

7-25-90

E
PESTICIDE ENVIRONMENTAL FACT ONE LINE SUMMARY

Page 1

Common Name: SIMAZINE

Date: 07/25/90

Chem. Name : 2-CHLORO-4,6-BIS(ETHYLAMINO)-s-TRIAZINE

Shaugh. # : 80807

CAS Number: 122-34-9

Type Pest. : Herbicide

Formulation: WP 80%; WATER DISP. GARN.; LIQUIFIEDS; GRANULES

Uses : CONTROL OF MOST ANNUAL GRASSES AND BROADLEAF WEEDS IN CORN,
: ESTABLISHED ALFALFA, ESTABLISHED BERMUDA GRASS, CHERRIES,
: PEACHES, CITRUS, CANEBERRIES, CRANBERRIES, GRAPES, APPLES

Empir. Form: C₇H₁₂ClN₅

VP (Torr): 6.1E-9

Mol. Weight: 201.66

Log Kow : 2.51

Solub.(ppm): 3.5 @ 20°C

Henry's : 3.2E-10

Hydrolysis (161-1)

pH 5:[*] STABLE

pH 7:[*] STABLE

pH 9:[*] STABLE

pH :[]

pH :[]

pH :[]

Photolysis (161-2, -3, -4)

Air :[]

Soil :[#] 168 HRS IN ARTIF SUNLIGHT

Water:[#] STABLE, WITH 88% REMAINING

: [] AFTER 30 DAYS UNDER MERCURY

: [] VAPOR LAMP IN 1% ACETONE,

: [] T_{1/2} = 12-24 HOURS.

MOBILITY STUDIES (163-1)

Soil Partition (Kd)

	Sd	Si	Cl	%OM	Kads	Kdes	Rf Factors
1.[]							1.[#] MODERATELY TO VERY MOBILE
2.[*]	25	33	42	4.8	4.31	9.34	2.[] IN 4 SOILS; SOILS ON LEFT
3.[*]	96	2	2	0.9	.65	2.25	3.[] RETAINED 58, 13, 11, AND 4%
4.[*]	63	20	17	1.9	1.27	6.20	4.[] IN TOP 2 CM OF COLUMN WASHED
5.[*]	44	47	9	0.8	.48	.78	5.[] WITH 20" WATER.
6.[]							6.[#] .96 IN SdLm; .31 IN SiLm

METABOLISM STUDIES (162-1,2,3,4)

Aerobic Soil (162-1)

	SOIL	APPL	% FC	T1/2
1.[#]				
2.[]	SdLm	2 MG/KG	98.3	36 DAYS
3.[]	SdLm	8 MG/KG	56.9	234 DAYS
4.[]	(BOTH AT 15 C; AT 25 C AND 75%			
5.[]	FC, T1/2 EXPECTED = 60 DAYS)			
6.[#]	AT APPL OF 4 LB AIA TO LmSd,			
7.[]	T1/2 = 16.3 WEEKS			

Anaerobic Soil (162-2)

1.[]
2.[]
3.[]
4.[]
5.[]
6.[]
7.[]

Aerobic Aquatic (162-4)

1.[]
2.[]
3.[]
4.[]

Anaerobic Aquatic (162-3)

1.[]
2.[]
3.[]
4.[]

[*] - Acceptable Study. [#] = Supplemental Study

1/4

ENVIRONMENTAL FATE & GROUND WATER BRANCH
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

Page 2

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VOLATILITY STUDIES (163-2,3)

- ☐ Laboratory:
- ☐ Field:

DISSIPATION STUDIES (164-1,2,3,5)

Terrestrial Field (164-1)

- 1.[#] PHYTOTOXIC RESIDUES EQUIV, TO SIMAZINE AT 0.6 LB/ACRE
- 2.[] REMAINED IN THE SURFACE FOOT OF A FURROW-IRRIGATED SiLm
- 3.[] SOIL FOR A YEAR AFTER THE LAST OF 6 ANNUAL APPL. OF 1 LB/A.
- 4.[]
- 5.[]
- 6.[]

Aquatic (164-2)

- 1.[#] SIMAZINE RESIDUES APPEARED TO PERSIST FOR 3 YRS IN THE SOIL
- 2.[] ON SIDES AND BOTTOMS OF IRRIGATION DITCHES TREATED AT 22.4
- 3.[] KG/HA.
- 4.[#] DISSIPATION IN 7 LAKES RECEIVING APPL OF .25 OR 50 PPM,
- 5.[] T1/2'S RANGED FROM 60 TO 700 DAYS.
- 6.[]

Forestry (164-3)

- 1.[]
- 2.[]

Other (164-5)

- 1.[]
- 2.[]

ACCUMULATION STUDIES (165-1,2,3,4,5)

Confined Rotational Crops (165-1)

- 1.[]
- 2.[]

Field Rotational Crops (165-2)

- 1.[]
- 2.[]

Irrigated Crops (165-3)

- 1.[]
- 2.[]

Fish (165-4)

- 1.[#] RAINBOW TROUT BCF FOR SIMAZINE = .9 - 2.3 X; BCF FOR 2
- 2.[] DEGRADATES RANGED FROM 0.5 TO 8.5 X.

Non-Target Organisms (165-5)

- 1.[#] GREEN SUNFISH DO NOT BIOACCUMULATE SIMAZINE. SAME FOR
- 2.[] FOR BLUEGILL, CATFISH, AND BASS.

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Page 3

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GROUND WATER STUDIES (158.75)

- 1.[#] SIMAZINE FOUND AT .5-3.5 PPB IN 5 OF 217 WELLS SAMPLED IN
- 2.[] CALIF., AND AT 0.1 PPB IN ONE OF 28 WELLS SAMPLED IN MARY-
- 3.[] LAND. IN PENNA. THE RANGE WAS FROM .2 TO 3.40 PPB.

DEGRADATION PRODUCTS

1. SEE CHART IN FOLDER FOR IDENTIFICATION OF CODE NAMES:
2. % RADIOACTIVITY IN AGED SOIL SAMPLES TREATED WITH SIMAZINE
3. AT 10 KG/HA (SEE STUDY #7 FOR DETAILS):
4. COMPOUND LOAMY SAND SILT LOAM
5. SIMAZINE 63.4 55.2
6. G-28279 3.7 3.9
7. G-28273 1.1 0.7
8. G-30414 ND 11.0
9. GS-17792 ND 1.7
- 10.

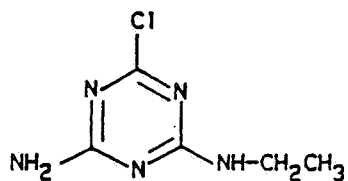
COMMENTS					
SOIL	COEFF.	SIMAZINE	G-28273	G-28279	G-30414
1	Kads	4.31	1.56	2.73	483
2	"	.65	.16	.16	8.48
3	"	1.27	.65	.51	27.40
4	"	.48	.36	.27	42.40
1	Kdes	9.34	7.79	12.36	423
2	"	2.25	(too limited to tell)		25.5
3	"	6.20	8.06	15.28	318
4	"	.78	6.87	6.98	125

(SOIL COMPOSITIONS, AND SIMAZINE ADS. AND DES., SHOWN ON PAGE 2)

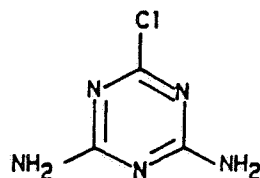
References: EPA REVIEWS
Writer : J. HANNAN

[*] - Acceptable Study. [#] = Supplemental Study

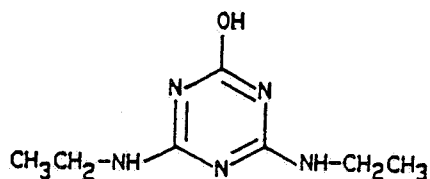
3

G-28279

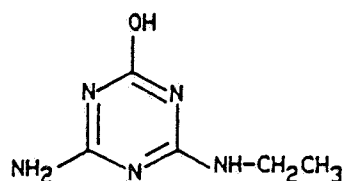
2-chloro-4-ethylamino-6-amino-1,3,5-triazine

G-28273

2-chloro-4,6-bis(amino)-1,3,5-triazine

G-30414

2-hydroxy-4,6-bis(ethylamino)-1,3,5-triazine

GS-17792

2-hydroxy-4-ethylamino-6-amino-1,3,5-triazine

Figure 1. Structures of simazine degradates.