BHT

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name	BHT	
Synonyms	Butylated Hydroxytoluene; 2,6-di-tert-butyl-4-methyl phenol; 2,6-di-tert-butyl-p-cresol	
Use	Antioxidant, Food additive, Preservative	
Company	Sasol Chemicals (USA) LLC (an affiliate of Sasol Chemicals North America LLC)	
Address	292 State Route 8, Oil City, PA 16301	
Telephone	CHEMTREC North America Transportation Emergency (24-hr)	(800) 424 9300
	CHEMTREC World Wide	(703) 527-3887
	Other Emergencies (24-hr)	(814) 677 2028
	SDS and Product Information (8:00am-4:30pm CST)	(814) 677 2028
	Health and Safety Information (7:30am-4:00pm CST)	(281) 588 3491
	NCEC - Europe	+44 1235 239 670
	NCEC - Americas	+1 215 207 0061
	NCEC - Middle East/Africa	+44 1235 239 671
	NCEC - East/South East Asia	+65 3158 1074
	NCEC - China	+86 400 120 6011
	NCEC - Australia	+61 2801 44558
E-mail address	SasolElectronicSDS@us.sasol.com	

SECTION 2 HAZARDS IDENTIFICATION

OSHA/GHS Hazards	Eye irritation	Category 2B
	Specific target organ toxicity - single exposure	Category 3 (Resp. irritation)
	Acute aquatic toxicity	Category 1
	Chronic aquatic toxicity	Category 1

LABEL ELEMENTS

Hazard symbols

Signal word Warning

Hazard statements May form combustible dust concentrations in air (during processing)
H320 Causes eye irritation.
H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P280 Wear eye protection/ face protection.
P264 Wash skin thoroughly after handling.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
Prevent dust accumulation.

Response 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.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P391 Collect spillage.

Storage P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

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

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight percent
Butylated hydroxytoluene (BHT)	128-37-0	>=99

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

SECTION 4 FIRST AID MEASURES

Eye contact Remove contact lenses. Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

Skin contact In case of contact, immediately flush skin with soap and plenty of water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Inhalation Remove person to fresh air. If signs/symptoms continue, get medical attention. Inhalation of vapours in high concentration may cause irritation of respiratory system.

Ingestion If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES

Fire/explosion May be ignited by open flame. Avoid dust formation. Dust may form explosive mixture in air. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Do NOT use water jet.

Protective equipment and precautions for firefighters Wear self-contained breathing apparatus and protective suit.

Further information Evacuate personnel to safe areas. Stop source of fuel if possible. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up Evacuate personnel to safe areas. Prevent further leakage or spillage. Remove all sources of ignition. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Fine dust dispersed in air may ignite. Pick up and arrange disposal without creating dust. Non-sparking tools should be used. Sweep up and shovel into suitable containers for disposal. 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.

BHT

SECTION 7 HANDLING AND STORAGE

Safe handling advice 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. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Provide sufficient air exchange and/or exhaust in work rooms. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. During processing, dust may form explosive mixture in air. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

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 adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Eyes Safety glasses with side-shields Molten form: Chemical resistant goggles must be worn. Face-shield.

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

Inhalation Use NIOSH approved respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

EXPOSURE GUIDELINES

Components	Exposure limit(s)
Butylated hydroxytoluene (BHT)	ACGIH TLV (8-hour) 2 mg/m3 (inhalable fraction and/or vapor) NIOSH Recommended Exposure Limit 10 mg/m3

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

Colour white

Form crystalline pellets

BHT

Odour	mild
Odour Threshold	No data available
Flash point	118 °C, 244 °F; closed cup
Flammability	Upper explosion limit: No data available
	Lower explosion limit: No data available
Boiling point/boiling range	265 °C, 509 °F;
Melting point/range	69 - 70 °C, 156 - 158 °F;
Auto-ignition temperature	470 °C, 878 °F;
Decomposition temperature	No data available
Flammability (solid, gas)	Combustible material: may burn but does not ignite readily.
Vapour pressure	< 0.01 mm Hg @ 20 °C, 68 °F;
Vapour density	7.6
Density	0.6 g/cm3 @ 25 °C, 77 °F;
Relative density	0.6 @25 °C, 77 °F;
Water solubility	0.4 - 1.14 mg/l practically insoluble
Viscosity	3.45 cSt @ 80 °C, 176 °F;
Viscosity, dynamic	No data available
pH	No data available
Evaporation rate	No data available
Partition coefficient: n-octanol/water	log Pow: 5.1;
Molecular weight	220.34 g/mol
Combustible dust	
Max. pressure output	7 - 9 bar
Pressure Rise Rate	800 - 1300 bar/s
Deflagration index	200 - 350 m.b/s
Min. ignition energy	10 - 25 mJ

Lower explosion limit	10 - 20 g/m3

SECTION 10 STABILITY AND REACTIVITY

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Keep away from heat and sources of ignition.
Hazardous decomposition products	Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.
Materials to avoid	Strong acids. Strong bases. Oxidizing agents. Reducing agents.
Hazardous polymerisation	Hazardous polymerisation does not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute dermal toxicity	LD50 Rat: > 2,000 mg/kg Not classified due to data which are conclusive although insufficient for classification.
Acute inhalation toxicity	RD50: 32 mg/m3 (TLV reference document) Not classified due to data which are conclusive although insufficient for classification.
Acute oral toxicity	LD50 Rat: > 6,000 mg/kg
Skin corrosion/irritation	Not classified due to data which are conclusive although insufficient for classification.
Serious eye damage/eye irritation	Causes eye irritation.
Respiratory or skin sensitisation	human skin: not sensitizing
Germ cell mutagenicity	**Genotoxicity in vitro**: Type: Ames test Result: negative (literature value) **Genotoxicity in vivo**: Type: micronucleus assay (chromosome aberration); Result: negative

Category approach

Assessment Mutagenicity:
Based on available data, the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity:
No data available

Assessment Reproductive toxicity:
No data available

Teratogenicity:
No data available

Assessment teratogenicity:
No data available

STOT - single exposure
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity
Not applicable

Carcinogenicity

Assessment carcinogenicity:
Contains no ingredient listed as a carcinogen

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Toxicity to fish
LC50 (Oryzias latipes (Japanese medaka)) 96 hours: > 1 - 10 mg/l
Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) 48 hours: > 0.1 - 1 mg/l
Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

Toxicity to algae
ErC50 (Pseudokirchneriella subcapitata (green algae)) 72 hours: > 0.1 mg/l
Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

NOErC (Pseudokirchneriella subcapitata (green algae)) 72 hours: > 0.1 - 1 mg/l

Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

Chronic toxicity to fish NOEC (Oryzias latipes (Japanese medaka)) 30 d: > 0.01 - 0.1 mg/l
Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

Chronic toxicity to aquatic invertebrates NOEC (Daphnia magna (Water flea)) 21 d: > 0.01 - 0.1 mg/l
Test substance: 2,6-di-tert-butyl-4-methylphenol
(literature value)

Biodegradation Not readily biodegradable.
CO2 Evolution Test (28 d): < 60 %
Test substance: 2,6-di-tert-butyl-4-methylphenol
Product is slightly soluble in water.

Bioaccumulative potential Test substance: 2,6-di-tert-butyl-4-methylphenol
646 L/kg ww (EPISuite BCF)

Mobility in soil No data available

Other adverse effects No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Code Any unused product or empty containers may be disposed of as non-hazardous in accordance with state and federal requirements. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification. If the resulting material is determined to be hazardous, please dispose in accordance with state and federal (40 CFR 262) hazardous waste regulations.

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 and original plastic liners may contain product residue. Handling of empty containers and liners should be in a manner to minimize dust generation. Safe handling procedures as outlined in the SDS should be followed at all times. Consult the appropriate official for information regarding disposal requirements.

SECTION 14 TRANSPORT INFORMATION

DOT not regulated

IATA UN 3077, Environmentally hazardous substance, solid, n.o.s., (Butylated Hydroxytoluene), 9, III
This product is regulated as a dangerous good when shipped by air in all quantities according to IATA.

IMDG UN 3077, Environmentally hazardous substance, solid, n.o.s., (Butylated Hydroxytoluene), 9, III, Marine pollutant
This product is regulated as a Marine Pollutant when shipped by water in all quantities according to the IMDG Code.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks No data available

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA Inventory Listing

Components	CAS-No.
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	128-37-0

SARA 302 Status

Components	CAS-No.	Weight percent
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.		

SARA 311/312 Classification

Should this product meet EPCRA 311/312 Tier reporting criteria of 40 CFR 370, refer to Section 2 of this SDS for appropriate classification and Section 3 for components that meet the hazardous classification.

SARA 313 Chemical

Components	CAS-No.	Weight percent
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.		

US. EPA CERCLA Hazardous Substances (40 CFR 302)

Components	Reportable Quantity	Weight percent
none		

BHT

INTERNATIONAL REGULATIONS

WHMIS Classification

Eye irritation	Category 2B
Specific target organ toxicity - single exposure	Category 3 (Resp. irritation)
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

European Union

Acute aquatic toxicity, Category 1
Chronic aquatic toxicity, Category 1

Australia. Inventory of Chemical Substances (AICS)	Listed
Japan. Inventory of Existing and New Chemical Substances (ENCS)	Listed
Japan. ISHL - Inventory of Chemical Substances	Listed
Canada. Domestic Substances List (DSL) Inventory	Listed
Canada. Non-Domestic Substance Listing (NDSL)	Not listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS)	Listed
Korea. Existing Chemicals Inventory (KECI)	Listed
China. Inventory of Existing Chemical Substances (IECSC)	Listed
Mexico. National Inventory of Chemical Substances (INSQ)	Listed
New Zealand. Inventory of Chemical Substances (NZIoC)	Listed
Switzerland. Inventory of Notified New Substances (CHINV)	Listed
Taiwan. National Existing Chemical Inventory (NECI)	Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65

Components	**CAS-No.**
none	

SECTION 16 OTHER INFORMATION

BHT

HAZARD RATINGS

	Health	Flammability	Physical Hazard/ Instability
HMIS®	1	1	0
NFPA	1	1	0

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