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## Material Safety Data Sheet

### **Di-tert-butyl hydroxy toluene/BHT**

#### **Section 1: Chemical Product and Company Identification**

Trade name BHT

**Synonyms** Butylated Hydroxy Toluene; 2,6-di-tert-butyl-4-methyl phenol; 2,6-di-tert-butyl-p-cresol

**CAS:** 128-37-0

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#### **Section 2: Composition and Information on Ingredients**

**Composition:**

<b>Name</b>	<b>CAS #</b>	<b>% by Weight</b>
BHT	128-37-0	100

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

#### **Section 3: Hazards Identification**

## EMERGENCY OVERVIEW

**Appearance** White Solid at room temperature. Colorless liquid when melted.

**Odor** Mild.

**Precautions** **CAUTION!** MAY CAUSE EYE, SKIN AND RESPIRATORY IRRITATION. Contact with hot product will cause thermal burns. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Material will burn in a fire.

Dust may form explosive mixture in air. Take measures to prevent the build up of electrostatic charge.

### Environmental

#### precautions

Do not flush into surface water or sanitary sewer system. Low aquatic toxicity. Product is slightly soluble in water. According to the results of tests of biodegradability this product is not readily biodegradable. BHT is considered to have a moderate to high bioaccumulation potential (230-2500 (fish, 56-day test)) in aquatic species.

## POTENTIAL HEALTH EFFECTS

**Skin** Slightly irritating.

**Eyes** Contact with eyes may cause irritation.

**Inhalation** May cause irritation of respiratory tract.

**Ingestion** Harmful if swallowed.

**Additional advice** Product dust may be irritating to eyes, skin and respiratory system.

(See Section 11 for Toxicological Information)

## Section 4: First Aid Measures

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

**Skin contact** Wash off with soap and plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

**Inhalation** Remove to fresh air. In the case of inhalation of aerosol/mist consult a physician if necessary.

**Ingestion** If accidentally swallowed obtain immediate medical attention. If conscious, drink plenty of water. Do not induce vomiting.

**Additional advice** There is no specific antidote. Treatment consists of support of respiratory and cardiovascular functions.

## Section 5: Fire and Explosion Data

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

**Skin contact** Wash off with soap and plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

**Inhalation** Remove to fresh air. In the case of inhalation of aerosol/mist consult a physician if necessary.

**Ingestion** If accidentally swallowed obtain immediate medical attention. If conscious, drink plenty of water. Do not induce vomiting.

**Additional advice** There is no specific antidote. Treatment consists of support of respiratory and cardiovascular functions.

## Section 6: Accidental Release Measures

### Steps to be taken in

#### case of spill or leak

Remove all sources of ignition. Use personal protective equipment. Prevent further leakage or spillage. Avoid dust formation. Sweep up and shovel into suitable containers for disposal.

Do not flush with water. Non-disposable equipment should be thoroughly decontaminated with soap and water. Do not flush into surface water or sanitary sewer system.

**Spill precautions** Do not contaminate any lakes, streams, ponds, groundwater or soil.

#### Reporting

#### Requirements

Composition and extent of any spill should be evaluated against local regulations and reported to the proper agencies, if necessary.

## Section 7: Handling and Storage

### Safe handling advice

BHT dust may form an explosive mixture in air.

Take measures to prevent dust build up and electrostatic charges (such as good housekeeping, dust collection at machinery, exhaust ventilation, proper grounding of equipment, humidification of use areas, and inert gas blanketing).

Risks of ignition followed by flame propagation or secondary explosions can be prevented by avoiding accumulation of dust on floors, ledges, and other working surfaces.

Avoid contact with skin and eyes.

Do not breathe vapors/dust.

Handle in accordance with good industrial hygiene and safety practice.

Keep containers tightly closed in a dry, cool and well-ventilated place.

## Section 8: Exposure Controls/Personal Protection

### ENGINEERING MEASURES

Provide adequate ventilation. Ensure proper grounding of equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### PERSONAL PROTECTIVE EQUIPMENT

**Eyes** When contact with liquid is possible, use a face shield and/or chemical splash goggles.

Otherwise use safety glasses with side shields or goggles.

**Skin** Solvent-resistant gloves. Long sleeved clothing. Non-disposable equipment should be thoroughly decontaminated with soap and water.

**Inhalation** Use an approved organic vapor/particulate air-purifying respirator to control dust or fumes

Exposure.

### EXPOSURE GUIDELINES

Components Exposure limit(s)

**BHT** OSHA PEL (5 mg/m<sup>3</sup>) OSHA regulates as Nuisance Dust (Nuisance Particulates).

ACGIH TLV (8-hour) (2 mg/m<sup>3</sup>) (inhalable aerosol and/or vapor)

NIOSH TWA (10-hour) (10 mg/m<sup>3</sup>)

PEL= Permissible Exposure Limits TWA= Time Weighted Average (8 hr.)

TLV= Threshold Limit Value STEL= Short Term Exposure Limit (15 min.)

EL= Excursion Limit WEEL= Workplace Environmental Exposure Level

## Section 9: Physical and Chemical Properties

### Appearance

Solid at room temperature. Colorless liquid when melted.

**Colour** White

### Odour

Mild.

**Form** crystals, pellets, molten

### Boiling point/range

265 °C 509 °F

**Vapour pressure** < 0.01 mm Hg @ 20 °C

**Vapor density** 7.6

**Solubility (water)** slightly soluble 0.4 - 1.14 mg/l

**Viscosity** 3.45 cSt @ 80 °C

1.54 cSt @ 120 °C

**Melting point/range** 69 - 70 °C 156 - 158 °F

**Density** 1.01 g/cm<sup>3</sup> @ 25 °C

**LogKow** 5.1

### *BHT Dust Explosion Risk Data*

#### Maximum Explosion

**Pressure [Pm(bar)]**

7-9

#### Maximum Rate of

**Pressure Rise**

**[dP/dt (bar/s)]**

800-1300

**Kst [bar.m/s]** 200-350

#### Minimum Ignition

**Energy [M.I.E. (mJ)]**

10-25

#### Minimum Explosion

**Concentration**

**[M.E.C. (g/m<sup>3</sup>)]**

### Section 10: Stability and Reactivity Data

**Conditions to avoid** Stable under normal conditions. Keep away from heat and sources of ignition.

#### **Hazardous**

#### **decomposition**

#### **products**

Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.

#### **Incompatibility with**

#### **other materials**

Incompatible with strong acids and oxidizing agents.

#### **Hazardous**

#### **polymerization**

### Section 11: Toxicological Information

#### **Additional Remarks**

**BHT** Low acute toxicity.

#### **Eyes**

**BHT** Slightly irritating.

#### **Skin**

**BHT** Irritating.

Acute dermal LD50 (rat): > 2,000 mg/kg

#### **Ingestion**

**BHT** Acute oral LD50 (rat): > 2,930 mg/kg

Repeated oral exposure of laboratory animals (rats and mice) at doses greater than 25 mg/kg/day resulted in growth depression and functional and histological changes to the lung, liver, kidneys, and thyroid.

**Reproductive Effects** The only effects on reproduction in rats and mice were lower numbers of litters of ten or more pups at birth at doses of 100 mg/kg/day and above. During pregnancy, BHT had maternal effects on mice above oral doses of 240 mg/kg/day.

#### **Carcinogenicity**

**BHT** This product contains no carcinogenic substances.

### Section 12: Ecological Information

**Aquatic toxicity** Low aquatic toxicity.

**BHT** LC0 (Brachydanio rerio): 96 hours  $\geq$  0.57 mg/l

EC0 (Daphnia magna): 48 hours  $\geq$  0.17 mg/l

NOEC (S. subspicatus (algae)): 72 hours 0.4 mg/l

NOEC (Daphnia magna): 21 d 0.07 mg/l

(reproductive effects)

**Biodegradation** Product is slightly soluble in water. According to the results of tests of biodegradability this product is not readily biodegradable.

BHT is considered to have a moderate to high bioaccumulation potential in aquatic species.

**Bioconcentration Factor (BCF)**

BHT 230 - 2,500 ((fish) 56 d)

Accumulation in aquatic organisms is expected.

**Section 13: Disposal Considerations**

**Disposal methods** Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

**Empty containers** Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed. Dispose of rinse water in accordance with local and national regulations.

**Section 14: Transport Information**

**DOT description** Not regulated in solid form; however, if shipped in molten form above 100 °C, use the following description: UN3257, Elevated temperature liquid, n.o.s., 9, PG III

**IATA description** not regulated

**IMDG Description** not regulated

**Section 15: Other Regulatory Information**

**OSHA classification**

Irritant

**TSCA Inventory Listing**

**Components CAS-No.**

2,6-Bis(1,1-dimethylethyl)-4-methylphenol 128-37-0

**SARA 302 Status**

**Components CAS-No. Weight %**

Contains no chemicals subject to SARA 302 reporting.

**SARA 311/312 Classification**

"Immediate (acute) health hazard"

**SARA 313 Chemical**

**Components CAS-No. Weight %**

Contains no chemicals subject to SARA 313 reporting.

**CERCLA Hazardous Substance**

**Components CERCLA RQ Weight %**

Contains no chemicals subject to CERCLA.

**INTERNATIONAL REGULATIONS**

**Workplace Hazardous Materials Information System (WHMIS) Classification**

Toxic Material Causing Other Toxic Effects

**Australian Inventory of Chemical Substances (AICS) Listing**

Listed on the AICS.

**Japanese Minister of International Trade and Industry (MITI) Inventory Listing**

Listed on MITI.

**Canadian Domestic Substance List (DSL) Inventory Listing**

Listed on the DSL.

**European Inventory of Existing Commercial Chemical Substances (EINECS) Listing**

Listed on EINECS.

**Korean Inventory List**

Listed on the ECL.

**China Inventory List**

Listed on the China inventory.

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

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