1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name 2,4-Dimethylphenol
Product Code SC-230989

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

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

Classification
Acute toxicity - Oral Category 3
Acute toxicity - Dermal Category 4
Skin corrosion/irritation Category 1 Sub-category B
Serious eye damage/eye irritation Category 1
Specific target organ toxicity (single exposure) Category 2
Specific target organ toxicity (repeated exposure) Category 2

Label elements
Signal word Danger
Hazard statements Toxic if swallowed
Harmful in contact with skin
Causes severe skin burns and eye damage
May cause damage to organs
May cause damage to organs through prolonged or repeated exposure

Symbols/Pictograms

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC)
Not applicable

Other Information
Other hazards
Toxic to aquatic life with long lasting effects.

NFPA

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazards</td>
<td>3</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Stability</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazards</td>
<td>3</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
</tr>
</tbody>
</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dimethylphenol</td>
<td>105-67-9</td>
<td>&gt;98</td>
<td>3200 mg/kg (Rat)</td>
<td>1040 mg/kg (Rat)</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

Immediate medical attention is required.

General advice
Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area.

Eye contact

Skin Contact
Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air Call a physician or poison control center immediately If not breathing, give artificial respiration If breathing is difficult, give oxygen

Ingestion
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**
No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

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**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**
None.

**Specific hazards arising from the chemical**

**Specific hazards arising from the chemical**
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

**Hazardous combustion products**
Carbon oxides.

**Explosion data**

**Sensitivity to Mechanical Impact**
No information available.

**Sensitivity to Static Discharge**
No information available.

**Protective equipment and precautions for firefighters**

**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.

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**6. ACCIDENTAL RELEASE MEASURES**

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

**Personal precautions**
Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

**Environmental precautions**
Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

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**7. HANDLING AND STORAGE**
Precautions for safe handling
Advice on safe handling
Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Store at room temperature.
Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Tight sealing safety goggles. Face protection shield.
Skin and Body Protection
Wear protective gloves and protective clothing.
Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations
When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>22 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>212 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>94 °C CC (closed cup)</td>
</tr>
<tr>
<td>Density</td>
<td>1.011 g/cm³</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>1.1%</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>6.4%</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.1 mmHg</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Chemical stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: None under normal processing.
Hazardous polymerization: No information available.
Conditions to avoid: Exposure to air or moisture over prolonged periods.
Incompatible materials: Incompatible with strong acids and bases. Incompatible with oxidizing agents.
Hazardous Decomposition Products: Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation: No data available.
Eye contact: No data available.
Skin Contact: No data available.
Ingestion: No data available.

Information on toxicological effects
Symptoms: No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity: Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Numerical measures of toxicity - Product Information
Unknown acute toxicity: No information available.
The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>ATEmix (oral)</th>
<th>100 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (dermal)</td>
<td>1040 mg/kg</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic life with long lasting effects

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC-230989 - 2,4-Dimethylphenol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Revision date: 26-Apr-2017
2,4-Dimethylphenol  
105-67-9

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dimethylphenol 105-67-9</td>
<td>2.42</td>
</tr>
</tbody>
</table>

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability | No information available.
Bioaccumulation | No information available.
Mobility | No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes | Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment.
Contaminated packaging | Do not reuse container.
Other Information | Waste codes should be assigned by the user based on the application for which the product was used.
US EPA Waste Number | U101

14. TRANSPORT INFORMATION

DOT
UN/ID no | UN2261
Hazard Class | 6.1
Packing Group | II
Proper shipping name | Xylenols, solid
Description | UN2261, Xylenols, solid, 6.1, II, Marine pollutant, POISON
Emergency Response Guide Number | 153

IMDG
UN/ID no | UN2261
Hazard Class | 6.1
Packing Group | II
Proper shipping name | Xylenols, solid
Description | UN2261, Xylenols, solid, 6.1, II, Marine pollutant
EmS-No | F-A, S-A

IATA
UN/ID no | UN2261
Hazard Class | 6.1
Packing Group | II
Proper shipping name | Xylenols, solid
Description | UN2261, Xylenols, solid, 6.1, II

15. REGULATORY INFORMATION
International Inventories
All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC)
ENCS (Japan): Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dimethylphenol</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard No
Sudden release of pressure hazard No
Reactive hazard No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dimethylphenol</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

105-67-9

US State Regulations

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

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dimethylphenol</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>105-67-9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Revision note
No information available
Disclaimer
The information provided in this Material 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 Safety Data Sheet