

## MATERIAL SAFETY DATA SHEET

### 1.Product and company identification

#### 1.1 Product identifiers

Product name : 2,6-di-tert-butyl-4-methylphenol

CAS-No. : 128-37-0

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis and Manufacture of substances

#### 1.3 Details of the supplier of the safety data sheet

Company : Changzhou Extraordinary Pharmatech co.,LTD

Add:No4 HouYang chemical industrial park.Changzhou Jiangsu province P.R.China

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### 2.Hazard identification

#### 2.1Classification of the substance or mixture

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

#### 2.2GHS label elements, including precautionary statements

##### Pictogram(s)



##### Signal word

Warning

##### Hazard statement(s)

H410 Very toxic to aquatic life with long lasting effects

##### Precautionary statement(s)

##### Prevention

P273 Avoid release to the environment.

##### Response

P391 Collect spillage.

##### Storage

none

##### Disposal

P501 Dispose of contents/container to ...

#### 2.3Other hazards which do not result in classification

None

### 3.Composition/information on ingredients

#### 3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2,6-di-tert-butyl-4-methylphenol	2,6-di-tert-butyl-4-methylphenol	128-37-0	none	100%

#### **4.First-aid measures**

##### **4.1Description of necessary first-aid measures**

###### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

###### **If inhaled**

Fresh air, rest. Refer for medical attention.

###### **In case of skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap.

###### **In case of eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

###### **If swallowed**

Rinse mouth. Rest. Refer for medical attention .

##### **4.2Most important symptoms/effects, acute and delayed**

Exposure Routes: inhalation, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin

Target Organs: Eyes, skin (NIOSH, 2016)

##### **4.3Indication of immediate medical attention and special treatment needed, if necessary**

If this chemical gets into the eyes, remove any contact lenses at once and irrigate immediately for at least 15 min, occasionally lifting upper and lower lids. Seek medical attention immediately. If this chemical contacts the skin, remove contaminated clothing and wash immediately with soap and water. Seek medical attention immediately. If this chemical has been inhaled, remove from exposure, begin rescue breathing (using universal precautions, including resuscitation mask) if breathing has stopped and CPR if heart action has stopped. Transfer promptly to a medical facility. When this chemical has been swallowed, get medical attention.

#### **5.Fire-fighting measures**

##### **5.1Extinguishing media**

###### **Suitable extinguishing media**

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### **5.2Specific hazards arising from the chemical**

This chemical is combustible.

##### **5.3Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

#### **6.Accidental release measures**

##### **6.1Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### **6.2 Environmental precautions**

Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Personal protection: P2 filter respirator for harmful particles.

### **6.3 Methods and materials for containment and cleaning up**

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## **7. Handling and storage**

### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

Separated from strong oxidants and strong bases. Well closed. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Non Combustible Solids.

## **8. Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 10 mg/cu m.

#### **Biological limit values**

no data available

### **8.2 Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin protection**

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

### 9.Physical and chemical properties

<b>Physical state</b>	White crystals or crystalline powder
<b>Colour</b>	White, crystalline solid
<b>Odour</b>	Very faint, musty, occasional cresylic-type odor
<b>Melting point/ freezing point</b>	248°C(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	265°C(lit.)
<b>Flammability</b>	Class IIIB Combustible Liquid: Fl.P. at or above 93.33°C.Combustible.
<b>Lower and upper explosion limit / flammability limit</b>	no data available
<b>Flash point</b>	127°C
<b>Auto-ignition temperature</b>	470°C
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	3.47 centistokes at 0°C; 1.54 centistokes at 120°C
<b>Solubility</b>	In water:insoluble
<b>Partition coefficient n-octanol/water (log value)</b>	log Kow = 5.10
<b>Vapour pressure</b>	<0.01 mm Hg ( 20 °C)
<b>Density and/or relative density</b>	1.048
<b>Relative vapour density</b>	7.6 (vs air)
<b>Particle characteristics</b>	no data available

### 10.Stability and reactivity

#### 10.1Reactivity

no data available

#### 10.2Chemical stability

Stable under recommended storage conditions.

#### **10.3 Possibility of hazardous reactions**

Combustible when exposed to heat or flame. Phenols, such as BUTYLATED HYDROXYTOLUENE, do not behave as organic alcohols, as one might guess from the presence of a hydroxyl (-OH) group in their structure. Instead, they react as weak organic acids. Phenols and cresols are much weaker as acids than common carboxylic acids (phenol has pKa = 9.88). These materials are incompatible with strong reducing substances such as hydrides, nitrides, alkali metals, and sulfides. Flammable gas (H<sub>2</sub>) is often generated, and the heat of the reaction may ignite the gas. Heat is also generated by the acid-base reaction between phenols and bases. Such heating may initiate polymerization of the organic compound. Phenols are sulfonated very readily (for example, by concentrated sulfuric acid at room temperature). The reactions generate heat. Phenols are also nitrated very rapidly, even by dilute nitric acid. Nitrated phenols often explode when heated. Many of them form metal salts that tend toward detonation by rather mild shock. May react with oxidizing materials.

#### **10.4 Conditions to avoid**

no data available

#### **10.5 Incompatible materials**

Incompatible materials: Acid chlorides, acid anhydrides, oxidizing agents, bases, brass, copper

#### **10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions - Carbon oxides.

### **11. Toxicological information**

#### **Acute toxicity**

Oral: LD50 Rat oral 890 mg/kg

Inhalation: no data available

Dermal: no data available

#### **Skin corrosion/irritation**

no data available

#### **Serious eye damage/irritation**

no data available

#### **Respiratory or skin sensitization**

no data available

#### **Germ cell mutagenicity**

no data available

#### **Carcinogenicity**

No data are available in humans. Limited evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

**12.Ecological information**

**12.1Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

**12.2Persistence and degradability**

AEROBIC: 2,6-Di-t-butyl-p-cresol, present at 50 mg/L, reached 4.5% of its theoretical BOD in 4 weeks using a sludge inocula at 50 ppm(1). Using a Kodaira (sandy clay loam; pH 5.5, 31% sand, 40% silt, 29% clay; 15.3% organic matter; Tokoyo), Azuchi (light clay; pH 6.3, 65% sand, 18% silt, 17% clay; 2.5% organic matter; Shiga Pref) and Takarazuka (sandy loam; pH 7.0, 95% sand, 3% silt, 2% clay; 2.7% organic matter; Hyogo Pref) soils in Japan, 14C-labeled 2,6-di-t-butyl-p-cresol was degraded 57.3, 55.8 and 48.4% degraded, respectively, after 24 days(2).

**12.3Bioaccumulative potential**

BCF values 330-1800, 230-2500 and 220-2800 were measured for 2,6-di-t-butyl-p-cresol present at 5, 50 and 500 ppb, respectively, using rice fish (Cyprinus carpio) which were exposed over a 6 to 8-week period(1). According to a classification scheme(2), these BCF values suggest that bioconcentration in aquatic organisms is high to very high(SRC), provided the compound is not metabolized by the organism(SRC).

**12.4Mobility in soil**

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 2,6-di-t-butyl-p-cresol can be estimated to be  $1.5 \times 10^4$ (SRC). According to a classification scheme(2), this estimated Koc value suggests that 2,6-di-t-butyl-p-cresol is expected to be immobile in soil.

**12.5Other adverse effects**

no data available

**13.Disposal considerations**



### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

### 14. Transport information

#### 14.1 UN Number

ADR/RID: UN3077

IMDG: UN3077

IATA: UN3077

#### 14.2 UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

#### 14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

#### 14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

#### 14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

#### 14.6 Special precautions for user

no data available

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

no data available

### 15. Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
2,6-di-tert-butyl-4-methylphenol	2,6-di-tert-butyl-4-methylphenol	128-37-0	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.

<b>Vietnam National Chemical Inventory</b>	Listed.
<b>Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)</b>	Listed.

#### **16.Other information**

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority.

The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

#### **Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Changzhou Extraordinary Pharmatech co., LTD not be held liable for any damage resulting from handling.