



Safety Data Sheet- BHT

Revision Date: 01-Apr-2015

Version 3

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name	BHT
Synonyms	Butylated Hydroxytoluene; 2,6-di-tert-butyl-4-methyl phenol; 2,6-di-tert-butyl-p-cresol;
Molecular Weight	220.34
Recommended use	Antioxidant. Preservative. Food additive.
Distributor	Chemistry Connection 253 Sturgis Road Conway, AR 72034

Emergency telephone

Call Center	Region	Number
NCEC	Europe, Israel, Africa, Americas	+44 (0) 2087 628 322
	Middle East, Arabic African Countries (where European languages are spoken)	+44 (0) 1235 239 670
	Middle East/Africa (where Arabic is spoken)	+44 (0) 1235 239 671
	Asia Pacific	+65 3158 1074
	China	+86 10 5100 3039
SCC	Australia	+61 2801 44558
	Southern Africa (Sasol Call Centre)	+27 17 610 4444
Chemtrec®	North America	+27 800 112 890
	World Wide	+1 800 424 9300 +1 703 527 3887

2. HAZARDS IDENTIFICATION

GHS - Classification

Serious eye damage/eye irritation	Category 2B
Specific target organ systemic toxicity (single exposure)	Category 3
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

GHS Label elements, including precautionary statements



Signal Word: WARNING

Hazard statements

- Causes eye irritation
- May cause respiratory irritation. May cause drowsiness or dizziness
- Very toxic to aquatic life with long lasting effects

Physical hazards

- May form combustible dust concentrations in air (during processing)

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear eye protection/ face protection

P264 - Wash face, hands and any exposed skin thoroughly after handling

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/ attention

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P271 - Use only outdoors or in a well-ventilated area

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P304 + P312 - IF INHALED: Call a POISON CENTER or doctor/ physician if you feel unwell

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P273 - Avoid release to the environment.

P391 - Collect spillage.

P501 - Dispose of contents/ container to an approved waste disposal plant.

Combustible dust clouds may be created where operations produce fine material (dust). Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA- 654)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	EC-No
Butylated Hydroxytoluene	128-37-0	>99	204-881-4

4. FIRST AID MEASURES

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, consult a specialist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Inhalation

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.

Ingestion Not an expected route of exposure. If swallowed: Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties

Combustible material: may burn but does not ignite readily.

Explosive properties

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges. See Section 9 for more information.

Suitable Extinguishing Media

Water spray; Foam; Dry chemical; Carbon dioxide (CO₂).

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards in a fire

As the product contains combustible organic ingredients, fire will produce dense black smoke containing hazardous products of combustion (see section 10). In case of incomplete combustion an increased formation of oxides of nitrogen (NO_x) is to be expected.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Further Information

Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate personnel to safe areas. Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Non-sparking tools should be used.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system. Keep out of waterways. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up

Use personal protective equipment. Take precautionary measures against static discharges. Avoid dust formation. Take up mechanically and collect in suitable container for disposal. Non-sparking tools should be used. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Advice on safe handling	Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Avoid contact with skin and eyes. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible products	Strong acids. Strong bases. Oxidizing agents. Reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure guidelines**

Chemical Name	ACGIH TLV	NIOSH REL	OSHA PEL	Ontario TWA	European Union
Butylated Hydroxytoluene	TWA: 2 mg/m ³ inhalable fraction and vapor	TWA: 10 mg/m ³	(vacated) TWA: 10 mg/m ³	TWA: 2 mg/m ³	

Chemical Name	China	Japan	Korea	Australia	Taiwan
Butylated Hydroxytoluene			TWA: 2 mg/m ³	10 mg/m ³	

Chemical Name	Mexico	Brazil	Argentina	Venezuela	India
Butylated Hydroxytoluene	Mexico: TWA 10 mg/m ³ Mexico: STEL 20 mg/m ³		TWA: 2 mg/m ³	TWA: 2 ppm	

Engineering measures	It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks. Ensure adequate ventilation, especially in confined areas. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
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Personal protective equipment

Eye/face protection	Safety glasses with side-shields. Molten form: Goggles; Face-shield.
Skin and body protection	Long sleeved clothing.
Hand protection	Impervious gloves.
Respiratory Protection	None under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

<u>Hygiene measures</u>	Handle in accordance with good industrial hygiene and safety practice.
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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State @20°C	Solid
appearance	White; crystalline; pellets
Odor	Mild
Odor Threshold	No information available
pH	No information available
Melting point/range	156-158 °F / 69-70 °C
Boiling point/boiling range	509 °F / 265 °C
Flash point	244 °F / 118 °C
Evaporation rate	No information available
Flammable properties	Combustible material: may burn but does not ignite readily
Flammability Limits in Air	
upper	Not applicable
lower	Not applicable
Vapor pressure	<.0.01 mmHg @ 20 °C
Vapor density	7.6
Water solubility	Practically insoluble; 0.4 - 1.14 mg/l
Partition coefficient:	5.1
Autoignition temperature	878 °F / 470 °C
Viscosity, dynamic	3.45 cSt @ 80 °C; 1.54 cSt @ 120 °C
Molecular Weight	220.34

Dust explosion properties

<i>Maximum explosion overpressure</i>	7-9 Pm (bar)
<i>Maximum Rate of Pressure Rise</i>	800-1300 [dP/dt (bar/s)]
<i>Dust deflagration index (Kst)</i>	200-350 [bar.m/s]
<i>Minimum ignition energy (MIE)</i>	10-25 (mJ)
<i>Lower explosion limit</i>	10-20 [M.E.C. (g/m ³)]

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to avoid	Heat (temperatures above flash point), sparks, ignition points, flames, static electricity.
Incompatible products	Strong acids, Strong bases, Oxidizing agents, Reducing agents.
Hazardous decomposition products	Possible formation of carbon oxides, nitrogen oxides, and hazardous organic compounds.
Hazardous reactions	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity	.
Oral	>6,000 mg/kg
Dermal	>2,000 mg/kg

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Butylated Hydroxytoluene	>6,000 mg/kg (Rat)	>2000 mg/kg (Rat)	

Chronic toxicity

Repeated dose toxicity 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

Carcinogenicity Contains no ingredient listed as a carcinogen.

Chemical Name	IARC
Butylated Hydroxytoluene	Group 3

IARC: (International Agency for Research on Cancer)

Group 3: Not classifiable as to its carcinogenicity to humans

Irritation Irritating to eyes. Inhalation of dust in high concentration may cause irritation of respiratory system.

Mutagenic effects None known.

Reproductive toxicity None expected in humans. 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.

Target Organ Effects Eyes, Lungs, Liver, Kidney, Thyroid.

Other adverse effects May cause nausea, vomiting, gastro-intestinal distress, and narcotic effects if ingested in large doses well above the acceptable daily intake (ADI) of 0.3 mg/kg bw/day

12. ECOLOGICAL INFORMATIONEcotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Butylated Hydroxytoluene	EC50 72 h: = 6 mg/L (<i>Pseudokirchneriella subcapitata</i>) EC50 72 h: > 0.42 mg/L (<i>Desmodesmus subspicatus</i>)	LC50 48 h: = 5 mg/L (<i>Oryzias latipes</i>)		EC50 48 h: = 0.48 mg/L (<i>Daphnia magna</i>) (immobilization)

Persistence and degradability

Not readily biodegradable.

Bioaccumulative potential

The product may be accumulated in organisms.

Bioconcentration factor (BCF)

230-2,500 [(fish) 56 days]

Chemical Name	log Pow
Butylated Hydroxytoluene	5.1

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

IMDG/IMO

Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S. (Butylated Hydroxytoluene)
Hazard class 9
UN/ID No 3077
Packing group III
Marine pollutant Product is a marine pollutant according to the criteria set by IMDG/IMO
Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Butylated Hydroxytoluene), 9, III, Marine Pollutant

ICAO/IATA

UN/ID No 3077
Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S. (Butylated Hydroxytoluene)
Hazard class 9
Packing group III

DOT

Proper Shipping Name Not regulated

ADR/RID

Proper Shipping Name Environmentally Hazardous Substance, Solid, N.O.S. (Butylated Hydroxytoluene)
Hazard class 9
UN/ID No 3077
Packing group III
Description UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Butylated Hydroxytoluene), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

International Inventories

All of the components in the product are on the following Inventory lists:

TSCA	Complies
EINECS/ELINCS	Complies
DSL/NDSL	Complies
PICCS	Complies
ENCS	Complies
IECSC	Complies
AICS	Complies
KECL	Complies

Legend

TSCA (Toxic Substances Control Act)

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

RESTRICTIONS - REACH TITLE VIII No information available

U.S. FEDERAL REGULATIONS

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

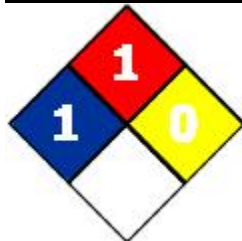
CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

U.S. STATE REGULATIONS

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Butylated Hydroxytoluene	X	X	X		X

16. OTHER INFORMATION

Health Hazard	1
Fire Hazard	1
Reactivity	0

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Revision Date: 01-Apr-2015

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.