Product Name

2,6- Di Tertiary Butyl Phenol

CAS Number: 128-39-2

1. IDENTIFICATION

Trade Name: 2, 6-di-tert-butylphenol
CAS Number: 128-39-2
EC number: 204-884-0
Application of the substance / the mixture
Industry Application
Plastic Additives:

- 2,6-DTBP is used as an intermediate in the production of antioxidants for polymers such as polypropylene, polyethylene, polystyrene, and other materials.
- 2,6-DTBP is also directly utilised as an antioxidant in lubricants, jet fuels, and metal cutting fluids.

Details of the supplier of the safety data sheet
Manufacturer/Supplier: Blue Lotus Chem LLC
Address: 25219, Kuykendahl Road, Suite 210,
Tomball, TX 77375, USA
Phone: +1 (346) 468 –1525
Email: support@bluelotuschem.com
Information Department: R&D
Emergency Telephone Number: +1 703 527 3887 / 800 424 9300

2. HAZARD(S) IDENTIFICATION

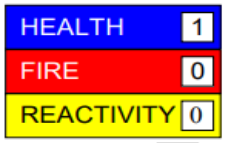
Classification of the Substance or Mixture:
This product is NOT classified according to the **Globally Harmonized System (GHS)**.
Label Elements:

 *GHS09 Environment*	 *GHS07*
Aquatic Acute 1 H400 Very toxic to aquatic life. Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.	Skin Irritation 2 H315 Causes skin irritation.

- **GHS Label Elements:** The substance is classified and labelled according to the Globally Harmonized System (GHS).
- **Hazard Pictograms:**

- **Signal Word:** Warning
- **Hazard Statements:**
  - H315: Causes skin irritation.
  - H410: Very toxic to aquatic life with long-lasting effects.
- **Precautionary Statements:**
  - Wash thoroughly after handling.
  - Avoid release to the environment.
  - Wear protective gloves, clothing, eye protection, face protection, and hearing protection.
  - If on skin: Wash with plenty of water.
  - Specific treatment required (seek medical attention if needed).
  - If skin irritation occurs: Get medical advice/attention.
  - Take off contaminated clothing and wash before reuse.
  - Collect spillage.
  - Dispose of contents/container according to local, regional, national, and international regulations.

Classification System:

NFPA Ratings (scale 0 - 4)		**HMIS Ratings** (scale 0 - 4)		**Other Hazards:**
	Health = 1 Fire = 0 Reactivity = 0		Health = 1 Fire = 0 Reactivity = 0	**Results of PBT and vPvB Assessment:** ○ **PBT:** The substance is not PBT. ○ **vPvB:** The substance is not PBT.

3. COMPOSITION / INFORMATION ON INGREDIENTS

- **Chemical Characterisation:** Substances
- **CAS No. Description**
  CAS: 128-39-2 2,6-di-tert-butylphenol
- **Identification number(s)**
- **EC number:** 204-884-0
- **Additional information:**
  Molecular formula: C14H22O Molecular Weight: 206.3268 g/mol Concentration: 99.7%
  Synonyms: 2,3-di-tert-butylphenol
  2,6-bis(1,1-dimethylethyl)-phenol

4. FIRST- AID MEASURES

- **Description of First-Aid Measures:**
- **General Information:**
  - First aid personnel should pay attention to their own safety.
  - Do not leave affected people unattended.

- **After Inhalation:**
  - If breathed in, move out of affected area, and supply fresh air.
  - Maintain an open airway.
  - Keep a person warm and at rest.

- **After Skin Contact:**
  - Remove contaminated clothing.
  - Get medical attention if irritation develops or persists.
  - In case of burns immediately wash area with water for 10-15 minutes. Wash affected area with plenty of polyethylene glycol.
- **After Eye Contact:**
  - Remove contact lenses if present and easy to do.
  - Wash affected eyes for at least 15 minutes under running water with eyelids held open.
- **After Swallowing:**
  - Do not induce vomiting.
  - Never give anything by mouth to an unconscious person.
  - Rinse mouth with water.
- **Information for Doctor:**
  - Treat symptomatically and supportively.
- **Most important symptoms and effects, both acute and delayed** Irritant effects.
- **Indication of any immediate medical attention and special treatment needed.**
  NOTE TO PHYSICIANS: Treat by observation and supportive measures as indicated by the patients' conditions.

5. FIRE-FIGHTING MEASURES

- **Extinguishing Media:**
- **Suitable Extinguishing Agents:**
  - In case of fire use water spray or fog, alcohol resistant foam, dry chemical, or carbon dioxide.
- **For safety reasons unsuitable extinguishing agents:** Do not use water jets.
- **Special hazards arising from the substance or mixture.**
  - Toxic and irritant fumes may be formed.
  - Decomposition products may include carbon monoxide and carbon dioxide.
- **Advice for firefighters**
  - Use standard firefighting measures.
- **Protective equipment:**
  - Wear a Chemical Protection Suit and Positive-Pressure Breathing Apparatus.
- **Additional information**
  - Not flammable but will support combustion.
  - High concentration of airborne dust may form explosive mixture with air. Ensure that good housekeeping practices are followed as well as applicable guidelines such as the National Fire Protection Association (NFPA) 654, "Prevention of Fire Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids".
  - Vapors may be heavier than air and may travel along the ground to some distant source of ignition and flash back. Keep container(s) exposed to fire cool, by spraying with water.

6. ACCIDENTAL RELEASE MEASURES:

- **Personal Precautions, Protective Equipment, and Emergency Procedures:**
  - Wear protective equipment. Keep unprotected people away.
  - Avoid contact with skin and eyes.
  - Ensure adequate ventilation.

- Eliminate all sources of ignitions.

- **Environmental Precautions:**
  - Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.
  - Avoid raising dust.
- **Methods and Material for Containment and Cleaning Up:**
  - Shut off all ignition sources.
  - Shut off the source of leak if safe to do so.
  - Contain spillage by using sand, earth, or any other appropriate absorbent barriers.
  - Sweep or shovel-up spillage and remove contaminated material to a safe location.
  - Do not flush away residues with water.
- **Reference to Other Sections:**
  - See Section 7 for information on **safe handling**.
  - See Section 8 for **personal protection equipment details**.
  - See Section 13 for **proper disposal information.**
- **Protective Action Criteria for Chemicals (PAC):**
  - **PAC-1**: Substance is not listed.
  - **PAC-2:** Substance is not listed.
  - **PAC-3**: Substance is not listed.

7. HANDLING AND STORAGE

Handling:

- **Precautions for Safe Handling:**
  - Handle in accordance with good industrial hygiene and safety practice.
  - Wash thoroughly after handling.
  - Avoid contact with eyes, skin, and clothing.
  - Do not breathe vapor/dust.
- **Information About Protection Against Explosions and Fires:**
  - Keep ignition sources away. Do not smoke.
- **Conditions for Safe Storage, Including Any Incompatibilities:**

Storage:

- **Requirements for Storerooms and Receptacles:**
  - Store in tightly closed containers and in well-ventilated areas.
  - Keep away from heat and sources of ignition.
  - Material can accumulate static charges from material handling management. Bond and ground as appropriate. For additional recommendations, consult and applicable guidelines such as National Protection Association (NFPA) 77, "Recommended Practices on Static Electricity".
  - The Minimum Ignition Energy for some organic solids as dust may be as low as 3 mJ (mill joules). The Minimum Explosive Concentration for some organic solids as dust may be as low as 0.025 oz/ft 3 or ~20 g/m3.
- **Information About Common Storage Facility:**
  - Keep away from food materials.
  - Store in original package.
  - Store in dry, cool area.
- **Further Information About Storage Conditions:**
  - Containers which are opened must be carefully resealed. Do not freeze.

- **Specific end use(s)**
  - No further relevant information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- **Additional Information About Technical Systems:**
  Safety Shower and Eye bath
  Engineering controls should be provided which maintain airborne concentrations as low as practicable. Ventilation should be sufficient to efficiently remove, and prevent build-up of, any vapors, dust, or fumes that may be generated during handling or thermal processing.
  Control parameters
  Components with limited values that require monitoring at the workplace: Not required.
  Additional information: The lists that were valid during the creation were used as a basis.
- **Control Parameters:**
  - **Components (with limited values) require Monitoring at the Workplace:** Not required.
  - **Additional information:** The lists that were valid during the creation were used as a basis.
- **Exposure Controls:**
  - In order to ensure appropriate electrical safety practices are followed, consult applicable standards. These may include guidelines such as the National Fire Protection Association (NFPA) 70, "The National Electrical Code" and NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas".
  - NOTE: since the material's vapors, dust or fumes can form explosives mixtures in the air, ensure that any potential areas where explosions may occur are designed to minimize potential damage.
  - For recommendations to prevent such explosions and associated damage, consult applicable guidelines such as National Fire Protection Association (NFPA) 69, "Standard on Explosion Prevention Systems" and/or NFPA 68, "Guide for Venting Defragrations".
- **Personal Protective Equipment (PPE):**
  - **General Protective and Hygienic Measures:**
    Do not eat, drink, smoke or sniff while working. Ensure good ventilation/exhaustion at the workplace.
    The usual precautionary measures are to be adhered to when handling chemicals. Immediately remove all soiled and contaminated clothing.
    Keep away from foodstuffs, beverages, and feed. Wash hands before breaks and at the end of work.
    Follow standard precautions when handling chemicals.
  - **Breathing Equipment:**
    Do not breathe vapor.
    A respirator must be worn if exposed to dust -respirator with combination filter for vapor/ particulate.
    In case of insufficient ventilation, wear suitable respiratory equipment.
- **Protection of Hands:**


Protective gloves

The glove material must be impermeable and resistant to the product/ the substance/ the preparation.
The actual choice of glove should be based on a risk assessment of the tasks being carried out. Remember that a glove offers limited protection and may fail through mechanical damage, thus, other protective measures should be used where appropriate. Please refer to your glove supplier to consider the conditions under which the glove is to be used.

- **Material of Gloves:**
  The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration Time of Glove Material:**
  Wear plastic or rubber gloves with an estimated breakthrough time of >480 minutes are recommended.
- **Eye Protection:**


Tightly sealed goggles

Wear eye/face protection.
If splashes are likely to occur, wear: face-shield.

- **Body protection:** Protective work clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	White to yellow
Odor:	Characteristic
pH-value:	Not determined.
Change in condition. ○ **Melting point/Melting range:** ○ **Boiling point/Boiling range:**	 37 °C (98.6 °F) 253 °C (487.4 °F) (Atm. press.: ca.1atm)
Flash point:	108.5 Deg C
Flammability (solid):	Product is not flammable.
Auto igniting:	375 °C
Danger of explosion:	Product does not present an explosion hazard.
Oxidizing properties	No oxidizing properties.
Vapor pressure at 20 °C (68 °F):	0.0076±0.0003 mmHg
Density:	0.914g/cm^3
Solubility in / Miscibility with Water at 25 °C (77 °F):	4.11 mg/l (pH:7)
Partition coefficient (n-octanol/water) at 24 °C (75.2 °F):	4.5 log POW
Other information	No further relevant information available.

10. STABILITY AND REACTIVITY

- **Reactivity:** The product is non-reactive under normal conditions of use, storage, and transport.
- **Chemical Stability:** *Stable at least up to 350°C (8hr).*
- **Thermal Decomposition / Conditions to be Avoided:** No decomposition if used according to specifications.
- **Possibility of Hazardous Reactions:**
  No hazardous reactions are foreseeable in normal conditions of use and storage.
- **Conditions to Avoid:**
  Avoid contact with incompatible materials.
  Keep away from heat and sources of ignition.
  Material may discolor when in contact with copper and/or bronze.
- **Incompatible Materials:** Strong acids, bases. Strong oxidizers.
- **Hazardous Decomposition Products:** Oxides of carbon evolved in fire.

11. TOXICOLOGICAL INFORMATION

- **Information on Toxicological Effects:**
  - **Acute Toxicity:**

LD/LC50 values that are relevant for classification:		
Oral	**LD50**	> 5000 mg/kg bw (rat (Sprague-Dawley) male/female) (Acute Toxicity: oral)
Dermal	**LD50**	*>10000mg/kg (Rabbit) (Acute Toxicity: dermal)*

  - **Primary Irritant Effect:**
    - **On the Skin:**
      Irritant to skin and mucous membranes.
      The test material was evaluated for its irritancy potential to the skin of the New Zealand White rabbit. The test material produced a primary irritation index of 3.8 and was classified as moderate irritant to rabbit skin according to the Draize Classification scheme. No corrosive effects were noted.
    - **On the Eye:** Based on available data, the classification criteria are not met.
    - **Sensitization:** Based on available data, the classification criteria are not met.
- **Additional Toxicological Information:**
- **Carcinogenic Categories:**
  - **IARC (International Agency for Research on Cancer):** Substance is not listed.
  - **NTP (National Toxicology Program):** Substance is not listed.
  - **OSHA-Ca (Occupational Safety & Health Administration):** Substance is not listed.
  - **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
  - **Germ cell mutagenicity** Based on available data; the classification criteria are not met.
  - **Carcinogenicity** No further information is available.
  - **Specific target organ toxicity - single exposure** No further information is available.
  - **Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.
  - **Aspiration hazard** No further information is available.
  - **Information on other hazard**: No further information is available.

12. ECOLOGICAL INFORMATION

- **Toxicity:**
  - **Aquatic Toxicity:**

EC50 (48 h)	0.45 mg/L (Daphnia magna) (US EPA test method)
NOEC (21 d)	0.035 mg/L (Daphnia magna) (OECD Guideline 211)
EC50(72 h)	0.51mg/L (Raphidocelis subcapitata (Algae)) (EPA OTS 797.1050 (Algal Toxicity, Tiers I and II))

- **Persistence and Degradability:** *Not readily biodegradable*
- **Behavior in Environmental Systems:**
  - **Bioaccumulative Potential:**
    Experimental BCF for 2,6-di-tert-butylphenol of 660 L/kg and the BCF in the range 128- 436 l/kg for 2,4-di-tert-butylphenol, together with the predicted BCF of 259.5 L/kg, it can be concluded that 2,6-di-tert-butylphenol has a moderate bioaccumulation potential.
  - **Mobility in Soil:**
    Koc at 20 °C:4 493.
    The results of the batch equilibrium study show that 14C-2, 6-DTBP is not strongly adsorbed to any of the sediments tested.
- **Additional Ecological Information:**
  - **General Notes:**
    Water hazard class 2 (Assessment by list): hazardous for water.
    Do not allow products to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground.
    Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms.
- **Results of PBT and vPvB Assessment:**
  - **PBT:** *The substance is not PBT.*
  - **vPvB:** *The substance is not vPvB.*
  - **Other Adverse Effects:** *No further information is available.*

13. DISPOSAL CONSIDERATIONS

- **Waste Treatment Methods:**
  - **Recommendation:**
    Do not let product enter drains.
    The generation of waste should be avoided or minimized wherever possible. Must not be disposed of together with household garbage.
    Do not allow product to reach sewage system.
  - **Waste disposal key:**
    Waste must be disposed of in accordance with federal, state, and local environmental control regulations.
    Dispose of waste by burning in incinerator.
    Do not discharge into drains or the environment, dispose of it to an authorized waste collection point.
    The product contains the following organically bound elements: CHO. Special waste- code WS (CH): 2250.

- **Uncleaned Packaging's:**
  - **Recommendation:** *Do not reuse empty containers without commercial cleaning or reconditioning.*

UN-Number DOT, ADR, IMDG, IATA	UN3077
○ ***DOT***	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol)
○ ***ADR***	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert- butylphenol)
○ ***IMDG***	ENVIRONMENTALLY HAZARDOUS

	SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol), MARINE POLLUTANT
○ ***IATA***	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol)

14. TRANSPORT INFORMATION

UN-Number **DOT, ADR, IMDG, IATA**	UN3077
UN proper shipping name **DOT** **ADR** **IMDG** **IATA**	 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol) 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert- butylphenol) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol), MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6-di-tert-butylphenol)
Transport hazard class(es) **DOT, ADR, IMDG, IATA**  **Class**	**9 Miscellaneous dangerous substances and articles**
Label	**9**
Packing group **DOT, ADR, IMDG, IATA**	III
Special marking (ADR): **Special marking (IATA):**	Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
· Special precautions for user	Warning: Miscellaneous dangerous substances and articles
Hazard identification number (Kemler code): **EMS Number:** **Stowage Category** **Stowage Code**	90 F-A, S-F A SW23 When transportted in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

Transport/Additional information: **DOT** **Remarks:**	Special marking with the symbol (fish and tree).
ADR	
Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
IMDG	
Limited quantities (LQ) **Excepted quantities (EQ)**	5 kg Code: E1
	Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. MOLTEN (2,6- DI-TERT- BUTYLPHENOL), 9, III

15. REGULATORY INFORMATION

- **Safety, Health, and Environmental Regulations/Legislation Specific for the Substance or Mixture:**
- **SARA:**
  - **Section 355 (Extremely Hazardous Substances):** Substance is not listed.
- **Section 313 (Specific Toxic Chemical Listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE.
- **Hazardous Air Pollutants:** Substance is not listed.
- **Proposition 65:**
  - **Chemicals Known to Cause Cancer:** Substance is not listed.
  - **Chemicals Known to Cause Reproductive Toxicity for Females:** Substance is not listed.
  - **Chemicals Known to Cause Reproductive Toxicity for Males:** Substance is not listed.
  - **Chemicals Known to Cause Developmental Toxicity:** Substance is not listed.
- **Carcinogenic Categories:**
  - **EPA (Environmental Protection Agency):** Substance is not listed.
  - **TLV (Threshold Limit Value):** Substance is not listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health):** Substance is not listed.
- **GHS Label Elements:** The substance is classified and labelled according to the Globally Harmonized System (GHS).
- **Hazard Pictograms:**

GHS07 GHS09

- **Signal Word:** Warning.
- **Hazard Statements:**
  H315 Causes skin irritation.
  H410 Very toxic to aquatic life with long lasting effects
- **Precautionary statements**

Wash thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
If on skin: Wash with plenty of water.
Specific treatment.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Collect spillage.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other regulations, limitations, and prohibitive regulations**
  International Inventory list:
  Australian Inventory of Industrial Chemicals (AIIC)-Listed.
  China - Chemical Inventory of Existing Chemical Substances (IECSC)-Listed.
  EPA - TSCA - Inventory-Listed.
  Mexico - National Inventory of Chemical Substances-Listed.
  New Zealand - Inventory of Chemicals (NZIoC)-Listed.
  Philippine Inventory of Chemicals and Chemical Substances (PICCS)-Listed.
  Taiwan Chemical Substance Inventory (TCSI)-Listed.
  Turkish Chemical Inventory-Listed.
  Vietnam National Chemical Inventory (Draft)-Listed.
- **Chemical Safety Assessment:** A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department Issuing SDS:** Product Safety Department.
- **Contact**: support@bluelotuschem.com
- **Date of Preparation / Last Revision**: 05/15/2024
- **Abbreviations and Acronyms:**
  - **ADR**: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
  - **IMDG**: International Maritime Code for Dangerous Goods
  - **DOT**: US Department of Transportation
  - **IATA**: International Air Transport Association
  - **EINECS**: European Inventory of Existing Commercial Chemical Substances
  - **CAS**: Chemical Abstracts Service (division of the American Chemical Society)
  - **NFPA**: National Fire Protection Association (USA)
  - **HMIS**: Hazardous Materials Identification System (USA)
  - **LC50**: Lethal concentration, 50 percent
  - **LD50**: Lethal dose, 50 percent
  - **PBT**: Persistent, Bioaccumulative and Toxic
  - **vPvB**: very Persistent and very Bioaccumulative
  - **NIOSH**: National Institute for Occupational Safety
  - **OSHA**: Occupational Safety & Health
  - **TLV**: Threshold Limit Value
  - **PEL**: Permissible Exposure Limit
  - **REL**: Recommended Exposure Limit
  - **Skin Irritation 2:** Skin corrosion/irritation – Category 2
  - **Aquatic Acute 1:** Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  - **Aquatic Chronic 1:** Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

- ***Sources***
  ECHA-https://echa.europa.eu/substance-information/-/substanceinfo/100.004.441
  Toxplanet-https://chemical-search.toxplanet.com//product-search/chem-id/ei-fts-search/b9e84fd4-aa3c-4f85-9763-4b0024cd3ada

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