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, Israel, Africa, Americas +44 (0) 2087 628 322
NCEC - Middle East, Arabic African countries (where European languages are spoken) +44 (0) 1235 239 670
NCEC - Middle East/Africa (where Arabic is spoken) +44 (0) 1235 239 671
NCEC - Asia Pacific +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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butylated hydroxytoluene (BHT)</td>
<td>128-37-0</td>
<td>&gt;=99</td>
</tr>
</tbody>
</table>

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.
SAFETY DATA SHEET

BHT

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.
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/PERSO NAL 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

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Safety glasses with side-shields</th>
<th>Molten form: Chemical resistant goggles must be worn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>Face-shield.</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Impervious gloves.</td>
<td>Long sleeved clothing</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butylated hydroxytoluene (BHT)</td>
<td>ACGIH TLV (8-hour) 2 mg/m3 (inhalable fraction and/or vapor)</td>
</tr>
<tr>
<td></td>
<td>NIOSH Recommended Exposure Limit 10 mg/m3</td>
</tr>
</tbody>
</table>

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit
TWA= Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

Appearance  solid

Colour  white
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>crystalline pellets</td>
</tr>
<tr>
<td>Odour</td>
<td>mild</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>118 °C, 244 °F; closed cup</td>
</tr>
<tr>
<td>Flammability</td>
<td>Upper explosion limit: No data available</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>265 °C, 509 °F;</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>69 - 70 °C, 156 - 158 °F;</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>470 °C, 878 °F;</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Combustible material: may burn but does not ignite readily.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.01 mm Hg @ 20 °C, 68 °F;</td>
</tr>
<tr>
<td>Vapour density</td>
<td>7.6</td>
</tr>
<tr>
<td>Density</td>
<td>0.6 g/cm³ @ 25 °C, 77 °F;</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.6 @ 25 °C, 77 °F;</td>
</tr>
<tr>
<td>Water solubility</td>
<td>0.4 - 1.14 mg/l practically insoluble</td>
</tr>
<tr>
<td>Viscosity</td>
<td>3.45 cSt @ 80 °C, 176 °F;</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 5.1;</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>220.34 g/mol</td>
</tr>
<tr>
<td>Combustible dust</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

BHT

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. pressure output</td>
<td>7 - 9 bar</td>
</tr>
<tr>
<td>Pressure Rise Rate</td>
<td>800 - 1300 bar/s</td>
</tr>
<tr>
<td>Deflagration index</td>
<td>200 - 350 m.b/s</td>
</tr>
<tr>
<td>Min. ignition energy</td>
<td>10 - 25 mJ</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>10 - 20 g/m3</td>
</tr>
</tbody>
</table>

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.
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
SAFETY DATA SHEET

BHT

(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  none  none
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

| none |

CAS-No.
SECTION 16 OTHER INFORMATION

HAZARD RATINGS

<table>
<thead>
<tr>
<th>HMIS®</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard/ Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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