1. Identification

Product Name
4-tert-Butylcatechol

Cat No. :
AC154350000; AC154350025; AC154350050; AC154350100; AC154351000; AC154355000

CAS-No
98-29-3

Synonyms
4-tert-Butylpyrocatechol; 4-(1,1-Dimethylethyl)-1,2-benzenediol; TBC

Recommended Use
Laboratory chemicals.

Uses advised against
Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

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

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity
Category 4

Acute dermal toxicity
Category 4

Skin Corrosion/Irritation
Category 1B

Serious Eye Damage/Eye Irritation
Category 1

Skin Sensitization
Category 1

Carcinogenicity
Category 1B

Specific target organ toxicity (single exposure)
Category 3

Target Organs - Respiratory system.

Label Elements

Signal Word
Danger
Hazard Statements
Causes severe skin burns and eye damage
May cause respiratory irritation
May cause an allergic skin reaction
May cause cancer
Harmful if swallowed or in contact with skin

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use only outdoors or in a well-ventilated area
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life
Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>98-29-3</td>
<td>&lt;=100</td>
</tr>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>&lt;=0.5</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is
required.

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

**Skin Contact**
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

**Inhalation**
Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Ingestion**
Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects**
Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Notes to Physician**
Treat symptomatically

### 5. Fire-fighting measures

**Suitable Extinguishing Media**
CO\(_2\), dry chemical, dry sand, alcohol-resistant foam.

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
129 °C / 264.2 °F

**Method**
No information available

**Autoignition Temperature**
No information available

**Explosion Limits**
Upper No data available
Lower No data available

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**
Carbon monoxide (CO), Carbon dioxide (CO\(_2\)). Fumes. Thermal decomposition can lead to release of irritating gases and vapors.

**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.

### NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 6. Accidental release measures

**Personal Precautions**
Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

**Environmental Precautions**
Do not flush into surface water or sanitary sewer system. Do not allow material to
contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean-up: Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and storage

Handling: Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

Storage: Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catechol</td>
<td>TWA: 5 ppm</td>
<td>(Vacated) TWA: 5 ppm</td>
<td>TWA: 5 ppm</td>
<td>TWA: 5 ppm</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>(Vacated) TWA: 20 mg/m³</td>
<td>Skin</td>
<td>TWA: 20 mg/m³</td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

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

Personal Protective Equipment

Eye/face Protection: Tight sealing safety goggles. Face protection shield.

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.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off-white</td>
</tr>
<tr>
<td>Odor</td>
<td>aromatic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>53 - 56 °C / 127.4 - 132.8 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>285 °C / 545 °F @ 760 mmHg</td>
</tr>
<tr>
<td>Flash Point</td>
<td>129 °C / 264.2 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
</tr>
</tbody>
</table>
### 4-tert-Butylcatechol

**Revision Date:** 26-Nov-2019

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C10 H14 O2</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>166.22</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactive Hazard**

None known, based on information available

**Stability**

Hygroscopic.

**Conditions to Avoid**

Incompatible products. Excess heat. Exposure to moist air or water.

**Incompatible Materials**

Strong oxidizing agents, Alkaline, Metals

**Hazardous Decomposition Products**

Carbon monoxide (CO), Carbon dioxide (CO₂), Fumes, Thermal decomposition can lead to release of irritating gases and vapors

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Hazardous Reactions**

None under normal processing.

### 11. Toxicological information

#### Acute Toxicity

**Product Information**

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (mg/kg)</th>
<th>LD50 Dermal (mg/kg)</th>
<th>LC50 Inhalation (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>815 (Rat)</td>
<td>1331 (Rat)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Catechol</td>
<td>ECHA (RAC) ATE = 300 mg/kg LD50 = 260 mg/kg (Rat)</td>
<td>ECHA (RAC) ATE = 600 mg/kg LD50 = 800 mg/kg (Rabbit)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation**

Causes burns by all exposure routes.

**Sensitization**

No information available.

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>98-29-3</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>Group 2B</td>
<td>Not listed</td>
<td>A3</td>
<td>X</td>
<td>A3</td>
</tr>
</tbody>
</table>

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen

**Mexico - Occupational Exposure Limits - Carcinogens**

A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
4-tert-Butylcatechol  

Revision Date 26-Nov-2019

A4 - Not Classifiable as a Human Carcinogen  
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects  
No information available

Reproductive Effects  
No information available.

Developmental Effects  
No information available.

Teratogenicity  
No information available.

STOT - single exposure  
Respiratory system

STOT - repeated exposure  
None known

Aspiration hazard  
No information available

Symptoms / effects, both acute and delayed  
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information  
No information available

Other Adverse Effects  
The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity  
The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

<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>4-tert-Butyl catechol</td>
<td>Not listed</td>
<td>LC50 = 0.12 mg/L 96h</td>
<td>Not listed</td>
<td>EC50 = 0.48 mg/L 48h</td>
</tr>
<tr>
<td>Catechol</td>
<td></td>
<td>LC50 = 8.9 mg/L, 96h flow-through (Oncorhynchus mykiss)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 = 3.5 mg/L, 96h flow-through (Pimephales promelas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catechol</td>
<td></td>
<td>EC50 = 174 mg/L 210 min</td>
<td>EC50 = 29.7 mg/L 30 min</td>
<td>EC50 = 620 mg/L 48 h</td>
</tr>
<tr>
<td>Catechol</td>
<td></td>
<td>EC50 = 1.66 mg/L, 48h (Daphnia magna)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence and Degradability  
Persistence is unlikely

Bioaccumulation/ Accumulation  
No information available.

Mobility  
Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>1.98</td>
</tr>
<tr>
<td>Catechol</td>
<td>0.88</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  
UN-No  UN3261
Proper Shipping Name  Corrosive solid, acidic, organic, n.o.s.
Technical Name  (4-TERT-BUTYLCATECHOL)
Hazard Class  8
Packing Group  II
15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>98-29-3</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>X</td>
<td>ACTIVE</td>
<td>TP</td>
</tr>
</tbody>
</table>

Legend:
- **TSCA** - Toxic Substances Control Act, (40 CFR Part 710)
- **X** - Listed
- **'-'** - Not Listed
- **TP** - Indicates a substance that is the subject of a proposed TSCA Section 4 test rule

**TSCA 12(b) - Notices of Export**: Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-tert-Butyl catechol</td>
<td>98-29-3</td>
<td>X</td>
<td>-</td>
<td>202-653-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-11368</td>
</tr>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>X</td>
<td>-</td>
<td>204-427-5</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-02556</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

**SARA 313**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>&lt;=0.5</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazard Categories**: See section 2 for more information

**CWA (Clean Water Act)**: Not applicable

**Clean Air Act**

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depletors</th>
<th>Class 2 Ozone Depletors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catechol</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OSHA - Occupational Safety and Health Administration**: Not applicable

**CERCLA**: Not applicable
4-tert-Butylcatechol

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catechol</td>
<td>100 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65

This product contains the following Proposition 65 chemicals.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catechol</td>
<td>120-80-9</td>
<td>Carcinogen</td>
<td>-</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<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>4-tert-Butyl catechol</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Catechol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</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

16. Other information

Prepared By: Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date: 01-May-2012
Revision Date: 26-Nov-2019
Print Date: 26-Nov-2019
Revision Summary: This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS