAME

AQUATHOL® K AQUATIC HERBICIDE

**EPA REG. NO.**  
4581-204

**PENNWALT  
CODE NUMBER**  
9243

**CHEMICAL NAME AND  
MOLECULAR FORMULA**  
DIPOTASSIUM ENDOTHALL  
 $C_8H_8O_5K_2$

### SYNONYMS

DIPOTASSIUM 7-OXABICYCLO[2.2.1]  
HEPTANE-2,3-DICARBOXYLATE

**CAS NUMBER OF  
ACTIVE INGREDIENT**  
2164-07-0

**CHEMICAL FAMILY**  
DICARBOXYLIC ACID—DISALT

## HAZARDOUS INGREDIENTS

**MATERIALS  
OR COMPONENTS**      %WW  
ENDOTHALL              28.6

Contains no substances listed as  
toxic by SARA 313. Contains no  
substances known to be carcinogens.

## SARA TITLE III RATINGS

This formulated product has a  
positive rating for Acute Hazard.

## SHIPPING INFORMATION

**DOT I.D. NO.**  
NA-2810

**DOT CLASS**  
POISON B

**SHIPPING NAME**  
COMPOUND, TREE OR WEED KILLING,  
LIQUID (ENDOTHALL)

## PHYSICAL PROPERTIES

### PHYSICAL STATE

### BOILING POINT/RANGE

ca 100 °C  
ca 212 °F

**MELTING POINT**  
NA

**FREEZING POINT**  
-15°C      5°F

**MOLECULAR WEIGHT (CALCULATED)**  
NA

**SPECIFIC GRAVITY ( $H_2O = 1$ )**  
1.26 @ 20/20 °C

**VAPOR PRESSURE (mm Hg)**  
NE

**VAPOR DENSITY (AIR = 1)**  
NA

**SOLUBILITY IN  $H_2O$**   
MISCIBLE

**% VOLATILES BY VOLUME**  
NA

### EVAPORATION RATE

☐ ETHER = 1  
☒ WATER = 1  
☐ BUTYLACETATE = 1

**APPEARANCE AND ODOR**  
LIGHT TO DARK BROWN LIQUID —  
SLIGHT DISTINCTIVE ODOR

## FIRE AND EXPLOSION DATA

**FLASH POINT (TEST METHOD)**  
NA

**FLAMMABLE LIMITS**  
NA

**AUTOIGNITION TEMPERATURE/  
FIRE POINT**  
NA

### EXTINGUISHING MEDIA

☒ WATER SPRAY    ☐ DRY CHEMICAL  
☒ WATER FOG      ☐ ALCOHOL  
FOAM  
☒ WATER STREAM   ☒ FOAM  
☒  $CO_2$               ☒ EARTH OR  
SAND

### SPECIAL FIRE FIGHTING PROCEDURES

☐ DO NOT ENTER BUILDING  
☐ ALLOW FIRE TO BURN  
☐ WATER MAY CAUSE FROTHING  
☐ DO NOT USE WATER  
☒ OTHER:  
RESPIRATOR FOR ORGANIC  
ACIDS. PROVIDE EYE AND  
SKIN PROTECTION.

### UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ DUST EXPLOSION HAZARD  
☐ SENSITIVE TO SHOCK  
☐ CONTAMINATION  
☐ TEMPERATURE  
☒ OTHER:  
SEE DECOMPOSITION  
PRODUCTS BELOW.

## REACTIVITY DATA

### STABILITY

☒ STABLE              ☐ UNSTABLE

### CONDITIONS CONTRIBUTING TO INSTABILITY

☒ THERMAL DECOMPOSITION  
☐ PHOTO DEGRADATION  
☐ POLYMERIZATION  
☐ CONTAMINATION

### INCOMPATIBILITY—AVOID CONTACT WITH

☐ STRONG ACIDS  
☐ STRONG ALKALIS  
☐ STRONG OXIDIZERS  
☒ OTHER  
MATERIALS THAT REACT  
WITH WATER

## REACTIVITY DATA, CONTINUED

### HAZARDOUS DECOMPOSITION PRODUCTS, THERMAL AND OTHER:

Elevated temperatures convert endothall to anhydride which is a strong vesicant on eyes, mucous membranes and skin.

### CONDITIONS TO AVOID

☒ HEAT  
☐ OPEN FLAMES  
☐ SPARKS  
☐ IGNITION SOURCES

## SPILL OR LEAK

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

③ FLUSH WITH WATER  
① ABSORB WITH SAND OR  
INERT MATERIAL  
☐ NEUTRALIZE  
② SWEEP OR SCOOP UP AND  
REMOVE  
☐ KEEP UPWIND. EVACUATE  
ENCLOSED SPACES  
☐ PREVENT SPREAD OR SPILL  
☐ DISPOSE OF IMMEDIATELY

### WASTE DISPOSAL METHOD:

If wastes cannot be disposed of by  
use according to label instructions,  
contact your state Pesticide or  
Environmental Control Agency, or the  
hazardous waste representative at the  
nearest EPA Regional Office for guidance.

NA = NOT APPLICABLE  
NE = NOT ESTABLISHED

CONTINUED ON OTHER SIDE

MATERIAL  
SAFETY  
DATA SHEET

PENNWALT  
PRODUCT NAME:  
AQUATHOL® K AQUATIC HERBICIDE  
CODE NUMBER:  
9243

BEFORE USING PRODUCT, READ AND FOLLOW DIRECTIONS AND PRECAUTIONS ON PRODUCT LABEL AND BULLETINS.

## TOXICITY

### ORAL (ACUTE)

LD<sub>50</sub> (RAT) — 125 mg/kg

### DERMAL (ACUTE)

LD<sub>50</sub> (RABBIT) — 171 mg/kg

### INHALATION (ACUTE)

LC<sub>50</sub> (RAT) — 0.95 mg/L (4 HRS)

### CHRONIC, SUBCHRONIC, ETC.

Based on a 1-year feeding study of disodium endothal to dogs, the NOEL is considered to be 150 ppm. Mice were dosed with disodium endothal in an 18-month oncogenicity study. The NOEL for this study is considered to be 100 ppm. There was no indication of carcinogenic effects. (1987, 1988)

## HEALTH HAZARD INFORMATION

### EFFECTS OF EXPOSURE TO CONCENTRATE

#### PERMISSIBLE EXPOSURE LIMIT (TWA OR CEILING (C))

1988-89 TLV NE  
1989 TWA NE

### IRRITATION

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> SKIN   | <input checked="" type="checkbox"/> EYE      |
| <input checked="" type="checkbox"/> SEVERE | <input checked="" type="checkbox"/> SEVERE   |
| <input type="checkbox"/> MODERATE          | <input type="checkbox"/> MODERATE            |
|  | <input type="checkbox"/> MILD<br>(TRANSIENT) |

### CORROSIVITY

- |   |   |
|---|---|
| <input type="checkbox"/> SKIN           | <input checked="" type="checkbox"/> EYE         |
| <input type="checkbox"/> 4 HRS. (DOT)   | <input type="checkbox"/> MAY CAUSE<br>BLINDNESS |
| <input type="checkbox"/> 24 HRS. (CPSC) |   |

### SENSITIZATION

NOT A SENSITIZER

### INHALATION EFFECTS

NA

### LUNG EFFECTS

SLIGHT TO MODERATE LUNG  
CONGESTION AND HEMORRHAGE  
UPON HEAVY OVEREXPOSURE

## HEALTH HAZARD INFORMATION, CONTINUED

### EMERGENCY FIRST AID

#### INGESTION

- ☒ GET MEDICAL ATTENTION
- ☐ INDUCE VOMITING
- ☒ DO NOT INDUCE VOMITING
- ☐ GIVE PLENTY OF WATER
- ☒ OTHER:  
DRINK A LARGE QUANTITY OF  
MILK, EGG WHITES, GELATIN  
SOLUTION OR, IF THESE ARE  
NOT AVAILABLE, DRINK LARGE  
QUANTITIES OF WATER.

#### DERMAL

- ☐ GET MEDICAL ATTENTION
- ☒ FLUSH WITH SOAP AND WATER
- ☒ CONTAMINATED CLOTHING—  
REMOVE AND LAUNDRY
- ☐ CONTAMINATED SHOES—  
DESTROY

#### EYE CONTACT

- ☒ GET MEDICAL ATTENTION
- ☒ FLUSH WITH PLENTY OF WATER  
FOR AT LEAST 15 MINUTES

#### INHALATION

- ☐ GET MEDICAL ATTENTION
- ☒ REMOVE TO FRESH AIR
- ☐ IF NOT BREATHING, GIVE  
ARTIFICIAL RESPIRATION
- ☐ GIVE OXYGEN

## SPECIAL PROTECTION INFORMATION

### VENTILATION REQUIREMENTS—

ALWAYS MAINTAIN EXPOSURE  
BELOW PERMISSIBLE  
EXPOSURE LIMITS

- ☐ CONSULT AN INDUSTRIAL  
HYGIENIST OR ENVIRONMENTAL  
HEALTH SPECIALIST
- ☐ LOCAL EXHAUST
- ☒ USE WITH ADEQUATE  
VENTILATION
- ☐ CHECK FOR AIR  
CONTAMINANT AND  
OXYGEN DEFICIENCY

### EYE

- ☐ SAFETY GLASSES
- ☒ FACE SHIELD
- ☒ GOGGLES

### HAND (GLOVE TYPE)

- ☒ POLYVINYL CHLORIDE
- ☒ NEOPRENE
- ☒ BUTYL RUBBER
- ☒ NATURAL RUBBER
- ☒ POLYVINYL ALCOHOL
- ☒ POLYETHYLENE
- ☐ ANY

### RESPIRATOR TYPE—

NOT REQUIRED - USE NORMAL  
SAFETY PRECAUTIONS

### OTHER PROTECTIVE EQUIPMENT

WEAR PROTECTIVE CLOTHING  
WHICH PREVENTS SKIN CONTACT.

## SPECIAL PRECAUTIONS

### PRECAUTIONARY LABELING

- ☒ WASH THOROUGHLY AFTER  
HANDLING
- ☒ DO NOT GET IN EYES, ON SKIN  
OR CLOTHING
- ☒ DO NOT BREATH DUST, VAPOR  
MIST, GAS
- ☒ KEEP CONTAINER CLOSED
- ☐ KEEP AWAY FROM HEAT  
SPARKS AND OPEN FLAMES
- ☐ STORE IN TIGHTLY CLOSED  
CONTAINERS
- ☐ DO NOT STORE NEAR  
COMBUSTIBLES
- ☐ KEEP FROM CONTACT WITH  
CLOTHING AND OTHER  
COMBUSTIBLE MATERIALS
- ☒ EMPTY CONTAINER MAY  
CONTAIN HAZARDOUS  
RESIDUES
- ☐ USE EXPLOSION-PROOF  
EQUIPMENT

### OTHER HANDLING AND STORAGE CONDITIONS

Store in the original container. Do  
not store in a manner where cross-  
contamination with other pesticides,  
fertilizers, food or feed could occur.

## PLEASE NOTE

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are, subject to change and the conditions of handling and use, or misuse, are beyond our control, Pennwalt MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.

PREPARED BY: R. A. CLEMMER.

DATE: 3/89

#### ADDRESS:

PENNWALT CORPORATION  
AGCHEM DIVISION ROOM 619  
THREE PARKWAY  
PHILADELPHIA, PA 19102

#### PHONE:

(215) 587-7667

# REWARD®

## Aquatic and Noncrop Herbicide

**TO PREVENT ACCIDENTAL POISONING,  
NEVER PUT INTO FOOD, DRINK OR OTHER  
CONTAINERS AND USE STRICTLY IN AC-  
CORDANCE WITH ENTIRE LABEL**

**DO NOT USE THIS PRODUCT FOR REFORMULATION**

**ACTIVE INGREDIENT:**

Diquat dibromide [6,7—dihydrodipyrido (1,2— $a:2'$ ,1'— $c$ )  
pyrazinediium dibromide] ..... 35.3%

INERT INGREDIENTS ..... 64.7%

TOTAL ..... 100.0%

Contains 2 lbs. diquat cation per gal. as 3.73 lbs. salt per  
gal.

EPA REG. NO. 10182-353      1 GAL (3.785 LITERS)

### KEEP OUT OF REACH OF CHILDREN WARNING — AVISO

**PRECAUCION AL USUARIO:** Si usted no lee ingles, no  
use este producto has que la etiqueta la haya sido  
explicada ampliamente.

**STATEMENT OF PRACTICAL TREATMENT**

**IF SWALLOWED: IMMEDIATELY** give water or milk to  
drink and induce vomiting by inserting finger in throat.  
Take person and product container to the nearest hos-  
pital or physician fast. **PROMPT TREATMENT IS ES-  
SENTIAL TO COUNTERACT POISONING** and should be  
initiated before signs and symptoms of injury appear.

**IF ON SKIN: IMMEDIATELY** wash with soap and water.  
Remove and wash all contaminated clothing with soap  
and hot water before reuse. See a doctor if diquat  
contacts a skin cut, abrasion or area of irritation.

**IF IN EYES: IMMEDIATELY** wash eyes with water for at  
least 15 minutes and get medical attention.

**IF INHALED: IMMEDIATELY** get away from spray mist.  
Stop and check spray procedure. See a doctor if irritation  
persists.

**NOTE TO PHYSICIANS:** Call ICI Americas Medical Emer-  
gency Information Network 1-800-F-A-S-T-M-E-D (327-  
8633) at any hour to obtain toxicology information and a  
diquat analysis. To be effective, treatment for diquat  
poisoning must begin **IMMEDIATELY**. Treatment con-  
sists of binding diquat in the gut with suspensions of  
activated charcoal or bentonite clay, administration of  
cathartics to enhance elimination, and removal of diquat  
from the blood by charcoal hemoperfusion or continuous  
hemodialysis.

**FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE  
CALL 1-800-F-A-S-T-M-E-D (327-8633)**

**FOR CHEMICAL EMERGENCY:** Spill, leak, fire, expo-  
sure, or accident call CHEMTREC  
1-800-424-9300.

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND  
DOMESTIC ANIMALS**

### WARNING

May be fatal if swallowed, inhaled or absorbed through  
skin. Causes substantial, but temporary, eye injury.  
Causes skin irritation. Contact with irritated skin, or a cut,  
or repeated contact with intact skin may result in poison-  
ing. Do not get in eyes or on skin or clothing. Do not  
breathe spray mist. Wash thoroughly with soap and  
water after handling and before eating, drinking, or using  
tobacco. Remove contaminated clothing and wash be-  
fore reuse. Wear a protective suit, chemical resistant  
gloves and chemical resistant footwear when handling  
the product (mixing, loading, application [except aquatic  
subsurface applications], flagging, or disposal). A chem-  
ical resistant apron and face shield, or goggles, must  
also be worn when handling the concentrate. A protec-  
tive suit consists of one or two pieces, such as coveralls,  
worn over work clothing to cover the entire body except  
head, hands and feet. Do not feed forage from treated  
crops to livestock. Keep livestock and pets out of treated  
fields and crop areas.

**WORKER SAFETY RULES:** Keep all unprotected per-  
sons and children away from treated area or where there  
may be drift. Do not rub eyes or mouth with hands. If you  
feel sick in any way, **STOP** work and get medical help  
right away (See Practical Treatment Section).

### ENVIRONMENTAL HAZARDS (AQUATIC AND NONAQUATIC USES)

This pesticide is toxic to wildlife. Do not apply directly to  
water except as specified on this label. **For Nonaquatic  
Use**, do not apply directly to water, to areas where  
surface water is present, or to intertidal areas below the  
mean high water mark. Do not contaminate water when  
disposing of equipment washwaters. Do not use treated  
water for animal consumption, spraying or irrigation  
within 14 days after treatment. Do not use treated water  
for drinking purposes until 14 days after treatment.  
Treatment of dense weed areas can result in oxygen loss  
from decomposition of dead weeds. This loss can cause  
fish suffocation. Therefore, treat only 1/3 to 1/2 of the  
dense weed areas at a time and wait 14 days between  
treatments. **DO NOT APPLY TO MUDDY WATER.** Avoid  
creating muddy water during application. Do not apply  
under conditions of high wind and wave action. Do not  
apply where plants are covered with mud deposits.  
Consult your State Fish and Game Agencies before  
applying this product to public waters.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a  
manner inconsistent with its labeling.

**READ ENTIRE LABEL. USE STRICTLY IN ACCOR-  
DANCE WITH PRECAUTIONARY STATEMENTS AND  
DIRECTIONS, AND WITH APPLICABLE STATE AND  
FEDERAL REGULATIONS.**

**Do not apply this product through any type of irrigation  
system.**

### REENTRY STATEMENT

Keep all unprotected persons out of operating areas or  
vicinity where there may be drift.

For terrestrial uses, do not enter or allow entry of  
maintenance workers into treated areas, or allow contact

with treated vegetation wet with s, dew or rain, without appropriate protective clothing until spray has dried.

For aquatic uses, do not enter treated areas while treatments are in progress.

Do not allow swimming in treated areas within 24 hours after treatment.

Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further information.

Written or oral warnings regarding use of protective clothing and accidental exposure must be given to workers who are expected to be in treated areas or in areas about to be treated. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers.

When oral warnings are given, warnings shall be given in a language customarily understood by workers and must indicate the specific period of time that treated areas may not be entered without protective clothing. Oral warnings must also include appropriate first aid instructions in case of accidental exposure. These instructions are given in the STATEMENT OF PRACTICAL TREATMENT at the beginning of this label.

Written warnings must include the following information, "WARNING. Area treated with REWARD® Aquatic and Noncrop Herbicide on (date of application). Do not enter treated areas without appropriate protective clothing until spray has dried (or other reentry interval if your State has a more restrictive interval for this product). If accidental exposure occurs, follow the instructions below." (Written warnings must include the STATEMENT OF PRACTICAL TREATMENT given at the beginning of this label.)

## DIRECTIONS

REWARD Aquatic and Noncrop Herbicide is a nonvolatile herbicidal chemical for use as a general weed killer and as an aquatic weed killer. Absorption and herbicidal action is usually quite rapid with effects visible in a few days. Do not use on lawns. Rinse all spray equipment thoroughly with water after use. AVOID SPRAY DRIFT to crops which may be damaged during application. Always add a 75% nonionic spreader. Do not use dirty or muddy water for diquat dilution as REWARD Herbicide will be inactivated.

Do not apply this product through any type of irrigation system.

**NONCROP OR NONPLANTED AREAS:** Rights-Of-Way, including Railroads, Highways, Roads, Dividers and Medians, Pipelines, Public Utility Lines, Including Pumping Stations, Transformer Stations and Substations, Around Electric Utilities, Commercial Buildings, Manufacturing Plants, Storage Yards, Rail Yards, Fence Lines and Parkways, Edges and Nonflooded Portions of Ponds, Lakes and Ditches. Also Around Ornamental Gardens, Walkways, Patios, Beneath Greenhouse Benches, Along Driveways and Around Golf Courses. To Kill Undesirable Above-Ground Grass and Broadleaf Weed Growth — 1 to 2 qts. plus 8 - 16 oz. of a 75% nonionic spreader per 100 gals. water (4 teaspoonfuls REWARD Herbicide plus 1 teaspoonful of a 75% nonionic spreader to 1 gal. water). Apply for full coverage and thorough weed contact. Apply to young weeds since control decreases as weeds mature. Retreatment may be necessary to control grasses and established weeds. Avoid spray contact with foliage of food crops or ornamental plants.

## AQUATIC USE DIRECTIONS

For application only to ponds, lakes and drainage ditches where there is little or no outflow of water and which are totally under the control of the product's user. Do not use treated water for animal consumption, spraying, irrigation, or domestic purposes for 14 days after treatment.

### WEED SPECIES

### GALS/SURFACE ACRE

**Submersed Weeds** (Infesting Still Ponds, Lakes, Ditches or Portions Thereof):

Bladderwort ( <i>Utricularia</i> spp.)	1-2
Coontail ( <i>Ceratophyllum demersum</i> )	2
Elodea ( <i>Elodea</i> spp.)	2
Naiad ( <i>Najas</i> spp.)	1
Pondweeds ( <i>Potamogeton</i> spp.)*	2
Watermilfoil ( <i>Myriophyllum</i> spp.)	1-2

\*Except *P. robbinsii*; also Richardson Pondweed (*P. richardsonii*) in Minnesota

**APPLICATION:** In early season where submersed weed growth has not reached the surface, apply REWARD Herbicide by pouring directly from the container into the water while moving slowly over the water surface in a boat. Distribute evenly over infested areas in strips 40 feet apart. In mixed weed population, use the high rate of application as indicated by weeds present. For waters less than 2 feet in average depth, use a maximum of 1 gal. REWARD Herbicide per surface acre.

In late season where submersed weed growth has reached the water surface throughout the area to be treated, apply REWARD Herbicide by pouring as above or injecting a diluted (10-20 to 1) solution below the water surface in strips no more than 20 feet apart. Use the high rate of application as indicated by the weeds present. Where algae are present along with the submersed weeds, pretreatment with Copper Sulphate at recommended rates is advised for best results with REWARD Herbicide.

### FLOATING WEEDS

### GALS/SURFACE ACRE

Pennywort ( <i>Hydrocotyle umbellata</i> )	1/2-3/4
Salvinia ( <i>Salvinia rotundifolia</i> )	1/2-3/4
Waterhyacinth ( <i>Eichhornia crassipes</i> )	1/2-3/4
Waterlettuce ( <i>Pistia Stratiotes</i> )	1/2-3/4

**APPLICATION:** 150 to 200 gals. of water plus 16 oz. of a 75% nonionic spreader should be applied as an overall spray for control of the above weeds. For aerial application to Waterlettuce, use 7.5 gals. of water per acre plus 16 oz. of a 75% nonionic spreader per 100 gals. spray solution. The high rates of REWARD Herbicide should be used for late season application.

### GALS/SURFACE ACRE

Duckweed ( <i>Lemna</i> spp.)	1
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**APPLICATION:** For control, apply REWARD Herbicide as an overall spray in 50 to 150 gals. of water plus 16 oz. of a 75% nonionic spreader per acre. Care should be taken to thoroughly cover all plants on water and on damp marginal areas. Reinfestation of Duckweed occurs readily from untreated areas. Retreatment with REWARD Herbicide may be necessary to obtain season-long control.

### WEED SPECIES

### GALS/100 GALS WATER

**Marginal Weeds** (Infesting the Edges and Other Portions of Ponds, Lakes and Ditches):

Cattails ( <i>Typha</i> spp.)	1.0
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**APPLICATION:** For top kill, apply REWARD Herbicide in 100 gals. water, at a rate not to exceed 100 gals. per acre, plus 16 oz. of a 75% nonionic spreader for full

coverage and thorough weed control. Repeat treatment as necessary to control regrowth. For best results, apply before flowering.

**ALGAE (U.S., except Florida):** REWARD Herbicide will control certain filamentous algae. For *Spirogyra* spp. and *Pithophora* spp.: Apply 1 to 2 gals. per surface acre. For water less than 2 feet in average depth, use a maximum of 1 gal. REWARD Herbicide per surface acre. Application methods as for submersed weeds.

**Formula for Parts Per Million (PPM) Recommendations**

Gals. to use = ppm recommended x acreage of water x average depth of water x 1.4. For example — ½ ppm recommendations; two acre pond; 4 feet average depth;  $\frac{1}{2} \times 2 \times 4 \times 1.4 = 5.6$  gals. required.

**Do not apply under conditions involving possible drift to food, forage and other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**

**STORAGE AND DISPOSAL**

**PROHIBITIONS:** Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

**STORAGE:** Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, foodstuffs or drinking water. Do not store or transport near feed or food. Store at temperature above 32°F. For help with any spill, leak, fire or exposure involving this material, call CHEMTREC (1-800-424-9300).

**PESTICIDE DISPOSAL:** This product is acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Do not reuse container. Incinerate, burn, or puncture and dispose of in a sanitary landfill, or dispose of by other procedures allowed by State and local authorities. If burned, stay out of smoke.

**FOR BULK AND MINI-BULK CONTAINERS:**

**CONTAINER DISPOSAL:** Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

**CONTAINER PRECAUTIONS:** Before refilling, inspect thoroughly for damage, such as cracks, punctures, bulges, dents, abrasions and damaged or worn threads on closure devices.

**REFILL ONLY WITH REWARD HERBICIDE.** The contents of this container cannot be completely removed by cleaning. Refilling with materials other than REWARD Herbicide will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

**CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER!**

**IMPORTANT:** Read Entire Directions for Use and the Conditions of Sale and Warranty before using this product.

**CONDITIONS OF SALE AND LIMITED WARRANTY:**

The Directions for Use of this product are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as timing and method of application, weather and crop conditions, mixture with other chemicals not specifically recommended or other influencing factors in the use of the product, all of which are beyond the control of the Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label, subject to the inherent risks referred to above, when used in accordance with directions under normal conditions of use. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller, and Buyer and User assume the risk of any such use. SELLER DISCLAIMS ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY WARRANTY OF FITNESS OR MERCHANTABILITY.

When Buyer or User claims losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability or other legal theories), Buyer or User must promptly notify Seller in writing of any claims to be eligible to receive either of the remedies set forth below. The EXCLUSIVE REMEDY OF BUYER OR USER and the LIMIT OF LIABILITY of Seller will be, at the election of Seller, refund of the purchase price paid for product bought, or replacement of amount of product used. SELLER SHALL NOT BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT AND SELLER'S SOLE LIABILITY AND BUYER'S AND USER'S EXCLUSIVE REMEDY SHALL BE LIMITED TO THE REFUND OF THE PURCHASE PRICE.

**ZENECA Professional Products**

P.O. Box 751  
Wilmington, Delaware 19897  
A business unit of ZENECA Inc.

# REWARD<sup>®</sup>

## Aquatic and Noncrop Herbicide

# MATERIAL SAFETY DATA SHEET

### SECTION 1 NAME AND HAZARD SUMMARY

Material name: **REWARD AQUATIC AND NON-CROP MANUFACTURING CONCENTRATE**

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: None.

Health hazards: Irritant (eye, skin, respiratory passages, skin sensitizer). Harmful (oral). Toxic by skin absorption. Toxic (Inhalation), inhalation (TLV).

Read the entire MSDS for a more thorough evaluation of the hazards.

### SECTION 2 INGREDIENTS

Diquat Dibromide (CAS No.: 85-00-7)

Inerts

%

35.3

64.7

OSHA PEL

0.5 mg/m<sup>3</sup>

TWA as diquat

Ingredients not precisely identified are proprietary or nonhazardous.  
Values are not product specifications.

### SECTION 3 PHYSICAL DATA

Appearance and odor: dark brown odorless liquid

Boiling point: No data

Vapor pressure (mmHG at 20°C): No data

Vapor density (air = 1): No data

Solubility in water: Soluble

pH: 6.0 - 7.5

Specific gravity: 1.22 - 1.27 at 20°C

% Volatile by volume: No data

### SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: Not applicable

Autoignition temperature: Not applicable

Extinguishing media: Water fog, alcohol foam, carbon dioxide, dry chemical, halogenated agents.

Special fire fighting protective equipment: Self-contained breathing apparatus with full facepiece and protective clothing.

Unusual fire and explosion hazards: Possible toxic smoke, vapors, fallout and runoff water can result from fires depending on extent of combustion and presence of other combustible materials. Contaminated buildings, areas, and equipment must be properly decontaminated before reuse.

Flammable limits (STP): Not applicable

### SECTION 5 REACTIVITY DATA

Stability: Stable under normal conditions.

Incompatibility: Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Corrosive to aluminum.

Hazardous decomposition products: Combustion products: Carbon dioxide, carbon monoxide. Combustion or thermal decomposition will evolve toxic or irritant vapors.

Hazardous polymerization: Will not occur.

### SECTION 6 HEALTH HAZARD ASSESSMENT

General: This description of toxicological properties is based on experimental results and experience with the material.

Ingestion: The acute oral LD<sub>50</sub> in rats is 810 mg/kg (males) and 600 mg/kg (females). This material is classified as "slightly toxic" by ingestion. Humans, irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion of this product. The degree of injury will depend on the amount absorbed from the gut. Symptoms following ingestion of diquat concentrate may initially include nausea, vomiting, abdominal pain and severe irritation of the mouth, throat and esophagus. These can be followed by kidney failure and other internal organ involvement.

Eye contact: This material may irritate human eyes following contact and could cause prolonged (weeks) impairment of vision. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Symptoms may include pain, tearing, swelling, redness, and blurred vision.

Skin contact: Short contact periods with human skin are not usually associated with skin irritation; repeated and/or prolonged contact can result in skin irritation and skin sensitization (allergic contact dermatitis).

Skin absorption: The dermal LD<sub>50</sub> in rabbits is 260 mg/kg (males) and 315 mg/kg (females). This material is moderately toxic by absorption. The degree of injury will depend on the amount absorbed. Because diquat is an ionized compound, it has a slow rate of absorption through intact skin. Prolonged or repeated contact may result in skin damage, thus allowing more of the chemical to be absorbed. This could result in systemic poisoning as evidenced by injury to internal organs, primarily the kidneys. The no-observed-effect level (NOEL) for dermal toxicity of diquat concentrate was found to be 5mg/kg/day in a 21-day study in rats.

Inhalation: The 4-hour inhalation LC<sub>50</sub> in rats was 121 mg/M<sup>3</sup> in males and 132 mg/M<sup>3</sup> in females. This substance is moderately toxic to internal organs if inhaled. The degree of injury will depend on the airborne concentration and duration of exposure. Diquat is a water-soluble salt which has no measurable vapor pressure. Therefore, inhalation hazard from diquat vapor is minimal. If diquat concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. Symptoms of inhalation overexposure may include headache, nosebleed, sore throat and coughing.

Other effects of overexposure: No other adverse clinical effects have been associated with exposures to this material.

First aid procedures:

General: If a known exposure occurs or is suspected, immediately start the recommended procedures below. If further treatment is required, contact a Poison Center, a physician or the nearest hospital. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms, and follow the advice given.

Skin: Wash material off of the skin with plenty of soap and water. If redness occurs or diquat contacts a skin cut or area of abrasion, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse.



**Eyes:** Immediately flush with plenty of water. At least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

**Ingestion:** Give 1 or 2 glasses of water to drink and refer person to medical personnel. (Never give anything by mouth to an unconscious person.)

**Inhalation:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Consult medical personnel.  
**To Physician:** Call 1-800-327-8633 to obtain medical and toxicology information. To be effective, treatment for diquat poisoning must begin immediately. Treatment consists of binding diquat in the gut with suspensions of activated charcoal on bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from blood by charcoal hemoperfusion or continuous dialysis.

## SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices.

A small spill can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use the following procedures:

1. Do not allow material to enter streams, sewers or other waterways.
2. Spread a suitable absorbent such as clay on the spill, and shovel into an open drum.
3. Generously cover the contaminated areas with common, household detergent (e.g., TIDE, registered trademark Procter & Gamble Company). Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders.
4. Spread absorbents on the slurry liquid and shovel mixture into the open drum.
5. Repeat #3 and #4 if necessary.
6. Rinse with a small amount of water and use absorbent to collect the wash solution. Shovel into the open drum.
7. Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan. Otherwise, in case of emergency call, day or night, 800-424-9300, CHEMTREC.

**Disposal method:** This product is toxic by inhalation and skin absorption and must be handled with caution. This material is toxic to fish and wildlife. Do not contaminate waterways by cleaning of equipment or by disposal of wastes. Untreated effluent should not be discharged where it will drain into lakes, streams, or ponds. Discarded product is not a hazardous waste under RCRA, 40 CFR 261. Disposal should be in accordance with local, state or national legislation.

**Container disposal:** Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

## SECTION 8 SPECIAL PROTECTION INFORMATION

**TLV or suggested control value:** ACGIH TLV for diquat is 0.5 mg/M<sup>3</sup> for total dust and 0.1 mg/M<sup>3</sup> for respirable fraction. The OSHA PEL for diquat is 0.5 mg/M<sup>3</sup> TWA. Minimize exposure in accordance with good hygiene practice.

**Ventilation:** This product is intended for use outdoors where engineering controls are not necessary. If use conditions are different (e.g., product reformulation or repackaging), use ventilation adequate to maintain safe levels.

**Respiratory protection:** No special respiratory protection is normally required. However, if the concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. Use a NIOSH/MSHA approved pesticide respirator if there is a risk of exposure to spray mist or dust.

**Protective clothing:** Skin contact should be prevented through the use of impervious gloves, footwear, long-sleeved clothing, and wide brimmed hat. Remove contaminated clothing and wash before reweaving. Wash separately from other laundry.

**Eye protection:** Eye contact with the material should be avoided through the use of chemical goggles and/or faceshield, selected in regard to exposure potential.

**Other protective equipment:** An adequate supply of clean potable water should be available to allow thorough flushing of skin and eyes in event of contact with this compound.

## SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

**Special precautions or other comments:** Prevent skin and eye contact. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Do not store near food, or within the reach of children. Containers should be stored in a cool, dry, well-ventilated area away from flammable materials and sources of heat or flame. Exercise due caution to prevent damage to or leakage from the container.

## SECTION 10 REGULATORY INFORMATION

**TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710:** This product is a pesticide and is exempt from TSCA regulation.

**CERCLA and SARA Regulations (40 CFR 355, 370, and 372):** Section 313 Supplier Notification. This product contains the following toxic chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.101:

Ethylene dibromide (CAS 106-93-4)

California Proposition 65: WARNING. This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**Other Determined Regulations:** None.

EPA Registration No. 10182-355

The information herein is given in good faith, but no warranty, expressed or implied, is made.

Prepared/Reviewed: 12/07/92

CIDS: 39541

**ZENECA Professional Products**

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Phone: (302) 886-3000 (Technical) (24-Hours)  
(800) 327-8633 (Medical)  
(800) 327-8633 (CHEMTREC)

# Weedar® 64

Brand Broadleaf Herbicide

RHÔNE-POULENC

## The 2,4-D Amine Weed Killer

### ACTIVE INGREDIENT:

2,4-Dichlorophenoxyacetic acid, dimethylamine salt\* .....46.8%

INERT INGREDIENTS: .....53.2%

\*2,4-Dichlorophenoxyacetic acid equivalent 38.9% by weight or 3.8 pounds per gallon

\*Isomer specific by AOAC method No. 978.05

E.P.A. Reg. No. 264-2AA

E.P.A. Est. No. 264-MO-01

## KEEP OUT OF REACH OF CHILDREN DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

For PRODUCT USE Information Call 1-800-334-9745

For EMERGENCY Information ONLY Call 24 Hours A Day 1-800-334-7577.

## STATEMENT OF PRACTICAL TREATMENT

**IF ON SKIN:** Wash skin with plenty of soap and water. Remove contaminated clothing. Get medical attention.

**IF SWALLOWED:** If patient is conscious and alert, give 2 to 3 glasses of water or milk to drink. If available, give one tablespoon of Syrup of Ipecac to induce vomiting. Alternatively, induce vomiting by touching back of throat with finger. Do not make an unconscious person vomit. Get medical attention.

**IF IN EYES:** Flush with water for at least 15 minutes. Get medical attention, PREFERABLY AN OPHTHALMOLOGIST.

**IF INHALED:** Move to an uncontaminated area. Get medical attention.

### NOTE TO PHYSICIAN

This product contains a phenoxy herbicidal chemical. There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

## PRECAUTIONARY STATEMENTS

### DANGER

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes irreversible eye damage. Harmful if swallowed or absorbed through the skin. Avoid breathing vapors or spray mist. Do not get in eyes, on skin or on clothing.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: coveralls over short-sleeved shirt and short pants, waterproof gloves, chemical-resistant footwear plus socks, chemical-resistant headgear for overhead exposure and protective eye wear. A chemical-resistant apron should also be worn when cleaning equipment, mixing or loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE (personal protective equipment) may be reduced or modified as specified in the WPS.

For containers over 1 gallon but less than 5 gallons, mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE. For containers of 5 gallons or more, a mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide containers are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

Users should: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. For aerial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions favor drift from treated areas. Do not use the same spray equipment for other purposes unless thoroughly cleaned.

Do not contaminate water used for irrigation or domestic purposes (except as specifically recommended on this label) especially in areas where grapes, cotton, tomatoes or other susceptible plants are grown.

Do not treat irrigation ditches in areas where water will be used to overhead (sprinkler) irrigate susceptible crops especially grapes, tomatoes, tobacco, and cotton.

**MIXING AND LOADING:** Most cases of ground water contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of ground water supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent ground water contamination.

Do not apply WEEDAR® 64 Broadleaf Herbicide directly to, or permit to drift onto cotton, okra, grapes tomatoes, fruit trees, vegetables, flowers or other desirable crop or ornamental plants which are susceptible to 2,4-D herbicide. Do not apply near susceptible plants since very small quantities of the 2,4-D will cause severe injury during the growing or dormant periods. Crops contacted by WEEDAR® 64 Broadleaf Herbicide sprays or spray drift may be killed or suffer significant stand loss with extensive quality and yield reduction.

Do not apply when a temperature air inversion exists. Such a condition is characterized by little or no air movement and an increase in air temperature with an increase in height. In humid regions, a fog or mist may form. An inversion may be detected by producing a smoke column and checking for a layering effect. If questions exist pertaining to the existence of an inversion, consult with local weather services before making an application.

Use coarse sprays to minimize drift. Do not apply with hollow cone-type insecticide or other nozzles that produce fine spray droplets. Drift from aerial or ground application may be reduced by: (1) applying as near to the target as possible in order to obtain coverage; (2) by increasing the volume of spray mix per acre; (3) by decreasing the pounds of pressure at the nozzle tips; and (4) by using nozzles which produce a coarse spray pattern; (5) by not applying when wind is blowing toward susceptible crops or valuable plants.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.  
Read entire label before using this label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers should be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specified instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil or water is: coveralls over short-sleeved shirt and short pants, waterproof gloves, chemical-resistant footwear plus socks, chemical-resistant headgear for overhead exposure and protective eye wear.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to ornamental turf uses (golf courses, cemeteries, parks and other turf grass areas) of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not allow people (other than applicator) or pets on treatment area during application.

Do not enter treatment areas until sprays have dried.

## STORAGE AND DISPOSAL

### STORAGE

Do not contaminate water, food or feed by storage or disposal. Store in original container in a dry secured storage area. Keep container tightly closed when not in use.

### PESTICIDE DISPOSAL

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### CONTAINER DISPOSAL

Triple rinse or (equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## GENERAL CAUTIONS AND RESTRICTIONS

Do not apply WEEDAR® 64 Broadleaf Herbicide through any type of irrigation system.

Do not use in or near a greenhouse.

## MIXING INSTRUCTIONS

Mix WEEDAR® 64 Broadleaf Herbicide only with water, unless otherwise directed on this label. Add about one-half the water to the mixing tank, then add WEEDAR® 64 with agitation and finally the rest of water with continuing agitation.

**NOTE:** Adding oil, wetting agent, or other surfactants to the spray may increase effectiveness on weeds but also may reduce selectivity to crops, resulting in crop damage.

## COMPATIBILITY

If WEEDAR® 64 Broadleaf Herbicide is to be tank mixed with fertilizers or with other pesticides, compatibility should be tested prior to mixing. To test for compatibility, use a small container and mix a small amount (0.5 to 1 qt) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5 to 15 minutes after mixing.

Read and follow all directions and precautions on this label and on the labels of any products for which a tank mixture is being considered.

## APPLICATION PROCEDURES

Apply by air or ground equipment in sufficient gallonage to obtain adequate coverage, except as otherwise directed on this label.

Use 2 or more gallons of water per acre for aerial application and 10 or more gallons of water per acre for ground application.

## GENERAL INFORMATION

**INJURY TO CROPS FROM THIS HERBICIDE MAY OCCUR. IF YOU ARE NOT PREPARED TO ACCEPT SOME DEGREE OF CROP INJURY DO NOT USE THIS PRODUCT.**

Crop varieties vary in response to 2,4-D and some are easily injured. Apply WEEDAR® 64 Broadleaf Herbicide only to varieties known to be tolerant to 2,4-D. If you are uncertain concerning tolerant varieties or local use situations that may affect crop tolerance to 2,4-D, consult your seed company, state Agricultural Extension Service or qualified crop consultant for advice.

Be sure that use of this product conforms to all applicable laws, rules and regulations. Certain states have restrictions pertaining to application distances from susceptible crops. The applicator should become familiar with these laws, rules or regulations and follow them exactly.

## GENERAL WEED LIST

### Annual and Biennial Weeds

*beggarticks	*mallow (venice or little)	*Russian thistle
bullthistle	marshelder	Salsify (western or common)
cofeeweed	morningglory (common, ivy, wooly)	*smartweeds (annual species)
common cocklebur	*musk thistle(***)	sowthistles (annual or spiny)
common burdock	mustards (except blue mustard)	sunflower
common evening primrose	pepper weeds (except perennial)	*vervains
common lambsquarters	**pigweeds (Amaranthus spp.)	vetches
hairy galinsoga	prickly lettuce	wild carrot
jimsonweed	ragweed (common or giant)	wild lettuce
*knotweed	rough fleabane	wild parsnips

### Perennial Weeds

\*dandelion (hedge, field, European)  
 \*blue lettuce  
 \*Canada thistle  
 \*catnip  
 \*chicory  
 \*dandelion  
 \*docks  
 \*dogbanes

\*goldenrod  
 \*ground ivy  
 \*healall  
 \*hoary cress  
 \*ironweed  
 \*Jerusalem-artichoke  
 \*many flowered aster

\*\*nettles (including stinging)  
 \*orange hawkweed  
 \*plantains  
 \*sowthistle (perennial)  
 \*vervains  
 \*wild garlic  
 \*wild onion

\*These species may require repeated applications and/or use of the higher rate recommended on this product label even under ideal conditions for application.

\*\*Control of pigweeds in the High Plains area of Texas and Oklahoma may not be satisfactory with this product.

\*\*\*Not registered for control of musk thistle in California.

## SPECIFIC USE DIRECTIONS

### CEREAL GRAINS

CROP	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Wheat, Barley, Oats and Rye (not underseeded with legumes) Postemergence Annual and biennial broadleaf weeds Perennial broadleaf weeds	1/2 to 2 pints* 1 to 2 pints*	Apply after grain is fully tillered (usually 4 to 8 inches high) but not forming joints in the stem. Do not spray grain in the boot to dough stage.
Wheat, Barley, Oats and Rye (underseeded with legumes)	1/4 to 1/2 pint*	Apply after grain is 8 inches tall. Do not spray grain in boot to dough stage. Do not spray alfalfa or sweet clover unless the infestation is severe and injury to these legumes can be tolerated.
Emergency weed control in Wheat Perennial broadleaf weeds	3 pints	Apply when weeds are approaching bud stage, after the grain dough stage. Do not spray during the boot to dough stage. The 3 pints per acre application can product injury to wheat. Balance the severity of your weed problem against the possibility of crop damage. Where perennial weeds are scattered, spot treatment is suggested to minimize the extent of crop injury.

### RESTRICTIONS AND LIMITATIONS FOR USE ON CEREAL GRAINS

For aerial application on grain, apply WEEDAR® 64 Broadleaf Herbicide in 3 to 10 gallons of water per acre.

For ground application a minimum of 10 to 15 gallons of water per acre is recommended for proper spray coverage.

Do not permit dairy animals or meat animals being finished for slaughter to forage treated grain fields within 2 weeks after treatment.

Do not feed treated straw to livestock if an emergency treatment as described above is applied.

\*Use the lower rate if small annual and biennial weeds are the major problem. Use the higher rate if perennial weeds or annual and biennial weeds are present which are in the hard-to-kill categories as determined by local experience. The higher rates increase the risk of grain injury and should be used only where the weed control problem justifies the grain damage risk. Do not apply WEEDAR® 64 to grain in the seedling stage.

## CORN AND SORGHUM

CROP	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
<b>CORN (Field and Sweet)</b> <b>Preplant</b>  <b>Preemergence</b>  <b>Postemergence</b> Annual broadleaf weeds Perennial broadleaf weeds	1 to 2 pints  2 to 3 pints  1/2 to 1 pint 1 to 1 1/2 pints	<p>To control emerged broadleaf weed seedlings or existing cover crops prior to planting corn, apply 7 to 14 days before planting. Do not use on light, sandy soil, or where soil moisture is inadequate for normal weed growth. Use high rate for less susceptible weeds or cover crops such alfalfa.</p> <p>Apply 3 to 5 days after planting but before corn emerges. Do not use on light, sandy soils or where soil moisture is low.</p> <p>Apply when weeds are small and corn is less than 8 inches tall (to top of canopy). When corn is over 8 inches tall, use drop nozzles and keep spray off foliage. Treat perennial weeds when they are in the bud to bloom stage. <b>Do not spray corn in the tassel to dough stage.</b> Corn treated with 2,4-D may become temporarily brittle. Winds or cultivation may cause stalk breakage during the period of time when the corn is brittle.</p>
<b>Grain Sorghum (Milo)</b> Postemergence	1 pint	<p>Apply when sorghum is 6 to 15 inches tall. If sorghum is taller than 8 inches to top of the canopy, use drop nozzles and keep spray off the foliage. <b>Do not treat during the boot, flowering or dough stage.</b></p>

### RESTRICTIONS AND LIMITATIONS FOR USE ON CORN AND SORGHUM

Do not forage or feed fodder for 7 days following application.

## SOYBEANS (Preplant Only)\*

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Postemergence	3/4 to 1 pint	Apply not less than 15 days prior to planting soybeans, when weeds are small and actively growing. Use the higher rate on larger weeds and when perennials are present.
	> 1 to 2 pints	Apply not less than 30 days prior to planting soybeans, when weeds are actively growing.
		<p>In addition to those weeds found on the GENERAL WEED LIST, WEEDAR® 64 will suppress or control the following broadleaf weeds frequently encountered in reduced tillage soybean production systems: alfalfa*, bullnettle, smallflowered bittercress, Carolina geranium, smallflowered buttercup, common and rough cinquefoil, red clover*, horseweed or marestalk, mousetail, wild mustard, field pennycress, cutleaf evening primrose, common purslane, speedwell, velvetleaf, and Virginia copperleaf.</p> <p>* These weeds are only partially controlled.</p> <p>Apply no more than 2.0 pints of WEEDAR® 64 in one season prior to planting soybeans. After applying, plant soybean seed as deep as practical or at least 1 1/2 to 2 inches deep. Adjust the planter press wheel, if necessary, to ensure that planted seed is completely covered.</p> <p>If desired, WEEDAR® 64 may be applied pre-plant to soybeans in tank mixtures with other herbicides such as Poast, Poast Plus, Roundup, Roundup D-Pak, Honcho, Gramoxone Extra, Prowl, Pursuit Plus, Scepter, Scepter 70 DG, Squadron and others that are registered for pre-plant soybean use.</p> <p><b>NOTE:</b> Unacceptable injury to soybeans planted in fields previously treated with WEEDAR® 64 may occur and the extent of injury will depend on weather and agronomic factors such as the amount of weed vegetation and previous crop residue present that may be in effect between the time of application and the emergence of the soybean plant.</p>

### RESTRICTIONS AND LIMITATIONS FOR USE IN SOYBEANS (PRE-PLANT)

Do not apply WEEDAR® 64 when weather conditions such as temperature, air inversions, or wind favor drift from treated areas to susceptible plants.

Apply no more than 2.0 pints of WEEDAR® 64 per acre in one season prior to planting soybeans.

Only one application per growing season, regardless of the application rate used, is allowed.

Do not apply WEEDAR® 64 prior to planting soybeans if you are not prepared to accept the results of soybean injury including possible loss of stand and yield.

Do not replant fields treated with WEEDAR® 64 in the same growing season with crops other than those labeled for 2,4-D pre-plant use.

Do not mow or cultivate weeds prior to treating with WEEDAR® 64 as poor control may result.

Do not cut for feed treated hay, forage, or fodder or graze treated soybeans to livestock.

Do not apply WEEDAR® 64 pre-plant to soybeans in fields having a coarse-textured soil where the percent organic matter is <1.0%.

Only one application of WEEDAR® 64 may be made prior to planting soybeans per growing season.

Do not feed treated hay, forage, or fodder. Restrict livestock from grazing treated fields.

\* Not currently registered in California.

## RICE, SUGARCANE, FALLOWLAND AND CROP STUBBLE

CROP	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Rice (Pre-plant use)	1 to 2 pints	Apply four or more weeks prior to planting rice. DO NOT USE IN CALIFORNIA.
Rice (Postemergence use)	1 to 2 1/2 pints	Apply when rice is in the late tillering stage of development at the time of first joint development. Do not apply after panicle initiation, after rice internodes exceed one-half inch, at early seedling, early panicle, boot or heading stages. Consult local university or Agricultural Extension Service specialists for more specific information on rates and timing of application.
Sugarcane Preemergence Postemergence	4 pints 1 1/2 to 2 pints	Apply before canes appear for control of emerged broadleaf weeds. Apply after cane emerges and through lay-by. DO NOT USE IN CALIFORNIA.
Fallowland and Crop Stubble Annual broadleaf weeds	1 to 2 pints	Use the lower rate when weeds are small (2 to 3 inches tall) and actively growing. Use the higher rate on older and drought-stressed plants.
Biennial broadleaf weeds	2 to 4 pints	Spray while musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks become apparent. The lower rate can be used in the spring during rosette stage. Use the highest rate in the fall or after flower stalks have developed.
Perennial broadleaf weeds	2 to 6 pints	Spray weed in the bud to bloom stage or while in good vegetative growth. Do not disturb treated areas for at least 2 weeks after treatment, or until tops are dead.
Wild garlic and onion in crop stubble	4 to 6 pints	Apply to new regrowth of wild garlic or onion which occurs in the fall following harvest of small grains, corn or grain sorghum.

### RESTRICTIONS AND LIMITATIONS FOR USE IN FALLOWLAND AND CROP STUBBLE

Do not plant any crop for 3 months after treatment or until chemical has disappeared from the soil.

### RESTRICTIONS AND LIMITATIONS FOR USE IN RICE

Do not apply more than a total of 2 1/2 pints of WEEDAR® 64 to rice per growing season.

## ESTABLISHED GRASS PASTURES, RANGELAND, AND CONSERVATION RESERVE PROGRAM AREAS

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual broadleaf weeds	2 pints	Apply when weeds are small and actively growing and prior to bud stage. Spray while musk thistles or other biennial species are in the seedling to rosette stage and before flower stalks become apparent. The lower rate can be used in the spring during rosette stage. Use the highest rate in the fall or after flower stalks have developed. Do not apply to newly seeded areas until grass is well established. Do not apply to grass in the early boot through milk stage if grass seed production is desired. Bentgrass and legumes may be injured by this treatment.
Biennial and perennial broadleaf weeds	2 to 4 pints	

### RESTRICTIONS AND LIMITATIONS FOR USE IN PASTURES AND RANGELANDS

Do not graze (dairy) cattle in treated areas for 7 days after application.

Do not cut forage for hay within 30 days of application.

Do not permit dairy animals or meat animals being finished for slaughter to forage treated fields within 3 days of slaughter.



## CONSERVATION RESERVE PROGRAM AREAS

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual broadleaf weeds In young grasses	1/2 to 1 pint	Apply to actively growing annual broadleaf weeds. Use 1/2 to 1 pint when weeds are small; use higher rates on older weeds. Do not apply to young grasses with fewer than 6 leaves or prior to tillering, as excessive injury may result. Do not apply more than 1 pint until grasses are well established as excessive injury may result.
In established grasses	1/2 to 2 pints	
Biennial and perennial broadleaf weeds In established grasses	2 to 4 pints	Treat when biennial weeds are in the seedling to rosette stage and before flower stalks become apparent. Treat perennial weeds in the bud to bloom stage. Apply to actively growing weeds.

### RESTRICTIONS AND LIMITATIONS FOR USE ON CONSERVATION RESERVE PROGRAM AREAS

Use at least 2 gallons of water per acre by air and 5 gallons of water per acre by ground.

Do not harvest or graze treated Conservation Reserve Program areas.

Do not apply to grasses in the boot to dough stage if grass seed production is desired.

## GRASSES FOR SEED PRODUCTION

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual and perennial broadleaf weeds	2 to 4 pints	Apply to established stands in spring from tiller to early boot stage. <b>Do not spray in boot stage.</b> New spring seedlings may be treated with the lower rate after grass seedlings have at least 5 leaves. Perennial weed regrowth may be treated in the fall. <b>DO NOT USE IN CALIFORNIA.</b>

### RESTRICTIONS AND LIMITATIONS FOR USE ON GRASSES FOR SEED PRODUCTION

Do not graze dairy animals or cut forage for hay within 7 days of application.

## NON-CROPLAND

fencerows, roadsides, drainage ditches, and other non-crop areas

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual broadleaf weeds	2 to 4 pints	Treat when weeds are young and actively growing. Perennial weeds should be near the bud stage, but not flowering at application. Do not use on susceptible southern grasses such as St. Augustine. Do not apply to newly seeded areas until grass is well established. Bentgrass, clover, legumes and dichondria may be injured by this treatment.
Biennial and perennial broadleaf weeds	4 to 8 pints	

### RESTRICTIONS AND LIMITATIONS FOR USE ON NON-CROPLAND

Do not graze dairy animals for 7 days following application.

Use sufficient gallonage for thorough and uniform coverage.

**WEEDS IN ORNAMENTAL TURF AREAS**  
golf courses, cemeteries, parks, turfgrass, and other grass areas

WEEDS	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual broadleaf weeds	2 to 4 pints	Treat when weeds are young and actively growing. Perennial weeds should be near the bud stage, but not flowering at application. Do not use on susceptible southern grasses such as St. Augustine. Do not apply to newly seeded areas until grass is well established. Bentgrass, clover, legumes and dichondria may be injured by this treatment.
Biennial and perennial broadleaf weeds	4 pints	

**RESTRICTIONS AND LIMITATIONS FOR USE ON ORNAMENTAL TURF AREAS**

Use sufficient gallonage for thorough and uniform coverage.

Do not apply more than 2 broadcast applications per year per treatment site. This does not exclude spot treatments.

Do not allow people (other than applicator) or pets on treatment area during application.

Do not enter treatment areas until sprays have dried.

**SPOT TREATMENT IN NON-CROP AREAS**

Mix 2 to 3 fluid ounces of WEEDAR® 64 Broadleaf Herbicide in 3 gallons of water. Wet all weeds and stems thoroughly. For best results, treat when weeds are actively growing.

**FORESTRY - TREE INJECTION**

For controlling species such as alder, aspen, birch, blackgum,  
cherry, oak, sweetgum, and tulip poplar

Make injections as near to the root collar as possible, using one injection per inch of trunk dbh (4 1/2 feet). For resistant species such as hickory, injections should overlap. For best results, injections should be made during the growing season, May 15th through October 15th.

**For Dilute Injection:** Mix 1 gallon of WEEDAR® 64 Broadleaf Herbicide in 19 gallons of water for dilute injections.

**For Concentrate Injections:** Use 1 to 2 ml of concentrate WEEDAR® 64 Broadleaf Herbicide per injection. The injection bit must penetrate the inner bark.

**STONE FRUIT AND NUT ORCHARDS**

WEEDS IN CROP	AMOUNT OF WEEDAR® 64 PER ACRE	DIRECTIONS
Annual broadleaf weeds	3 pints	For control of weeds on the orchard floor, apply using coarse sprays and low pressure in sufficient volume of water to obtain thorough wetting of weeds. Treat when weeds are small and actively growing. Do not use on light, sandy soil. <b>DO NOT USE IN CALIFORNIA.</b>

**RESTRICTIONS AND LIMITATIONS FOR USE IN STONE FRUIT AND NUT ORCHARDS**

Do not apply to bare ground as injury may result.

Do not apply immediately before irrigation and withhold irrigation for 2 days before and for 3 days after treatment.

Do not allow spray to drift onto or contact foliage, fruit, stems, trunks of trees or exposed roots as injury may result.

Do not apply to newly established or young orchards. Trees must be at least 1 year old and in vigorous condition.

Do not apply during bloom.

Do not graze or feed cover crops from treated orchards.

Do not make more than 2 applications per year.

Do not harvest stone fruit within 40 days of application.

Do not harvest nuts within 60 days of application.

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## WEEDS AND BRUSH IRRIGATION CANAL DITCHBANKS

(Seventeen Western States: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming).

For control of annual and perennial broadleaf weeds, apply 1 to 2 quarts of WEEDAR® 64 Broadleaf Herbicide per acre in approximately 20 to 100 gallons per acre. Treat when weeds are young and actively growing before the bud or early bloom stage. For harder-to-control weeds, a repeat spray after 3 to 4 weeks using the same rates may be needed for maximum results. Apply no more than two treatments per season.

For woody brush and patches of perennial broadleaf weeds, mix 1 gallon of WEEDAR® 64 in 150 gallons of water. Wet foliage thoroughly using about 1 gallon of solution per square rod.

### SPRAYING INSTRUCTIONS

Apply with low pressure (10 to 40 psi) power spray equipment mounted on a truck, tractor, or boat. Apply while traveling upstream to avoid accidental concentration of chemical into water. Spray when the air is fairly calm, 5 mph or less. Do not use on small canals (less than 10 cfs) where water will be used for drinking purposes.

Boom spraying onto water surface must be held to a minimum and no cross-stream spraying to opposite banks should be permitted. When spraying shoreline weeds, allow no more than 2 foot overspray onto water with an average of less than 1 foot overspray to prevent introduction of greater than negligible amounts of chemical into the water.

Do not allow dairy animals to graze on treated areas for at least 7 days after spraying. Water within treated banks should not be fished.

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## AQUATIC WEED CONTROL

For use in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, rivers and streams that are quiescent or slow moving.

### NOTICE TO APPLICATORS

**State and Local Coordination:** Before application, coordination and approval of local and state authorities may be required, either by letter of agreement or issuance of special permits for such use.

**Water Toxicity - Oxygen Ratio:** Fish breathe oxygen in the water and a water - oxygen ratio must be maintained. Decaying weeds deplete oxygen. To avoid fish kill from decaying plant material do not treat more than one half the lake or pond at one time. For large bodies of weed infested waters leave buffer strips of at least 100 feet wide and delay treatment of these strips for 4 to 5 weeks or until the dead vegetation has decomposed.

**Wind Velocity - Ground or Surface Application:** Do not apply when wind speeds are at or above 10 mph. **Air Application:** Do not apply when wind speeds are at or above 5 mph. The restrictions do not apply to subsurface applications used in weed control programs.

**Irrigation:** Delay the use of treated waters for irrigation for three weeks after treatment unless an approved assay shows that the water does not contain more than 0.1 ppm 2,4-D acid. Do not treat irrigation ditches in areas where water will be used to overhead sprinkler irrigate susceptible crops especially grapes, tomatoes and cotton.

**Potable Water:** Delay the use of treated water for domestic purposes for a period of three weeks or until such time as an approved assay shows that the water contains no more than 0.1 ppm 2,4-D acid.

### Water Hyacinth (*Eichornia crassipe*) - Directions For Use

WEEDAR® 64 will control water hyacinth with surface and air applications.

**Amounts to Use:** 2 to 4 quarts (4 lb. acid equivalent per gallon) per acre. **Spray the weed mass only.** Use 4 quarts when plants are matured or when the weed mass is dense.

**When To Apply:** Spray when water hyacinth plants are actively growing. Repeat as necessary to kill regrowth and hyacinth plants missed in the previous operation.

**How To Use - Surface Application:** Use power sprayers operated with a boom or spray gun mounted on a boat, tractor or truck. Thorough wetting of foliage is essential for maximum control. Use 100 to 400 gal./A of spray mixture. Special precautions such as the use of low pressure, large nozzles and thickening agents should be taken to avoid spray drift in areas of sensitive crops. For DIRECTA-SPRAY™ operation use WEEDAR® 64 with 1 pint of drift control agent in 50 to 100 gallons of water. For other applications, follow the drift control agent label for mixing directions. **Air Application:** Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 1.0 gallon per acre of WEEDAR® 64 through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems, apply WEEDAR® 64 in 12 to 15 gallons spray mix per acre.

2,4-D Acid Equivalent	1/2 lb.	1 lb.	2 lbs.	3 lbs.	4 lbs.
WEEDAR® 64	1 pt.	2 pts.	2 qts.	3 qts.	4 qts.

## **Water Milfoil (*Myriophyllum spicatum*) - Directions For Use**

For Eurasian Water Milfoil in programs conducted by the Tennessee Valley Authority in dams and reservoirs of the TVA system.

WEEDAR® 64 will control water milfoil with surface, subsurface and air applications.

**How To Use:** To control water milfoil when less than 5 gallons of concentrate per acre is recommended, dilute the concentrate with water to apply a minimum of 5 gallons of spray mix per acre. Do not treat within 1/2 mile of potable water intakes. Shoreline areas should be treated by sub-surface injection applied by boat to avoid aerial drift. Do not apply when weather conditions favor drift from target area. Do not contaminate water by cleaning of equipment washwaters.

**Open Water Areas:** To reduce contamination and prevent undue exposure to fish and other aquatic organism, do not treat water areas that are not infested with aquatic weeds.

**Amounts To Use:** Apply 2.5 to 10 gallons of WEEDAR® 64 per acre. The higher rate is used in areas of greater water exchange. These areas may require a repeat application.

**When To Apply:** For best results, apply in spring or early summer when milfoil starts to grow. This timing can be checked by sampling the lake bottom in areas heavily infested with weeds the year before.

**Subsurface Application:** Apply 2.5 to 10 gallons of WEEDAR® 64 per acre as a concentrate directly into the water through boat mounted distribution systems.

**Surface Application:** Apply 2.5 to 10 gallons of WEEDAR® 64 per acre in a minimum spray volume of 5 gallons mix per acre.

**Air Application:** Use drift control spray equipment or thickening agents mixed into the spray solution. Apply 2.5 to 10 gallons per acre of WEEDAR® 64 through standard boom systems with a minimum of 5 gallons of spray mix per acre. For MICROFOIL® drift control spray systems apply WEEDAR® 64 in 12 to 15 gallons spray mix per acre.

## **LIMITED WARRANTY AND DISCLAIMER**

The manufacturer warrants that this product conforms to the chemical description on the label; that this product is reasonably fit for the purposes set forth in the directions for use when it is used in accordance with such directions; and that the directions, warnings and other statements on this label are based upon responsible experts' evaluation of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants, and of residues on food crops, and upon reports of field experience. Tests have not been made on all varieties or in all states or under all conditions. THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE, ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.

BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

### **NOTICE TO BUYER**

Purchase of this material does not confer any rights under patents governing this product or the use thereof in countries outside of the United States.

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Rhône-Poulenc Ag Company  
P.O. Box 12014, 2 T.W. Alexander Drive  
Research Triangle Park, North Carolina 27709

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## M A T - R I A L   S A F E T Y   D A T A   S H E E T

RHONE-POULENC AG COMPANY

P.O. Box 12014, T.W. Alexander Drive, Research Triangle Park, NC 27709  
24-HOUR EMERGENCY TELEPHONE 1-800-334-7577 OR CHEMTREC 1-800-424-9300

Effective Date: APR 5, 1994

Date Printed: AUG 29, 1994

Supercedes: APR 29, 1953

PRODUCT CODES: H98373, H98471, H98473, H98474, H98475, H98596  
S80853502GA, S80856509OT

EPA Registration Number: 264-2

Page: 1

PRODUCT NAME: "WEEDAR" BRAND 64 BROADLEAF HERBICIDE

## I. IDENTIFICATION

CHEMICAL NAME: Dimethylamine salt of 2,4-dichlorophenoxyacetic acid

FORMULA: C8H6Cl2O3.C2H7N

MOLECULAR WEIGHT: 266.12

SYNONYMS: 2,4-D, dimethylamine salt

CAS # & NAME:  
2008-39-1

Acetic acid, (2,4-dichlorophenoxy)- compound with  
N-methylmethanamine (1:1)

## IMPORTANT HEALTH EFFECT INFORMATION

**DANGER**

MAY BE FATAL IF ABSORBED THROUGH THE SKIN.  
CAUSES IRREVERSIBLE EYE DAMAGE.

See Section IV for complete Health Hazard Data.

NATIONAL FIRE PROTECTION ASSOCIATION RATING

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

KEY = NFPA/HMIS	NFPA	HMIS
4=Extreme/ Severe	2	2
3=High/ Serious	1	1
2=Moderate		
1=Slight		
0=Minimum		
	Health	
	Fire	
	Reactivity	

SARA TITLE III HAZARD CLASSIFICATION

Immediate (acute) Health	YES
Delayed (chronic) Health	YES
Fire	NO
Sudden Release of Pressure	NO
Reactive	NO

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## I. HAZARDOUS INGREDIENTS

MATERIAL

WEIGHT %

(1) Dimethylamine salt of 2,4-dichlorophenoxyacetic acid

46.8

## ALLOWABLE EXPOSURE LIMITS:

2,4-D Salts: 5 mg/cubic meter TWA (Rhone-Poulenc recommended exposure limit)

## III. PHYSICAL DATA

SPECIFIC GRAVITY:	1.16 @ 20/20 degrees C
BULK DENSITY:	Not applicable
BOILING POINT, 760 mm Hg, Degrees C (F):	Not known
MELTING POINT, Degrees C (F):	Not applicable
FREEZING POINT, Degrees C (F):	-6 (21)
VAPOR PRESSURE, 25 Degrees C:	Not known
VAPOR DENSITY (air=1):	Not known
pH:	7.5 to 10 (product)
SOLUBILITY IN WATER, %/wt @25 Degrees C:	100%
APPEARANCE AND ODOR:	Clear, brown to black liquid Characteristic phenoxy odor

## IV. HEALTH HAZARD DATA

### TOXICOLOGY DATA:

Oral LD50 (rats):	1161 mg/kg body weight
Dermal LD50 (rabbits):	1544 mg/kg body weight
Inhalation LC50 (rats - 4 Hour Exposure):	No information available
Skin Effects (rabbits):	Minimal irritation
Eye Effects (rabbits):	Severe irritation

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IV. HEALTH HAZARD DATA (continued)

CARCINOGENICITY, TERATOGENICITY, MUTAGENICITY:

The International Agency for Research on Cancer (IARC) lists exposure to phenoxyacetic acid herbicides as a class 2B carcinogen, limited evidence for carcinogenicity in humans. The Science Advisory Panel of EPA has given a Class D classification (not classifiable as to human carcinogenicity) and has required additional animal studies on 2,4-D. After a professional scientific review of available information, the Company has reservations as to whether the substance presents a carcinogenic risk.

Animal studies with the active ingredients in this product have shown that they are not mutagenic or teratogenic.

SIGNS OF POISONING: When individually administered in large doses to animals, the most characteristic signs of poisoning are those of myotonia.

EFFECTS OF SINGLE OVEREXPOSURE:

Swallowing:

Harmful if swallowed. (See TOXICOLOGY DATA)

May cause nausea, vomiting, abdominal pain, myotonia, muscle weakness, and fall in blood pressure.

Skin Absorption:

May be fatal if absorbed through the skin. (See TOXICOLOGY DATA)

May cause nausea, myotonia, muscle weakness, and fall in blood pressure.

Inhalation:

No specific information available, but vapors or sprays (mists) may be harmful if inhaled and cause irritation to the respiratory tract.

May also cause nausea, myotonia, muscle weakness, and fall in blood pressure.

Skin Irritation:

No adverse effects anticipated based on available information.  
(See TOXICOLOGY DATA)

Eye Contact:

Causes irreversible eye damage, seen as corneal opacity.

(See TOXICOLOGY DATA)

Vapors or sprays (mists) are irritating to the eyes.

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IV. HEALTH HAZARD DATA (continued)

EFFECTS OF REPEATED OVEREXPOSURE:

Repeated overexposure to 2,4-D herbicides may cause liver, kidney, gastrointestinal and muscular effects. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

OTHER EFFECTS OF OVEREXPOSURE:

See Notes To Physician.

EXISTING MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Skin irritation may be aggravated in persons with existing skin lesions.

Breathing of vapor, dust or sprays (mists) may aggravate asthma and inflammatory or fibrotic pulmonary disease.

EMERGENCY AND FIRST AID PROCEDURES:

Remove the patient from immediate source of exposure and assure that the individual is breathing. Use artificial respiration if necessary, to assure continued breathing. GET MEDICAL ATTENTION.

Swallowing:

If patient is conscious and alert, give 2-3 glasses of water or milk to drink. If available, give one tablespoon of Syrup of Ipecac to induce vomiting.

Alternatively, induce vomiting by touching back of throat with finger. Do not make an unconscious person vomit. GET MEDICAL ATTENTION vomit. GET MEDICAL ATTENTION.

Skin:

Immediately wash skin with plenty of soap and water, if available, while removing contaminated clothing and shoes. Wash clothing separately before reuse.

Inhalation:

Remove victim to fresh air. If not breathing, give artificial respiration. Administer oxygen if necessary. GET MEDICAL ATTENTION.

Eyes:

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. GET MEDICAL ATTENTION, PREFERABLY AN OPHTHALMOLOGIST.

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IV. HEALTH HAZARD DATA (continued)

NOTES TO PHYSICIAN:

No specific antidote is available.

All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

This product contains a phenoxy herbicide. Myotoxic effects may include muscle fibrillations, myotonia, and muscular weakness. Ingestion of massive doses may result in persistent fall of blood pressure. Myoglobin and hemoglobin may be found in urine. Elevations in lactate dehydrogenase (LDH), SGOT, SGPT and aldolase indicate the extent of muscle damage. It has been suggested that overexposure in humans may affect both the central and peripheral nervous systems. The acute effects on the central nervous system resemble those produced by alcohol or sedative drugs. In isolated cases, peripheral neuropathy and reduced nerve conduct velocities have been reported although these observations may be related to other factors.

Gas-liquid chromatography for detecting and measuring chlorophenoxy compounds in blood and urine may be useful in confirming and assessing the magnitude of chlorophenoxy absorption.

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V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT Degrees C (F): Greater than 200 F

R

FLAMMABLE LIMITS IN AIR (% by volume):

Lower: None

Upper: None

AUTOIGNITION TEMPERATURE Degrees C (F): None

EXTINGUISHING MEDIA: Use carbon dioxide or dry chemical for small fires involving this product. Use water spray or foam (alcohol, polymer or ordinary) for large fires.

R

SPECIAL FIRE FIGHTING PROCEDURES: Wear protective clothing and use self-contained breathing apparatus. Dike area to prevent runoff and contamination of water sources.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Thermal decomposition products may be hazardous. These may include hydrogen chloride and nitrogen oxides.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Avoid excessive heat.

MATERIALS TO AVOID: Acids and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrogen chloride and nitrogen oxides may be produced upon decomposition.

HAZARDOUS POLYMERIZATION:

Will not occur.

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## VII. SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Dike large spills using absorbent or impervious materials such as sand or clay. Recover and contain as much free liquid as possible. Recover remaining spilled material as appropriate (eg. using high efficiency vacuum cleaner, flushing to industrial process sewer system, etc.). Collect and contain contaminated absorbent and dike material for disposal.

Absorb small spills on sand or vermiculite. Place contaminated material in appropriate container for disposal.

If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal.

Do not flush material to public sewer systems or any waterways.

Wear appropriate protective clothing and equipment (see below) during cleanup activities.

Ensure adequate decontamination of tools and equipment following cleanup.

WASTE DISPOSAL METHOD: Dispose of in an approved landfill or incinerator following all applicable federal, state, and local regulations.

NOTE: 2,4-D salts are a RCRA hazardous waste (U240) when disposed. Spills are subject to CERCLA (Superfund) reporting requirements:

Reportable Quantity (RQ): 100 lbs.

## VIII. SPECIAL PROTECTION INFORMATION

### PROTECTIVE EQUIPMENT SHOULD BE USED DURING THE FOLLOWING PROCEDURES:

- Manufacture or formulation of this product
- Repair and maintenance of contaminated equipment
- Clean-up of leaks and spills

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respirator for pesticide mist. Use positive pressure self-contained breathing apparatus for emergency conditions.

VENTILATION:

Local exhaust ventilation.

PROTECTIVE GLOVES:

Chemical-resistant gloves, e.g. PVC or buty

EYE PROTECTION:

Face shield, goggles, eye bath.

OTHER PROTECTIVE EQUIPMENT: Full-body protective clothing, safety shower.

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### IX. SPECIAL PRECAUTIONS

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Do not get in eyes, on skin or on clothing.  
Do not ingest. Avoid exposure by inhalation.  
Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.  
Do not contaminate water, food or feed by storage or disposal.

### X. REGULATORY STATUS

EPA Registration No.:	264-2
RCRA Hazardous Waste:	2,4-D salts (U240)
SARA Title III	
Section 302 Extremely Hazardous Substance List:	Not listed
Section 313 Toxic Chemicals:	Not listed
Reportable Quantity (RQ), under U.S. EPA CERCLA:	RQ = 100 Lb
State Right-to-Know Laws:	
	2,4-D Salts
California:	Not listed
Connecticut:	Survey
Florida:	Not listed
Illinois:	Chem Safety
Louisiana:	RTK;Spill RQ=100lb
Massachusetts:	Not listed
New Jersey:	Spill Tax;
New York:	Spill RQ=100lb (A); RQ=1 lb (L/W)
Pennsylvania:	Not listed
Rhode Island:	Not listed

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