1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Carbenicillin disodium salt
Cat No.: BP2648-1; BP2648-5; BP2648-250
Synonyms: Fugacillin.; Disodium Alpha-Carboxybenzylpenicillin; Disodium Carbenicillin
Recommended Use: Laboratory chemicals

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

Emergency Telephone Number:
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!
Emergency Overview
May cause allergic respiratory and skin reaction. May cause skin, eye, and respiratory tract irritation.

Appearance: Off-white
Physical State: Solid
Odor: No information available

Target Organs: Respiratory system, Skin

Potential Health Effects

Acute Effects
Principle Routes of Exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>May cause irritation.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause irritation. May be harmful in contact with skin.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract. May be harmful if inhaled. May cause allergic respiratory reaction.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

Chronic Effects
Repeated contact may cause allergic reactions in very susceptible persons.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions: No information available.
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>Disodium [2S-(2.alpha.,5.alpha.,6.beta.)]-6-(carboxylatophenylacetamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate</td>
<td>4800-94-6</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. Immediate medical attention is required.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**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. Immediate medical attention is required.

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

**Notes to Physician**
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

**Flash Point**
Not applicable

**Method**
No information available.

**Autoignition Temperature**
No information available.

**Explosion Limits**

<table>
<thead>
<tr>
<th></th>
<th>Upper</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**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.

| NFPA   | Health | Flammability | Instability | Physical hazards |
|--------|--------|--------------|-------------|------------------|------------------|
|        | 2      | 0            | 0           | N/A              |
6. ACCIDENTAL RELEASE MEASURES

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

Environmental Precautions
Should not be released into the environment.

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
Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage
Keep container tightly closed in a dry and well-ventilated place. Keep refrigerated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

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

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
Off-white

odor
No information available

Odor Threshold
No information available.

pH
No information available.

Vapor Pressure
No information available.

Vapor Density
No information available.

Viscosity
No information available.

Boiling Point/Range
No information available.

Melting Point/Range
No information available.

Decomposition temperature
No information available.

Flash Point
Not applicable

Evaporation Rate
No information available.

Specific Gravity
No information available.

Solubility
No information available.

log Pow
No data available

Molecular Weight
422.1614
9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula

C17H16N2Na2O6S

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NOₓ), Sulfur oxides

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
</table>
| Disodium [2S-
(2.alpha.,5.alpha.,6.beta.]-6-
(carboxylatophenylacetamido)-3,3-
dimethyl-7-oxo-4-thia-1-
azabicyclo[3.2.0]heptane-2-
carboxylate | 10 g/kg ( Rat ) | Not listed | Not listed |

Irritation
No information available.

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
May cause sensitization by inhalation and skin contact

Mutagenic Effects
No information available.

Reproductive Effects
No information available.

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.

Persistence and Degradability
No information available

Bioaccumulation/ Accumulation
No information available

Mobility
No information available

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
Not regulated

TDG
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

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>
</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>No</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</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
Not applicable

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
No information available

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
D2A Very toxic materials
D2B Toxic materials

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date
22-Jul-2010

Print Date
22-Jul-2010

Revision Summary
“***”, and red text indicates revision

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