

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

AgrEvo USA Company
Specialty Products
Little Falls Centre One
2711 Centerville Road
Wilmington, DE 19808

EMERGENCY TELEPHONE NUMBER

In Case of Medical Emergencies or Health and Safety Inquiries, or in Case of Fire, Leaking, or Damaged Containers, Information May Be Obtained by Calling:

1-800-228-5635, EXT. 202 (24 Hours)

General Product Information Inquiries: (302) 892-3000 (Days)

PRODUCT NAME: FICAM W

PRODUCT CODE: F21601

CHEMICAL NAME: 2,2-dimethyl-1,3-benzodioxol-4-yl methyl carbamate (active ingredient)

CHEMICAL FAMILY: Carbamate

CHEMICAL FORMULA: Mixture (active ingredient: $C_{11}H_{13}NO_4$)

EPA REGISTRY NUMBER: 45639-1

MSDS IDENTIFICATION CODE/NUMBER: F21601

SYNONYMS: CR 4944 (FICAM 76 W)

CANADIAN REG. NO.: 14378 P.C.P. ACT

END-USE PRODUCT DESCRIPTION

FICAM W is a Pesticide for use by Pest Control Professionals for control of Indoor and Perimeter Household Insect Pests.

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME:	EXPOSURE LIMITS:	CONCENTRATION PERCENT BY WEIGHT:
Bendiocarb CAS NUMBER: 22781-23-3	OSHA or ACGIH Limit: Not established; World Health Organization recommended limit: 0.2 mg/m ³	76
Inert Ingredients CAS NUMBER: Trade Secret		24
Alkyl naphthalene-sulfonic acid (Polymer Na. Salt) CAS NUMBER: 9084-06-4	ACGIH: TWA is 2 mg/m ³ (Respirable dust)	< 3
Amorphous silica (hydrated) CAS NUMBER: 7631-86-9	OSHA-PEL: 6 mg/m ³ ACGIH-TLV: 6 mg/m ³	< 9

INERT INGREDIENTS (24.0%): only the regulated ingredients are listed above.
For additional information, refer to Section 15 (Regulatory Information).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING. HARMFUL OR FATAL IF SWALLOWED. MAY BE ABSORBED THROUGH THE SKIN. Causes symptoms associated with cholinesterase inhibition. Avoid contact with the eyes, skin and clothing. Avoid breathing or working in spray mist or dust. The product is a white odorless powder.

POTENTIAL HEALTH EFFECTS**PRIMARY ROUTE(S) OF ENTRY**

Dust inhalation, skin and eye contact.

EYES

Not likely to cause eye irritation. May cause temporary and reversible miosis (constriction of the pupil of the eye).

SKIN

A slight skin irritant. May be absorbed through the skin. Not a skin sensitizer.

INGESTION

Harmful or fatal if swallowed (see Signs & Symptoms below). However, such ingestion hazards are considered unlikely to the end users of this product (the consumer). When a consumer product-package is applied by the Pest Control Operator in accordance with the product label, the bendiocarb concentrations used are very low (0.25 % to 0.5% in water).

INHALATION

Excessive dust or mist inhalation can cause symptoms associated with cholinesterase inhibition (see Signs & Symptoms below). However, such inhalation hazards are considered unlikely to the end-users of this product (the consumer). When a consumer product-package is applied/used according to the product label, the bendiocarb concentrations used are very low (0.25% - to 0.5% in water).

CHRONIC (CANCER INFORMATION)

Bendiocarb technical is not listed as carcinogenic by NTP, IARC, or OSHA.

SIGNS AND SYMPTOMS

May be fatal if swallowed. May be poisonous if inhaled. Overexposure to bendiocarb produces symptoms associated with cholinesterase inhibition. The threshold dose for symptoms of cholinesterase inhibition in humans was determined to be 0.15-0.2 mg/kg and the no-effect-level is 0.10 mg/kg. Symptoms of cholinesterase inhibition are: a sense of "tightness" in chest, sweating, headache, nausea, dizziness, constricted pupils, reversible vision impairment, salivation, vomiting, abdominal cramps, diarrhea, incontinence, muscular incoordination and twitching.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE

May possibly aggravate pre-existing respiratory conditions.

NOTE: For detailed toxicological information, please refer to Section 11.

4. FIRST AID MEASURES

EYES

Rinse thoroughly with clean water.

SKIN

Wash with soap and warm water.

INGESTION

Drink 1 or 2 glasses of water and induce vomiting by touching back of victim's throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention.

INHALATION

Keep patient strictly at rest and transfer to a hospital immediately to get medical attention.

4. FIRST AID MEASURES - Cont.'d

NOTE TO PHYSICIAN

Contains anticholinesterase carbamate insecticide. In cases of overexposure, atropine sulfate - 2 mg, (equivalent to 1/30 grain adult dose) should be given and repeated as necessary until fully atropinized.

Use of morphine is contraindicated. Control convulsions with 10-20 mg diazepam intravenously. Miosis due to direct eye contact will reverse spontaneously without specific treatment.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable

FIRE AND EXPLOSION HAZARDS

When heated to the point of decomposition (above 140°C or 280°F), bendiocarb gives off a toxic fume which is rapidly eliminated by fire or water. Dispersion of fine dust in the air may form an explosion mixture.

EXTINGUISHING MEDIA

Dry chemical, foam, carbon dioxide, water.

FIRE FIGHTING INSTRUCTIONS

Remove product from area of fire at first opportunity. Wear positive pressure self-contained breathing apparatus. Use water to cool fire-exposed containers and personnel.

6. ACCIDENTAL RELEASE MEASURES

GENERAL AND DISPOSAL: Use proper protective equipment to minimize exposure (see Section 8). Take all necessary action to prevent and to remedy the adverse effect of the spill. Notify the appropriate authorities immediately. Ensure that the disposal is in compliance with federal requirements and state/local regulations.

LAND SPILL OR LEAK: KEEP UNNECESSARY PEOPLE AWAY AND ISOLATE HAZARD AREA.

DO NOT BREATHE DUST. USE PROPER PROTECTIVE EQUIPMENT (see Section 8). Take up with sand or other non-combustible absorbent materials. Carefully sweep up; AVOID THE FORMATION OF A DUST CLOUD. Place material in a suitable and dry container and SEAL for disposal. Wash contaminated areas with water and detergent, but keep out of sewers or watercourses. Inform proper authorities if contamination occurs.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS

WARNING. HARMFUL OR FATAL IF SWALLOWED. MAY BE ABSORBED THROUGH THE SKIN. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. IF CONTACT OCCURS, WASH SKIN AND CLOTHING IMMEDIATELY WITH SOAP AND WARM WATER, AND EYES WITH CLEAN WATER.

DO NOT rub eyes or mouth with hands. If you feel sick in any way, STOP WORK and get help right away. (See Section 4 - FIRST AID MEASURES).

AVOID BREATHING AND WORKING IN SPRAY MIST OR DUST. When applying in outdoor sites, keep all unprotected persons, children, and animals away from treated area or where there is danger of drift.

WASH HAND AND EXPOSED SKIN before eating, drinking or smoking and after spraying or handling. Wash all contaminated clothing thoroughly before reuse.

DO NOT apply to humans, their clothing or bedding. DO NOT permit children or pets to contact treated surfaces until spray has dried completely.

With proper spraying, FICAM W does not result in a visible deposit. However, if unevenly applied, or sprayed to run-off, a visible deposit may occur on some dark surfaces. DO NOT spray where electrical short circuits might result.

7. HANDLING AND STORAGE

DO NOT use on or contaminate fruit, vegetables or other feed or food crops. DO NOT store near food or feed products. DO NOT contaminate these or food preparation surfaces, dishes, kitchen utensils and food containers with either concentrate or the spray.

STORAGE PRECAUTIONS

Store in a dry place. FICAM W is stable in normal storage temperatures. (should avoid extreme temperatures; see Section 5-Hazardous Decomposition Products).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Control airborne concentrations below the exposure guideline (see Section 2 for OSHA/ACGIH exposure limits). Use with adequate ventilation. Local exhaust ventilation may be necessary, especially when used in a confined area.

FOR MANUFACTURING AND PACKAGING

EMPLOYEES: The personal protective equipment (PPE) in accordance with OSHA standards are recommended immediately below.

FOR PEST CONTROL OPERATORS AND

RESIDENTS: Please refer to product label for the recommended PPE. For further information, residents can refer to the Subtitle, "Note to Residents."

EYE/FACE PROTECTION

Safety glasses; faceshield

SKIN PROTECTION

Impervious (neoprene, butyl rubber) gloves

RESPIRATORY PROTECTION

ENSURE GOOD VENTILATION IN HANDLING AREA. USE A SUITABLE DUST RESPIRATOR. Use of a self-contained breathing apparatus or airline hood or mask is recommended to give complete face protection.

OTHER/GENERAL PROTECTION

Synthetic (PVC) aprons, boots, overalls are recommended. Wash clothes thoroughly after each use or at the end of every shift. In addition, users of contact lenses must wear the protective safety glasses for proper protection during the handling & use of the product.

NOTE TO RESIDENTS: The PPE listed above are for manufacturing and packaging employees and for pest control operators. The concentration of Ficam W as applied in the residential environment is 0.25 to 0.5%. Please refer to Section 7, Handling and Storage for applicable precautionary statements.

Although general guidance has been provided, the degree of protection required in a particular situation depends on factors such as concentration and duration. More detailed advice on protective devices is available from AgrEvo.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

White powder

ODOR

Odorless

BASIC PHYSICAL PROPERTIES

PHYSICAL STATE: Solid

BOILING POINT: Not applicable F

MELTING POINT: about 264 F 128-130 °C

VAPOR PRESSURE: 3.5 X 10⁻⁵ mm Hg**

VAPOR DENSITY (AIR=1): not volatile

PACKING DENSITY: Approx 36 lbs/cu ft

SOLUBILITY (H₂O): 0.024% (240 ppm) (for a.i.)*

****VAPOR PRESSURE:** the data above was for bendiocarb technical at 25°C

*** SOLUBILITY:** the data above was for bendiocarb technical.

10. STABILITY AND REACTIVITY

STABILITY: Stable (normal storage temperatures)

CONDITIONS TO AVOID (STABILITY)

Extreme heat or moisture

HAZARDOUS DECOMPOSITION PRODUCTS

When heated to the point of decomposition (above 140°C or 280°F), bendiocarb gives off a toxic fume which is rapidly eliminated by fire or water.

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

SKIN EFFECTS

DERMAL LD50 (rat): 1,000-2,000 mg/kg (low toxicity)

ACUTE ORAL EFFECTS

ORAL LD50 (rat): 141-250 mg/kg (toxic)

ACUTE INHALATION EFFECTS

INHALATION LC50 (rat-4hrs): data from an inhalation study in rats exposed to FICAM W for 4 hours is not available. However, a relevant inhalation LC50 data is available for the concentrated bendiocarb technical (97.9%); the LC50 (rat-4hrs): is 0.55 mg/liter of air. This indicates that, for FICAM W (76% technical), the LC50 (rat-4hrs) is likely to be: ≥ 0.55 mg/liter (highly toxic).

For DOT purposes (49 CFR 173.132), the 1-hr LC50 is calculated to be: ≥ 2.2 mg/liter of air. The studies reported below were carried out with Bendiocarb Technical ($\geq 96\%$), the active ingredient.

SUBCHRONIC (TARGET ORGAN EFFECTS)

Results from 90-day animal studies suggest no target organ effects under the recommended conditions of normal handling and use.

CHRONIC (CANCER INFORMATION)

In two year feeding studies with bendiocarb in animals, no clinical signs or mortalities related to treatment were observed in rats and dogs at dose levels up to 200 ppm and 500 ppm, respectively. The effects observed at the highest dose were reduced blood cholinesterase level in rats and lower blood and brain cholinesterase levels in dogs. Similarly, bendiocarb administered chronically to mice at dietary dose levels up to 1250 ppm showed only an effect in increased testes weight at the highest dose.

CARCINOGENICITY:

NTP: No

IARC: No

OSHA: No

TERATOGENICITY (BIRTH DEFECTS)

No evidence of teratogenic effects of bendiocarb was observed in offspring of rats and rabbits fed during gestation dose levels up to 4 mg/kg/day and 5 mg/kg/day, respectively.

REPRODUCTIVE EFFECTS

Bendiocarb showed no adverse effects on fertility or on reproduction in rats fed dietary levels up to 800 ppm prior to mating and during gestation.

NEUROTOXICITY

No evidence of neurological lesions or irreversible or delayed neurotoxic effects were observed when bendiocarb was administered to hens by single doses up to 757 mg/kg.

MUTAGENICITY (GENETIC EFFECTS)

Bendiocarb is not mutagenic or genotoxic when tested in Ames gene mutation assay and in four other mutagenesis assays of bacteria, yeast, and rodents. In an *in vitro* analysis of metaphase chromosomes from human lymphocyte cell cultures, a positive result was observed only in the presence of metabolic activation. However, an *in vivo* analysis of metaphase chromosomes of bone marrow cells did not show any evidence of chromosomal damages, both in the absence or presence of metabolic activation. It is concluded from the results of these mutagenesis studies that bendiocarb does not damage chromosomes in humans and animals under conditions of normal handling and use.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

This product is toxic to wildlife. DO NOT apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

TOXICITY TO BENEFICIAL MICROORGANISMS

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. DO NOT apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

ENVIRONMENTAL FATE INFORMATION

The active ingredient, bendiocarb technical, breaks down readily in the natural environment, especially under alkaline conditions and at the concentrations applied in treatments (up to 0.5% dilutions in water).

13. DISPOSAL CONSIDERATIONS

PROPER DISPOSAL: Handling and disposal of pesticide wastes, including spills or rinsates, must be in accordance with Federal requirements under the Resource Conservation and Recovery Act (RCRA). Also ensure that the waste disposal is in compliance with state and local regulations which may be more restrictive or otherwise different from the RCRA requirements. Do not contaminate water, food or feed. See product label (STORAGE AND DISPOSAL) for container disposal instructions.

RCRA INFORMATION

None of the product ingredients are listed as hazardous waste chemicals under RCRA.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:

Carbamate pesticide, solid, toxic, 6.1, UN2757, PG III, Volume in net pounds (USA) or kilos(international) Limited Quantity.

DOT SHIPPING LABEL: Keep Away From Foodstuffs

FREIGHT CLASSIFICATION: Insecticides, Other Than Agricultural, Dry, N.O.I

ADDITIONAL SHIPPING PAPER DESCRIPTION

NOTE: When FICAM W is shipped in 48(10 X 0.4 oz) packages, then FICAM W is exempt from DOT labelling requirements. This exception can be found in 49 CFR 173.4, Exceptions for small quantities.

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATORY INFORMATION

TSCA: Bendiocarb technical, the active ingredient, is a registered pesticide under FIFRA regulations and is therefore exempt from TSCA. All other inert ingredients are as Listed chemicals under TSCA.

SARA TITLE III, Section 302 (EHS) Ingredients: Not listed

SARA TITLE III, Section 304 (CERCLA & EHS) Ingredients (RQ): Not listed

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Acute Health Hazard - "Yes"
Chronic Health Hazard - "No"
Fire Hazard - "No"
Sudden Release of Pressure Hazard - "No"
Reactivity Hazard - "No"

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	2781-23-3
INGREDIENT NAME	Bendiocarb
PERCENT BY WEIGHT	76

This information must be included on all MSDSs that are copied and distributed for this material.

U.S. STATE REGULATORY INFORMATION**State Right-to-know (RTK) Hazardous**

Substance List: Bendiocarb (New Jersey RTK):
Substance No.=0191, DOT No.=2757.

**CANADIAN REGULATORY INFORMATION
CANADA WHMIS CONTROLLED-PRODUCT**

REGULATIONS: FICAM W is a registered pesticide under US-FIFRA regulations and is therefore exempted from WHMIS classification. It is identified as "PEST" for Canadian inventory reporting purpose. For hazard communication purposes, the toxicity data indicate an equivalent WHMIS classification as: Inhalation hazard (Class D; Division 1/Subdivision A) Class D; Division 1/Subdivision A)

16. OTHER INFORMATION

HMIS HAZARD RATING

- HEALTH: 3 High
- FIRE: 1 Slight
- REACTIVITY: 0 Negligible
- PPE: F*

NFPA HAZARD RATING

- HEALTH: 3 High
- FIRE: 1 Slight
- REACTIVITY: 0 Negligible
- Spec. Haz.: Non

MSDS IDENTIFICATION CODE/NUMBER:

F21601

PREPARED BY: Dept. of Regulatory Affairs

PHONE: (302)892-3000

***HMIS PPE:** F (minimum)

MSDS REVISION INDICATOR: Revised
Section 14 to delete "n.o.s." reference from
Proper Shipping Name.

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WARRANTIES**

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IMPLIED WARRANTY***