1. PRODUCT AND COMPANY IDENTIFICATION

Product Name  2,6-Di-tert-butyl-4-methylphenol
Cat No. AC112990000; AC112990010; AC112990050; AC112992500
Synonyms BHT; Butylated hydroxytoluene; DBPC; Ionol; 2,6-Di-tert-butyl-p-cresol
Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100
CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!
Harmful if swallowed. May cause pulmonary edema. Causes severe eye irritation and possible burns. Irritating to skin. May cause irritation of respiratory tract. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance White
Physical State Solid
Odor slight phenolic

Target Organs Eyes, Skin, Respiratory system, Blood, Liver, Kidney

Potential Health Effects
Acute Effects
Principle Routes of Exposure
Eyes
Causes severe eye irritation and possible burns.

Skin
Irritating to skin. May be harmful in contact with skin.

Inhalation
May be harmful if inhaled. May cause irritation of respiratory tract.

Ingestion
Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Direct aspiration into the lungs may cause chemical pneumonitis and/or pulmonary edema.

Chronic Effects
Mutagenic effects have occurred in humans. Experiments have shown reproductive toxicity effects on laboratory animals. Tumorigenic effects have been reported in experimental animals. Liver and kidney injuries may occur.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions
Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point
127°C / 260.6°F

Method -
No information available.

Autoignition Temperature
345°C / 653°F

Explosion Limits
No data available

Suitable Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media
No information available.

Hazardous Combustion Products
No information available.

Sensitivity to mechanical impact
No information available.

Sensitivity to static discharge
No information available.
Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition

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. Thermal decomposition can lead to release of irritating gases and vapors.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions
Keep out of waterways. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>TWA: 2 mg/m³</td>
<td>(Vacated) TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>STEL: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 20 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

| Eye/face Protection | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
| Skin and body protection | Wear appropriate protective gloves and clothing to prevent skin exposure.
| Respiratory Protection | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical State | Solid |
| Appearance    | White |
| Odor          | slight phenolic |
| Odor Threshold| No information available. |
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.02 mbar @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>7.6</td>
</tr>
<tr>
<td>Viscosity</td>
<td>3.47 cS @ 0 °C</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>265°C / 509°F @ 760 mmHg</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>69 °C / 156.2°F - 159.8°F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>127°C / 260.6°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>220.35</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C15 H24 O</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- **Stability**: Stable under normal conditions.
- **Conditions to Avoid**: Incompatible products. Excess heat. Avoid dust formation. Exposure to light.
- **Incompatible Materials**: Strong oxidizing agents, Strong acids, Bases, Acid chlorides, Acid anhydrides, copper, Copper alloys, Peroxides
- **Hazardous Decomposition Products**: Carbon monoxide (CO), Carbon dioxide (CO₂)
- **Hazardous Polymerization**: Hazardous polymerization does not occur.
- **Hazardous Reactions**: None under normal processing..

11. TOXICOLOGICAL INFORMATION

- **Acute Toxicity**

<table>
<thead>
<tr>
<th>Component Information</th>
<th>LD50 Oral (LD50 Dermal)</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>890 mg/kg (Rat)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

- **Irritation**: Irritating to skin. Severe eye irritant
- **Toxicologically Synergistic Products**: No information available.

**Chronic Toxicity**

- **Carcinogenicity**: There are no known carcinogenic chemicals in this product
- **Sensitization**: No information available.
- **Mutagenic Effects**: Mutagenic effects have occurred in humans. Not mutagenic in AMES Test
- **Reproductive Effects**: Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects  No information available.

Teratogenicity  No information available.

Other Adverse Effects  The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

Endocrine Disruptor Information  No information available

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>0.42 mg/L EC50 &gt; 72 h 6 mg/L EC50 = 72 h</td>
<td>LC50 &gt;0.57 mg/L/96H (Goldfish)</td>
<td>EC50 = 7.82 mg/L 5 min EC50 = 8.57 mg/L 15 min EC50 = 8.98 mg/L 30 min</td>
<td>EC50 &gt;0.31 mg/L/48H (Daphnia)</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**  Not readily biodegradable.

**Bioaccumulation/ Accumulation**  No information available

**Mobility**

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>4.17</td>
</tr>
</tbody>
</table>

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. TRANSPORT INFORMATION

**DOT**

<table>
<thead>
<tr>
<th>UN-No</th>
<th>ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>UN3077</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
</tbody>
</table>

**TDG**

<table>
<thead>
<tr>
<th>UN-No</th>
<th>ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>UN3077</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
</tbody>
</table>

**IATA**

<table>
<thead>
<tr>
<th>UN-No</th>
<th>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>3077</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
</tbody>
</table>
14. TRANSPORT INFORMATION

Packing Group III

IMDG/IMO

UN-No 3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>204-881-4</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable
CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade: Slight risk, Grade 1

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D1B Toxic materials
D2B Toxic materials

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com
Disclaimer
The information provided on this Safety Data Sheet 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.

End of MSDS