



TRADEASIA INTERNATIONAL PTE LIMITED

(CO. REG. NO. 200412014Z)

133 CECIL STREET 12-03 KECK SENG TOWER,
SINGAPORE 069535 REPUBLIC OF SINGAPORE

PHONE : +65 62276365

FAX : +65 62256286

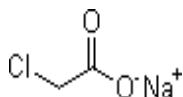
EMAIL : contact@chemtradeasia.com

Disodium Octaborate Tetrahydrate Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

PRODUCT NAME : Disodium Octaborate Tetrahydrate
CAS RN : 12280-03-4
SYNONYMS : Etidot 67
SYSTEMATIC NAME : Disodium Octaborate Tetrahydrate - DOT
MOLECULAR FORMULA : Na₂B₈O₁₃.4H₂O



1.2. Chemical / information on ingredients

Ingredients

- This product contains greater than 99 percent (%) of Disodium Octaborate Tetrahydrate – DOT CAS No. 12280-03-4

1.3. Details of the supplier of the safety data sheet

Tradeasia International Pte Ltd

HEAD OFFICE: TRADEASIA INTERNATIONAL PTE LTD

Office: +65 6227 6365 / Fax: +65 6225 6286

133 Cecil Street #12-03 Keck Seng Tower Singapore 069535

Republic of Singapore

1.4. Emergency telephone number

Emergency number : Office: +65 6227 6365 / Fax: +65 6225 6286

SECTION 2: Hazard(s) identification

2.1. Emergency Overview

AduBor is a white odourless, powdered substance that is not flammable, combustible or explosive and has low acute oral and dermal toxicity

2.2. Potential Ecological Effects

Large amounts of AduBor can be harmful to plants and other species. Therefore, releases to the environment should be minimised

2.3. Potential Health Effects

Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because DOT is poorly absorbed through intact skin.

2.4. Inhalation

Occasional mild irritation effects to the nose and throat may occur from inhalation of AduBor dust at levels greater than 10 mg/m³

2.5. Eye Contact

Causes serious eye irritation

2.6. Skin Contact

Does not cause irritation to intact skin

2.7. Ingestion

May be harmful if swallowed. Products containing AduBor are not intended for ingestion. AduBor has a 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.

2.8. Cancer

AduBor is not a known carcinogen.

2.9. Reproductive / Developmental

Suspected of damaging fertility or the unborn child. Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and development effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction.

2.10. 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.

2.11. Signs and symptoms of exposure

Symptoms of accidental over-exposure to AduBor 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).

SECTION 3: First Aid Measure

3.1. Inhalation

If symptoms such as nose or throat irritation are observed, remove person to fresh air.

3.2. Eye Contact

Use eye wash fountain or fresh water to cleanse the eye. If irritation persists for more than 30 minutes, seek medical attention.

3.3. Skin Contact

No treatment necessary because non-irritating

3.4. Ingestion

Swallowing small quantities (one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

3.5. Note to Physicians

Observation only is required for adult ingestion in the range 8 grams of AduBor. For ingestion of larger amounts, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patient only. Haemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analysis urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment. (Refer to Section 11 for details).

SECTION 4: Fire-fighting measures

4.1. General Hazard

None, because AduBor is not flammable, combustible or explosive. The product is itself a flame retardant.

4.2. Extinguishing Media

Any fire extinguishing media may be used on nearby fires

4.3. Flammability Classification

Non flammable solid

SECTION 5 : Accidental release measures

5.1. General

AduBor is water – soluble white powder that may cause damage to trees or vegetation by root absorption. (See section 12)

5.2. Land Spill

Vacuum, shovel or sweep up borax decahydrate and place in containers for disposal in accordance with applicable local regulation. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is not needed to clean up land spills.

5.3. 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. (See sections 12, 13 and 15).

SECTION 6: HANDLING AND STORAGE

6.1. General

No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimize caking of the product, bags should be handled on a first –in, first –out basis. Good housekeeping procedures should be followed to minimize dust generation and accumulation.

6.2. Storage Temperature

Ambient

6.3. Storage Pressure

Atmospheric

6.4. Special Sensitivity

Moisture (Caking)

SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

7.1. Engineering Controls

Use local exhaust ventilation to keep airborne concentration of AduBor dust below permissible exposure levels.

7.2. 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 exposure, but may be warranted if environment is excessively dusty.

SECTION 8 : PHYSICAL AND CHEMICAL PROPERTIES

8.1. Appearance

White, odourless, crystalline solid

8.2. Specific Gravity

1.51

8.3. Vapor Pressure

Negligible a 20 ° C

8.4. Solubility in Water

4.7 % a 20°C; 27.5 % a 100°C

8.5. Melting Point

> 300°C (heated in closed space)

SECTION 9: STABILITY AND REACTIVITY

9.1. General

AduBor is a stable product, but when heated it loses water, eventually forming anhydrous borax ($\text{Na}_2\text{B}_4\text{O}_7$)

9.2. Incompatible material and condition to avoid

Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

9.3. Hazardous decomposition

None

SECTION 10: TOXICOLOGICAL INFORMATION

10.1. Ingestion

Low acute oral toxicity; LD50 in rats is 3.500 a 4.100 mg/kg of body weight

10.2. Skin / Dermal

Low acute dermal toxicity; LD50 in rabbits is greater than 2000 mg/kg body weight. AduBor is poorly absorbed through intact skin.

10.3. Inhalation

Low acute inhalation toxicity; LC50 in rats is greater than 2.0 mg/L (or g/m³)

10.4. Skin Irritation

Non irritant

10.5. Eye Irritation

Draize test in rabbits produced eye irritation effects. There for AduBor is considered to be a human eye irritant

10.6. Sensitization

AduBor is not a skin sensitizer.

10.7. Reproductive/developmental toxicity

Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemical 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.

10.8. Carcinogenicit / mutagenicity

No evidence of carcinogenicity in mice: No mutagenic activity was observed for borax decahydrate in a battery of short term mutagenicity assays

10.9. Human Data

Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposure 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

12.1. General

Boron (B) is the element in sodium tetraborate pentahydrate which is used by convention to report borate product ecological effects. To convert AduBor into the equivalent boron (B) content, multiply by 0.1484, Boron occurs naturally in sea water freshwater and soils. Sea water concentrations are about 5 mg B/L.

12.2. Ecotoxicity to Aquatic Organisms

Based on data from algae, invertebrates, and fish, this product is not classified as hazardous to the environment.

12.3. Persistence/degradation

Is an inorganic substance and does not biodegrade. Under environmental conditions, borates decompose to undissociated boric acid.

12.4. Bio Accumulation

Base on laboratory and field data, borates do not bio accumulate or bio magnify through the food chain.

12.5. Mobility

Borates are water soluble and not strongly adsorb to soil or sediment.

SECTION 13: Disposal considerations

13.1. Disposal Consideration

Small quantities of AduBor can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of products are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

SECTION 14: Ecological Information

14.1. International Transportation

AduBor has not UN Number, and is not regulated under international rail, road, water or air transport regulations.

SECTION 15 : Regulatory Information

Chemical inventory listing: (1303-96-4) Disodium tetraborate decahydrate appears on several chemical inventory list (including the EPA TSCA inventory, Canadian DSL, European EINECS, Japanese MITI, Australian and Korean list) under the CAS

N° representing this organic salt,

U.S. EPA TSCA Inventory 1330-43-4

EINECS 215-540-4

Canadian DSL 1303-43-4

SECTION 15 :Other Information

References

Litovitz TL, Norman SA, Veltri JC, Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg.Med. (1986),4, 427-458.

Weir RJ, Fisher RS, Toxicol. Appl. Pharmacol., (1972), 23, 351-364.

National Toxicology Program (NTP)-Technical Report Series N° TR324, NIH Publication N° 88-2580 (1987), PB88 213475/XAB

Fail et al., Fund. Appl. Toxicol. (1991) 17,225-239

Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277

Guhl W, SOFW-Journal (1992) 181 (18/92), 1159-1168

Schoberl P, Marl and Huber L (1988) Tenside Surfactants Detergents 25, 99-107.

Hugman SJ and Mance G (1983) Water Research Centre Report 616-M

Birge WJ, Black JA, EPA-560/-76-008 (April 1977) PB.267085