

Material Safety Data Sheet

1. Product and Company Identification

Supplier:

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Product information

CAS #: 3896-11-5
MF: C17H18N3OCL
EC NO: 223-445-4
NAME: 2-(2'-Hydroxy-3'-tert-butyl-5'-methylphenyl)-5-chlorobenzotriazole
Synonym name: UV Absorber 326,Tinuvin 326,UV Absorber 326,Ultraviolet Light Absorber 326

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Signal Word:	NOTICE!
Physical Form:	Solid
Color:	Light yellow
Odor:	None
Health:	This product has no known adverse effect on human health.
Physical Hazards:	Refer to MSDS Section 7 for Dust Explosion information.
Environmental:	Low toxicity to aquatic organisms.

OSHA Hazardous Substance: regulations.

This material is classified as not hazardous under OSHA
Ingestion, Skin, Inhalation, Eyes.

Primary Route(s) of Entry:

3. COMPOSITION/INFORMATION ON INGREDIENTS

NON-HAZARDOUS COMPONENTS

Components	CAS Number	Weight %
Phenol, 2-(5-chloro-2H-benzotriazol-2-yl)-6-(1,1-dimethyl)-4-methyl-	3896-11-5	98 - 100

4. FIRST AID MEASURES

Eyes:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin:	Wash off immediately with soap and plenty of water. Get medical

attention if irritation occurs.

Inhalation: Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and get immediate medical attention.

Ingestion: Do not induce vomiting. If vomiting occurs naturally, have casualty lean forward to reduce the risk of aspiration. Seek medical attention immediately.

Notes to physician: None known.

5. FIRE FIGHTING MEASURES

Fire Fighting Measures: Standard procedure for chemical fires.

Suitable Extinguishing Media: Carbon dioxide, dry chemical, foam or water mist.

Fire Fighting Equipment: Wear self-contained breathing apparatus and protective suit.

Unusual hazards: The product can form an explosive dust/air mixture. For further information, see Section 7 Explosion Hazards.

Hazardous Combustion Products: Burning may produce toxic combustion products.

6. ACCIDENTAL RELEASE MEASURES

Cleanup Instructions: Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Wear suitable protective equipment. Should not be released into the environment.

7. HANDLING AND STORAGE

Handling: As with all industrial chemicals, use good industrial practices when handling. Avoid eye, skin, and clothing contact. Do not inhale. Do not taste or swallow. Use only with adequate ventilation.

Storage: Keep containers tightly closed in a cool, well-ventilated place.

Explosion Hazards:

- Combustible powder.
- Avoid creating dusty conditions.
- Grounding is required when emptying into a conductive container.
- When flammable solvents are present, the container must be inerted or the system otherwise designed to prevent or contain an explosion. Seek expert advice. In addition, for products packaged in fused-lined (coated) fiber drums, fiber drums with conductive liners, steel drums, steel pails, and Type "C" FIBC (bulk bags), or other conductive the following instructions also apply:
- Always ground this package before emptying.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:

There are no OSHA or ACGIH exposure guidelines available for component(s) in this product.

Personal Protective Equipment

Eye/Face Protection:	Wear safety glasses or goggles to protect against dust particles.
Skin Protection:	Wear chemical resistant gloves and protective clothing.
Respiratory Protection:	Use NIOSH approved respirator as needed to mitigate exposure.
Engineering Controls:	Work in well ventilated areas. Do not breathe dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Solid
Color:	Light yellow
Odor:	None
Boiling Point:	> 200°C (392°F)
Freezing/Melting Point:	137 - 141°C (279 - 286°F)
Solubility in water:	< 100 ppm @ 20 °C
Vapor	
Density:	Not applicable
Vapor Pressure:	~ 6 x 10 ⁽⁻⁹⁾ mmHg @ 20°C (68°F)
Density:	Not determined
Specific Gravity:	~ 1.32 (Water = 1)
pH:	Not determined
Percent Volatile:	< 0.3
VOC:	< 0.3 %
Partition Coefficient (Octanol/Water):	> 6 log Pow
Decomposition Temperature:	> 350°C (662 °F)
Ignition Temperature:	420°C (788°F) DIN 51794
Flammability Limits in Air:	
Flash point:	238°C (460°F)
Test Method (for Flash Point):	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable.
Conditions to Avoid:	Avoid static discharge.
Incompatibility:	Strong oxidizing agents, strong acids, strong bases.
Hazardous Decomposition Products:	No decomposition expected under normal storage conditions.
Possibility of Hazardous Reactions:	None expected.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	> LD50 5000 mg/kg (Rats)
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Acute Dermal Toxicity: > LD50 2000 mg/kg (Rats)

Acute Inhalation Toxicity: > 0.27 mg/L LC50 for a 4-hour exposure. There were no mortalities. Necropsy after 14 days showed slight lung hyperaemia.

Eye Irritation: (Rabbits) Not an irritant

Skin Irritation: (Rabbits) Not an irritant

(Rats) Topical administration of 0.4 ml of a 5% suspension six days per week for four weeks was not found to cause systemic toxicity.

Skin Sensitization: (Guinea pigs) Weak sensitizer in maximization test, with 5% sensitized.RIPT (Humans) Not an irritant or sensitizer in 59 humans treated with 0.3% in dimethylphthalate.

Carcinogenicity (IARC; NTP; OSHA; ACGIH):

None of the components in this product at concentrations greater than 0.1% are listed by IARC; NTP, OSHA or ACGIH as a carcinogen.

Carcinogenicity Studies: Lifetime Carcinogenicity Study (Mice): Mice were treated with 0, 5, 50 and 500 ppm in the feed for two years. The body weight gain and food and water intake was comparable to the control in all groups. No clinical symptoms and no signs of local and/or systemic toxicity related to the treatment were noted. No effects in eye and hearing tests and no clinical or systemic effects were observed. Hematology and blood chemistry showed no effects of the treatment. All organ weights were within the normal variations. No macro- and histopathological findings were related to the treatment and there was no effect on the spontaneous tumor profile when compared with the control. The NOEL was determined to be 500 ppm, equivalent to 59-62 mg/kg/day.

2-Year Study (Rats): Rats were treated with 0, 1,000, 3,000 and 10,000 ppm of test substance in the diet for two years. A slight reduction in the rate of body weight gain within the first 52 weeks were noted for males in the 10,000 ppm group, associated with a marginal decrease in food intake. No clinical signs were noted. No effects in eye and hearing tests and no clinical or systemic effects were observed. Hematology and blood chemistry showed a slight but significant reduction of the red cell parameters in both sexes and a marked reduction in 3 out of 10 males in week 78 receiving 10,000 ppm. All organ weights were within the normal variations and there was no evidence of any dose-related effects. No macro- and histopathological findings were related to the treatment. In particular there was no effect on the spontaneous tumor profile when compared with the control. The NOEL was determined to be 3,000 ppm, equivalent to 382-502 mg/kg/day.

Mutagenicity: Ames test: Non-mutagenic

Nucleus anomaly test (Chinese hamsters): Non-mutagenic

Chromosome studies in somatic cells (Chinese hamsters): Non-mutagenic

Dominant lethal study (Mice): No evidence of a dominant lethal effect in the offspring of treated male mice.

Reproductive Toxicity: (Rats) During a teratology study, rats received oral doses of 0, 300, 1,000 or 3,000 mg/kg/day on days 6-15 of gestation. No teratogenic or embryotoxic effects were noted in this study. (Mice) During a teratology study, mice received 0, 300, 1,000 or 3,000 mg/kg on days 6-15 of gestation. The young of the high-dose group had a delay of physiological growth manifested by a slightly increased number of incompletely ossified sternebrae. No teratogenic or embryotoxic effects were attributable to the test chemical; the NOEL was 1,000 mg/kg.

Teratogenicity: Not determined

Neurotoxicity: Not determined

Subacute Toxicity: Not determined

Subchronic Toxicity: During a 13-week feeding study in beagle dogs at dietary levels of 0, 200, 1,000, and 5,000 ppm, anemia was produced in the highest dose group; increased liver weights was seen in the higher dose-groups, but there was no histopathological correlate. A nominal no observable effect level (NOEL) of 1,000 ppm, equivalent to 27-30 mg/kg/day, was established.

Rats were fed 0, 400, 1,000, 2,500 and 10,000 ppm of the test substance for 90 days. No clinical symptoms and no behavioral effects were seen. Body weight gain, food and water consumption were similar in all groups. The hematology and blood chemistry data obtained at week 12 showed a slight, but significant, reduction of the hemoglobin content at the three highest doses. The packed cell volume of the male rats was significantly reduced at the two highest doses. Both effects are considered the result of high control values, rather than being compound related, since a dose- response is also not evident. The activity of alkaline phosphatase was slightly reduced in females of the highest dose group. The activity of the liver enzyme glucose-6-phosphatase was slightly increased in the two highest dose groups of either sex. Relative weights of liver and kidney were significantly increased in females at the highest feeding level. There were no macro- or histopathological findings which were regarded as treatment-related. The NOEL was set at 2,500 ppm.

Chronic toxicity: Not determined

Absorption / Distribution / Excretion / Metabolism: Not determined

Additional Information: Not determined

12. ECOLOGICAL INFORMATION

Toxicity to Fish: LC50: > 100 ppm 96 hour (Zebra fish)

Toxicity to Invertebrates: EC50: 100 ppm 24 hour (Daphnia magna)

Toxicity to Algae: EC50: > 100 ppm 72 hour (Green algae)

Toxicity to Sewage Bacteria: Inhibitory concentration on respiration of aerobic waste water bacteria: IC20, IC50, IC80 >100 ppm

Activated Sludge Respiration Inhibition Test:	Not determined
Biochemical Oxygen Demand (BOD):	Not determined
Chemical Oxygen Demand (COD):	Not determined
Total Oxygen Demand (TOD):	Not determined
Biodegradability:	Modified Sturm test: Not readily biodegradable, 2-10% in 28 days.
Bioaccumulation:	Not determined
Additional Environmental Data:	Not determined
Product Name:	Tinuvin 326

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with local, state, provincial and federal regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):

Not regulated for this mode of transport.

International Maritime Dangerous Goods (IMDG):

Not regulated for this mode of transport.

International Air Transportation Authority (IATA):

Not regulated for this mode of transport.

15. REGULATORY INFORMATION

Federal Regulations

OSHA Hazardous Substance: This material is classified as not hazardous under OSHA regulations

Clean Air Act - Hazardous Air Pollutants (HAP): This product does not contain any Hazardous Air Pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

Clean Air Act - Volatile Organic Compounds (VOC): This product does not contain any SOCMI Intermediate or Final Volatile Organic Compounds (VOC), as defined by the U.S. Clean Air Act Section 111 (40 CFR 60.489).

Clean Air Act - Ozone Depleting Substances (ODS): This product neither contains, nor was manufactured with, a Class I or Class II ozone depleting substance (ODS), as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A+B).

Clean Water Act - Priority Pollutants (PP): This product does not contain any priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261.21).

SARA Section 302 Extremely Hazardous Substances (EHS): This product does not contain any components regulated under Section 302 (40 CFR 355) as Extremely Hazardous Substances.

SARA Section 304 CERCLA Hazardous Substances: This product does not contain any components regulated under Section 304 (40 CFR 302) as hazardous chemicals for emergency release notification ("CERCLA" List).

SARA Section 311/312 Hazard Communication Standard (HCS): This product is not regulated under Section 311/312 HCS (40 CFR 370).

SARA Section 313 Toxic Chemical List (TCL): This product does not contain any component(s) listed on the Section 313 Toxic Chemical List.

TSCA Section 8(b) Inventory Status: All component(s) comprising this product are either exempt or listed on the TSCA inventory.

TSCA Section 5(e) Consent Orders: This product is not subject to a Section 5(e) Consent Order.

TSCA Significant New Use Rule (SNUR): This product is not subject to a Significant New Use Rule (SNUR).

TSCA Section 5(f): This product is not subject to a Section 5(f)/6(a) rule.

TSCA Section 12(b) Export Notification: This product does not contain any component(s) that are subject to a Section 12(b) Export Notification

State Regulations

California Proposition 65: This product does not contain any components currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-To-Know: This product does not contain any components currently on the Pennsylvania Right-To-Know list of hazardous chemicals.

International Regulations

Chemical Weapons Convention (CWC): This product does not contain any component(s) listed under the Chemical Weapons Convention Schedule of Chemicals.

16. OTHER INFORMATION

End Of MSDS