

karbutilate

Status: ISO 1750 (approved)
IUPAC: 3-(3,3-dimethylureido)phenyl *tert*-butylcarbamate
CAS: 3-[[[(dimethylamino)carbonyl]amino]phenyl (1,1-dimethylethyl)carbamate
Reg. No.: 4849-32-5
Formula: C₁₄H₂₁N₃O₃
Activity: herbicides ([carbamate herbicides](#))
Notes:

karbutilate (Tanzene, Tandex) Herbicide Profile 3/85
karbutilate

CHEMICAL NAME: m-(3,3-Dimethylureido)phenyl-*tert*-butyl-carbamate(56)

TRADE NAME(S): Tandex (discontinued by FMC Corp.), Tanzene (56).
Tandex (Ciba-Geigy) (58).

FORMULATION(S): Granules, 4%, 10%; wettable powder 80%. Tanzene 80W is a prepackaged mixture of simazine and karbutilate in a 2:1 ratio (56).

TYPE: Herbicide

BASIC PRODUCER(S): Ciba-Geigy Corp., Agricultural Div.
P.O. Box 18300
Greensboro, NC 27419

STATUS: General use

PRINCIPAL USES: Control of annual and perennial broadleaf weeds and grasses, brush and vines. Useful on railroad, utility and pipeline rights-of-way, drainage ditch banks, industrial plant sites and noncrop farm areas (56).

APPLICATION METHODS: Preemergence or postemergence applications (58).

I. EFFICACY

To be developed.

II. PHYSICAL PROPERTIES

MOLECULAR FORMULA: C₁₄ H₂₁ N₃ O₃ (62)

MOLECULAR WEIGHT: 279.3 (62)

PHYSICAL STATE: White crystalline solid (pure compound) (58).

ODOR: Nearly odorless (pure compound) (11d).

MELTING POINT: 176-176.5 (pure compound); 160 C minimum (technical product) (11d).

VAPOR PRESSURE: 6.0 nPa at 20 C (pure compound) (62).

SOLUBILITY: 325 mg/l water at 20 C (pure compound) (62).

III. HEALTH HAZARD INFORMATION

OSHA STANDARD: None established

NIOSH RECOMMENDED LIMIT: None established

ACGIH RECOMMENDED LIMIT: None established

TOXICOLOGY

A. ACUTE TOXICITY

DERMAL: The acute dermal LD₅₀ of the herbicide to albino rats is greater than 15,400 mg/kg of body weight(58). Nonirritant to skin of rabbits (62).

ORAL: The acute oral LD₅₀ of the active ingredient to albino rats is 3,000 mg/kg of body weight (58). LD₅₀ (80% wettable powder) = 28,200 mg/kg (male rat); 18,800 mg/kg (female rat) (11d).

INHALATION: LC₅₀ = >3.7 mg/liter (rat) (11d).

EYES: Slight irritant to eyes (62).

B. SUBACUTE AND CHRONIC TOXICITY:

In 90-day feeding trials NEL was: for rats 1000 mg/kg diet (70)

mg/kg daily); for dogs 15 mg/kg daily (62).

IV. ENVIRONMENTAL CONSIDERATIONS

LC50 is: for rainbow trout >135 mg/l; for bluegill >75 mg/l (62).

General toxicity to wildlife and fish: nontoxic (58).

Once karbutilate is moved into the soil by moisture, and fixed, lateral movement is minimal. Lateral movement must not be confused with physical wash. Most herbicides are subject to physical washing by excessive rainfall before they become incorporated into the soil. Microbial activity is a factor in the degradation of karbutilate in soil (11d).

The 8-day oral results from karbutilate technical are as follows:

Bobwhite Quail - LC50 >10,000 ppm

Mallard Duck - LC50 >4,640 ppm (11d).

V. EMERGENCY AND FIRST AID PROCEDURES

The chemical information provided below has been condensed from original source documents, primarily from "Recognition and Management of Pesticide Poisonings", 3rd ed. by Donald P. Morgan, which have been footnoted. This information has been provided in this form for your convenience and general guidance only. In specific cases, further consultation and reference may be required and is recommended. This information is not intended as a substitute for a more exhaustive review of the literature nor for the judgement of a physician or other trained professional.

If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital, or the nearest Poison Control Center.

SYMPTOMS OF POISONING: No human intoxication known (58).

VI. FIRE AND EXPLOSION INFORMATION

Non-flammable (58).

VII. COMPATIBILITY

Generally compatible. Noncorrosive (58).

VIII. PROTECTIVE MEASURES

STORAGE AND HANDLING: Stable under storage. May be harmful if swallowed. Avoid breathing dust or contact with skin or eyes. Do not apply, or drain or flush equipment on or near desirable trees or other plants, or on areas to which their roots may extend. Do not contaminate domestic or irrigation waters (58). Tandex and Tanzene herbicides are non-volatile and once the spray has been deposited, no danger from vaporization exists (56).

IX. PROCEDURES FOR SPILLS AND LEAKS

IN CASE OF EMERGENCY, CALL, DAY OR NIGHT
(800) 424-9300
PESTICIDE TEAM SAFETY NETWORK/CHEMTREC

X. LITERATURE CITED

Product manual: Tandex herbicide.
Middleport, NY.

56. Farm Chemicals Handbook, 70th ed. 1984. R. T. Meister, G. L. Berg, C. Sine, S. Meister, and J. Poplyk, eds. Meister Publishing Co., Willoughby, OH.
58. Weed Science Society of America, Herbicide Handbook Committee. 1983. Herbicide handbook of the weed science society of America, 5th ed. Weed Science Society of America, Champaign, IL. 515 pp.
62. The Pesticide Manual: A World Compendium, 7th ed. 1983. C.R. Worthing, ed. The British Crop Protection Council, Croydon, England. 695 pp.

3/21/85

For more information relative to pesticides and 5123 Comstock Hall
their use, please contact the PMEP staff at: Cornell University
Ithaca, New York 14853-0901
(607)-255-1866

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