



# MATERIAL SAFETY DATA SHEET

## MSDS Y-123      REVISION 0

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

#### COMBAT INSECT CONTROL SYSTEMS

C/O The Dial Corporation  
19001 North Scottsdale Road  
Scottsdale, Arizona 85255-9672

Medical Emergencies: 1-866-338-8517  
ChemTrec: 1-800-424-9300 (24 Hours Daily)  
Other Information: 1-888-468-6673

PRODUCT: COMBAT®      DATE OF ISSUE: April 29, 2009  
TRADE NAMES/SYNONYMS: COMBAT LIQUID ANT BAIT (CLAB)  
CHEMICAL FAMILY: Inorganic Borate Insecticide  
EPA REG. NUMBER: 73766-2-64240

### SECTION 2: HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

**CAUTION:** This product is a yellow liquid with a with a sweet odor containing Disodium Octaborate Tetrahydrate (*DOT*). This product is not flammable, combustible or explosive and presents no unusual hazard to humans if involved in a fire. This product presents little or no hazard to humans and has low acute oral and dermal toxicities. Refer to product label for additional precautions during product use. Keep out of reach of children.

This product is labeled in accordance with guidelines set forth in the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The use pattern and exposure in the workplace are generally not consistent with those experienced by consumers. The requirements of the Occupational Safety and Health Administration applicable to this Material Safety Data Sheet may differ from the requirements of the FIFRA and as a result, this MSDS may contain additional health hazard information not pertinent to consumer use and not found on the product label.

#### REGULATORY STATUS

This material is considered to be hazardous under OSHA's Hazard Communication Standard (29 CFR 1900.1200). This MSDS should be retained and available for employees and other users of this product.

#### POTENTIAL HEALTH EFFECTS

**Routes of Exposure:** Ingestion is the most significant route of exposure in occupational and other settings. Dermal exposure is not a concern because this product is not absorbed through intact skin.

**Ingestion:** Products containing *DOT* are not intended for ingestion. *DOT* has a relatively low acute toxicity. Small amounts (e.g. a teaspoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms. Being strongly diluted in this formulation, no effects are expected.

**Skin Contact:** This product causes slight irritation to intact skin.

**Inhalation:** May cause slight respiratory tract irritation.

**Eye Contact:** This product is minimally irritating to the eyes in normal use.

**Cancer:** *DOT* is not a known carcinogen.

**Reproductive/developmental:** Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction.

**Target organs:** No target organ has been identified in humans. High dose animal ingestion studies indicate the testes are the target organs in male animals.

**Signs and symptoms of exposure:** Symptoms of accidental over-exposure to *DOT* might include nausea, vomiting and diarrhea, with delayed effects of skin redness and peeling. These symptoms have been associated with the accidental overexposure to the chemically related substance boric acid. Refer to Section 11 for details on toxicological data.

#### POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12: Ecological Information.

### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Based on our hazard evaluation, the following chemical substance(s) in this product have been identified as hazardous.

<u>INGREDIENT</u>	<u>CAS NUMBER</u>	<u>PERCENT (w/w)</u>
Disodium octaborate tetrahydrate	12280-03-4	1.0%

### SECTION 4: FIRST AID MEASURES

Call poison control center or doctor immediately for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

**Inhalation:** No specific treatment is necessary since this product is not likely to be hazardous by inhalation. Remove person to fresh air.

**Eye Contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**Skin Contact:** Wash with soap and water.

**Ingestion:** Swallowing less than sixteen teaspoons of COMBAT LIQUID ANT BAIT will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

**Note to Physicians:** Observation only is required for adult ingestion of less than 6 grams of DOT (600 grams CLAB). For ingestion in excess of 6 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. DOT analysis of urine or blood is only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment. (For further information: Litovitz T.L., Norman, S.A., Veltri, J.C., Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. 1986; 4:427-458)

### SECTION 5: FIRE FIGHTING MEASURES

#### FLAMMABLE PROPERTIES

OSHA FLAMMABILITY CLASSIFICATION: Non-Flammable liquid

FLASH POINT: Not Applicable

UPPER FLAMMABILITY LIMIT: Not applicable

LOWER FLAMMABILITY LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not applicable

FLAME PROJECTION: Not applicable

FIRE AND EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

HAZARDOUS DECOMPOSITION PRODUCTS: None

#### EXTINGUISHING MEDIA

Any fire extinguishing material may be used on nearby fires.

#### PROTECTION OF FIREFIGHTERS

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit. Move container from fire area if you can do it without risk. Do not scatter spilled material with high-pressure water streams. Dike fire-control water for later disposal. Use agents suitable for type of surrounding fire. Avoid breathing hazardous vapors, keep upwind.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**General:** DOT is a water-soluble white powder that may, at high concentrations, cause damage to trees or vegetation by root absorption. (Refer to Ecological information, Section 12, for specific information.)

Personal protective equipment is not needed to cleanup land spills.

### METHODS FOR CONTAINMENT AND CLEAN UP:

**SMALL SPILLS:** Contain and absorb with sand or other absorbent material and place into containers for later disposal. Wash site of spillage thoroughly with water. **LARGE SPILLS:** Dike far ahead of spill to prevent further movement. Recover by pumping or by using a suitable absorbent material and place into containers for later disposal.

**Spillage into water:** Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level. (Refer to Sections 12, 13 and 15 for additional information.)

Disodium octaborate tetrahydrate is a non-hazardous waste when spilled or disposed of, as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261). (Refer to Regulatory information, Section 15, for additional references.)

## SECTION 7: HANDLING AND STORAGE

**Storage:** Store product in original container in a cool place out of reach of children. Do not allow product to freeze.

**Storage Temperature:** Room Temperature (72° F)

**Shelf Life:** It is advised product be used within 2 years.

**Storage Pressure:** Atmospheric

**Storage Conditions:** Dry, indoor storage.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### WORKER EXPOSURE LIMITS:

Disodium octaborate tetrahydrate (DOT) is treated by OSHA, Cal OSHA and ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust". The following exposure limits exist for the active ingredient listed below.

The PEL-TLV is the Permissible Exposure Limit – Time Weighted Average from U.S. Borax Inc.

INGREDIENT	CAS NUMBER	EXPOSURE LIMIT
Disodium octaborate tetrahydrate	12280-03-4	ACGIH/TLV: 10 mg/m <sup>3</sup> Cal OSHA/PEL: 10 mg/m <sup>3</sup> OSHA/PEL (total dust): 15 mg/m <sup>3</sup> OSHA/PEL (respirable dust): 5 mg/m <sup>3</sup>

**ENGINEERING CONTROLS:** Use local exhaust ventilation to keep air borne concentrations of DOT dust below permissible exposure levels.

**Personal protection:** Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators should be used. Eye goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	A yellow, slightly viscous liquid with a sweet odor.	PHYSICAL STATE:	Slightly viscous liquid
ODOR/ODOR THRESHOLD:	Not available	VAPOR DENSITY:	Not available
pH (@ 25°C):	7.9	VAPOR PRESSURE:	Not available
BOILING POINT:	Not available	FLASH POINT:	Not applicable.
MELTING/FREEZING POINT:	Not available	SOLUBILITY IN WATER:	100%
FLAMMABLE PROPERTIES:	See Section 5.	EVAPORATION RATE:	Not available
DENSITY/SPECIFIC GRAVITY: 1.14. g/ml			

OCTANOL/WATER PARTITION COEFFICIENT ( $K_{ow}$ ): Not available

VISCOSITY: @20° C: 2.93 cps, @40° C: 1.692 cps

## SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal ambient temperature (70°F, 21°C) and pressure (1 atm).

CONDITIONS TO AVOID: Do not allow product to freeze.

INCOMPATIBLE MATERIALS: Potassium permanganate. Avoid strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas which could create an explosive hazard.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous reactions do not occur under normal temperatures and pressures.

## SECTION 11: TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION SUMMARY: The use of this product by consumers is safe under normal and reasonable foreseen use.

COMPONENT ANALYSIS: The following toxicity information is available for this product.

<u>Product</u>	<u>LD50</u>	<u>TOXICITY / IRRITATION RATING</u>
ACUTE ORAL TOXICITY	> 5,000 mg/kg (female rat)	Non-hazardous
ACUTE DERMAL TOXICITY	> 5,000 mg/kg (rabbit)	Non-hazardous
ACUTE INHALATION TOXICITY	2.06 mg/l	Slightly toxic
EYE IRRITATION		Slightly irritating
SKIN IRRITATION		Non-corrosive

SENSITIZATION: This product is not considered a skin sensitizer.

**Reproductive/developmental toxicity:** Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed.

**Carcinogenicity/mutagenicity:** No evidence of carcinogenicity in mice. No mutagenic activity was observed for boric acid in a battery of short-term mutagenicity assays.

**Human data:** Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

## SECTION 12: ECOLOGICAL INFORMATION

The environmental toxicity of this product has not been evaluated. The information provided below is for disodium octaborate tetrahydrate the active ingredient.

### Ecotoxicity data

**General:** Boron (B) is the element in disodium octaborate tetrahydrate (*DOT*) which is used by convention to report borate product ecological effects. It occurs naturally in seawater at an average concentration of 5 mg B/L and generally occurs in freshwater at concentrations up to 1 mg B/L. In dilute aqueous solutions the predominant boron species present is undissociated boric acid. To convert disodium octaborate tetrahydrate into the equivalent boron (B) content, multiply by 0.2096.

**Phytotoxicity:** Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in high quantities. Care should be taken to minimize the amount of *DOT* released to the environment.

### Algal toxicity:

Green algae, *Scenedesmus subspicatus*

96-hr EC10 = 24 mg B/L†

**Invertebrate toxicity<sup>8</sup>:**

Daphnids, *Daphnia magna straus*  
 24-hr EC50 = 242 mg B/L†  
 Test substance: † sodium tetraborate

**Fish toxicity:**

Seawater:  
 Dab, *Limanda limanda*  
 96-hr LC50 = 74 mg B/L†  
 Freshwater<sup>10</sup>:  
 Rainbow trout, *S. gairdneri* (embryo-larval stage)  
 24-day LC50 = 88 mg B/L†  
 32-day LC50 = 54 mg B/L†  
 Goldfish, *Carassius auratus* (embryo-larval stage)  
 7-day LC50 = 65 mg B/L†  
 3-day LC50 = 71 mg B/L†

**Environmental fate data**

**Persistence/degradation:** Boron is naturally occurring and ubiquitous in the environment. DOT decomposes in the environment to natural borate.

**Octanol/water partition coefficient:** No value. In aqueous solution disodium octaborate tetrahydrate is converted substantially into undissociated boric acid.

**Soil mobility:** DOT is soluble in water and is leachable through normal soil.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Disposal Guidance: No special disposal treatment is required. Refer to state and local regulations for applicable site-specific requirements. Such product should be re-used for an appropriate application.

WASTE NUMBER AND DESCRIPTION: Not Applicable, not regulated.

DISPOSAL CONSIDERATIONS: RCRA (40CFR 261): This product is not listed under any sections of the Federal Resource Conservation and Recovery Act (RCRA).

**SECTION 14: TRANSPORT INFORMATION****GROUND TRANSPORT**

DOT Hazard Class: Not regulated  
 DOT Proper Shipping Name: Insecticide, non-toxic, solid – Not Restricted.  
 UN/NA Number: Not applicable  
 Packing Group: Not applicable  
 Shipping Label Information: Not applicable

**AIR TRANSPORT (ICAO/IATA)**

ICAO/IATA Hazard Class: Not regulated  
 ICAO/IATA Proper Shipping Name: Not applicable

**MARINE TRANSPORT (IMDG/IMO)**

IMDG/IMO Hazard Class: Not regulated  
 IMDG/IMO Proper Shipping Name: Not applicable

**SECTION 15: REGULATORY INFORMATION****UNITED STATES:**

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

The Occupational Safety and Health Administration requires Material Safety Data Sheets to provide any hazards that may be associated with the product, and make this information available in the workplace. Since the use pattern and exposure in the workplace are generally not consistent with those experienced by consumers, this MSDS may contain additional health hazard information not pertinent to consumer use.

EPA - SARA TITLE III SECTION 313: Not applicable - Consumer product.

EPA CERCLA/SARA TITLE III SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

This product contains no CERCLA/SARA Title III materials.

**TSCA:** This product is a registered pesticide and is exempted from listing on the U.S. Toxic Substances Control Act (TSCA) chemical substance inventory.

**FIFRA:** EPA Registration No. 73766-2-64240  
EPA Est. No. 81184-FL-001

**Chemical inventory listing:** Disodium octaborate tetrahydrate, 12280-03-4, appears on several chemical inventory lists (including the EPA TSCA inventory, Canadian DSL, European EINECS, Japanese MITI, Australian and Korean lists) under the CAS No. representing the anhydrous form of this inorganic salt.

**U.S. EPA TSCA Inventory 12008-41-2**

**RCRA:** Disodium octaborate tetrahydrate is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act (RCRA) or regulations (40 CFR 261 *et seq.*).

**Superfund:** CERCLA/SARA. Disodium octaborate tetrahydrate is not listed under CERCLA or its 1986 amendments, SARA, including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65, Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355, or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302

**Safe Drinking Water Act (SDWA):** Disodium octaborate tetrahydrate is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 *et seq.* Consult state and local regulations for possible water quality advisories regarding boron compounds.

**Clean Water Act (CWA) (Federal Water Pollution Control**

**Act):** 33 USC 1251 *et seq.*

- a) Disodium octaborate tetrahydrate is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314.
- b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129.
- c) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116.

**IARC:** The International Agency for Research on Cancer (IARC) (a unit of the World Health Organization) does not list or categorize disodium octaborate tetrahydrate as a carcinogen.

**NTP Biennial Report on Carcinogens:** Disodium octaborate tetrahydrate is not listed.

**OSHA carcinogen:** Disodium octaborate tetrahydrate is not listed

## STATE REGULATIONS

**CALIFORNIA PROPOSITION 65:** This product is not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

## CANADA:

This product is not registered for sale or distribution in Canada.

## SECTION 16: OTHER INFORMATION

### Product label text hazard information:

Refer to EPA-approved product specimen label for additional product hazard and precautionary information.

**DISCLAIMER:** The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, The Dial Corporation makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. Accordingly, The Dial Corporation will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representations, or warranties, either expressed or implied of merchantability, fitness for a particular purpose or of any other nature is made hereunder with respect to the information set forth herein or to the product to which the information refers.

NFPA RATINGS (Scale 0-4, where 4=high degree of hazard): HEALTH=0 FLAMMABILITY=0 REACTIVITY=0  
HMIS RATINGS (Scale 0-4, where 4=severe hazard): HEALTH=0 FLAMMABILITY=0 REACTIVITY=0

MSDS CREATION DATE: 4/29/09

SUPERSEDES: -----

REVISION DATE: -----

REVISION: -----