

 ENVIRONMENTAL FATE & GROUND WATER B.N.

 PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

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Common Name: **ATRAZINE** Date: 03/15/90
 Chem. Name : 2-CHLORO-4-(ETHYLAMINO)-6-(ISOPROPYLAMINO)-s-TRIAZINE
 :
 Shaugh. # : 80803 CAS Number: 1912-24-9
 Type Pest. : Herbicide
 Formulation: G;P/T;WP;DF;EC;FC;SC/L
 Uses : TERRESTRIAL FOOD, TERRESTRIAL NON-FOOD, FORESTRY
 :
 :

Empir. Form: C₈H₁₄ClN₅ VP (Torr): 3.0E-7
 Mol. Weight: 215.68 Log Kow : 2.68
 Solub.(ppm): 33 PPM @ 20°C Henry's : 2.58E-9

Hydrolysis (161-1)	Photolysis (161-2, -3, -4)
pH 5:[*] STABLE	Air :[]
pH 7:[*] STABLE	Soil :[#] 64-88 HRS ARTIFIC. LIGHT
pH 9:[*] STABLE	Water:[*] 1 DAY, pH6.8, 15 C
pH :[] pH 5-10: 42 - >1000 DAYS	: []
pH :[]	: []
pH :[]	: []

MOBILITY STUDIES (163-1)

Soil Partition (Kd)	Rf Factors
1.[] Sd Si Cl %OM pH Kads Kdes	1.[] SOIL ATRAZ G-28279 G-28273
2.[*] 25 33 42 4.8 5.9 2.46 9.12	2.[#] SAND 1.0 .98 1.0
3.[*] 96 2 2 0.9 6.5 0.20 1.51	3.[#] SdLm .57 .16 .72
4.[*] 63 20 17 1.9 7.5 0.79 7.27	4.[#] SiLm .67 .18 .39
5.[*] 44 47 9 0.8 6.7 0.73 4.76	5.[#] SiClLm .51 ? .43
6.[]	6.[]

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

Aerobic Soil (162-1)	Anaerobic Soil (162-2)
1.[#] 140 DAYS, CALIFORNIA LOAM	1.[#] 159 DAYS IN SANDY LOAM
2.[*] 21 DAYS SiLm, 9% OM, pH 5.5	2.[]
3.[#] PERCENT VS TIME IN TENN. SOIL	3.[]
4.[] DAYS; 25 100 180	4.[]
5.[] CO2 .7 9.3 12.1	5.[]
6.[] EXTRACT. 72.6 42.5 28.8	6.[]
7.[] ATR+METAB.50.3 9.9 5.4	7.[]

Aerobic Aquatic (162-4)	Anaerobic Aquatic (162-3)
1.[]	1.[*] 608 DAYS FOR COMBINED WATER/
2.[]	2.[] SEDIMENT (330 DAYS IN SEDIMENT
3.[]	3.[] AND 578 DAYS IN WATER ALONE).
4.[]	4.[]

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

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VOLATILITY STUDIES (163-2,3)

- ☐ Laboratory:
☐ Field:

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

Terrestrial Field (164-1)

- 1.[#] IN THE 0-6" DEPTH, ATRAZINE DECREASED WITH TIME BUT AT
2.[] GREATER DEPTHS IT GRADUALLY INCREASED.
3.[]
4.[]
5.[]
6.[]

Aquatic (164-2)

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

Forestry (164-3)

- 1.[#] Leaf Foliage 13d Leaf Litter 66d
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.[*] Max BCF 7.7x (edible), 12x (inedible), 15x (whole fish)
2.[*] Depuration 74% (edible), 76%(inedible) 78% (whole fish)

Non-Target Organisms (165-5)

- 1.[]
2.[]

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GROUND WATER STUDIES (158.75)

- 1.[] 14 OF 18 STATES TESTED POSITIVE; HIGH POTENTIAL FOR LEACHING
- 2.[] MAX WAS 550 PPB FROM WELL NEAR GREEN BAY. NON-POINT SOURCE
- 3.[] CONTAMINATION OF SOME WELLS.

DEGRADATION PRODUCTS

1. ADSORPTION AND DESORPTION VALUES OF PRINCIPAL DEGRADATES:
2. G-28273 G-28279 G-30033
3. SOIL %OM pH Kads Kdes Kads Kdes Kads Kdes
4. CLAY 4.8 5.9 1.56 7.80 2.73 12.36 1.10 8.14
5. SAND 0.9 6.5 0.16 ? 0.16 ? 0.06 ?
6. SANDY Lm 1.9 7.5 0.65 8.06 0.51 15.28 0.36 11.19
7. LOAM 0.8 6.7 0.36 6.87 0.27 6.98 0.21 3.92
- 8.
9. (Sd, Si. AND C1 PERCENTAGES FOR THE ABOVE SOILS ARE LISTED IN
10. MOBILITY STUDIES, 163-1)

COMMENTS

IT IS LIKELY THAT ATRAZINE IS MORE PERSISTENT IN GROUND WATER THAN
IN MOST SOILS UNDER TYPICAL CONDITIONS.

Koc VALUES FOR ATRAZINE IN CLAY = 87

SAND = 39

SANDY LOAM = 70

LOAM =155

References: EFGWB SRR Science Chapter;EPA REVIEWS
Writer : S.C.Ternes J. HANNAN

1. CHEMICAL:

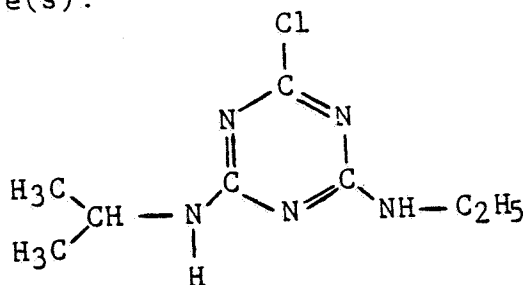
Chemical name: 2-chloro-4-ethylamino-6-isopropylamino-
s-triazine

Chemical Abstracts #: 1912-24-9

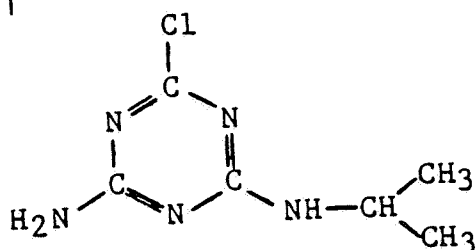
Common name: ATRAZINE

Trade name: AATREX® NINE-O®

Structure(s):

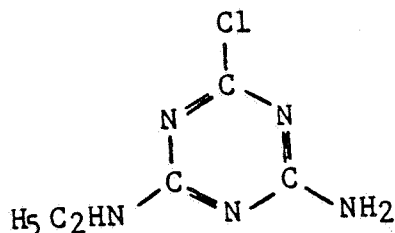


ATRAZINE



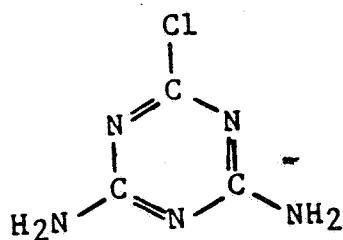
2-amino-4-chloro-6-isopropyl-
amino-s-triazine

G-30033



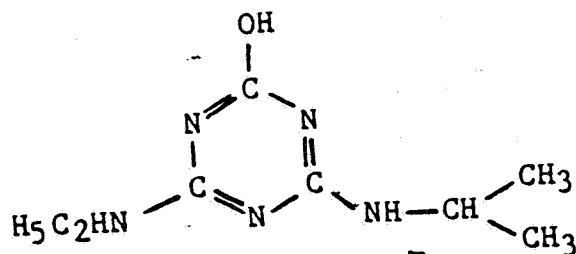
2-amino-4-chloro-6-ethylamino-
s-triazine

G-28279



2,4-diamino-6-chloro-triazine

G-28273



2-ethylamino-4-hydroxy-6-
isopropylamino-s-triazine

G-34048

DEGRADATES OF ATRAZINE