IDENTIFICATION

MSDS Record Number: 5617501
Product Name(s): BENZOPHENONE
Product Identification: MSDS NUMBER: B1488
                        PRODUCT CODE: B889
                        C.A.S. NUMBER: 119-61-9
Date of MSDS: 2007-05-17
Currency Note: This MSDS was acquired from the supplier on 2007-09-06.

MANUFACTURER/SUPPLIER INFORMATION

Company: MALLINCKRODT BAKER INC

MATERIAL SAFETY DATA

Effective Date: 05/17/07
Supercedes: 05/07/07

==
MSDS MATERIAL SAFETY DATA SHEET
==
From: Mallinckrodt Baker, Inc.
      222 Red School Lane
      Phillipsburg, NJ 08865

Emergency Telephone Number: 908-859-2151
NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

All non-emergency questions should be directed to Customer Service
(1-800-582-2537) for assistance.
J. T. BAKER

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BENZOPHENONE

1. Product Identification
   Synonyms: Diphenylmethane; phenyl ketone; Diphenyl ketone;
              Benzoylbenzene
   CAS No: 119-61-9
   Molecular Weight: 182.22
   Chemical Formula: C13H10O
   Product Codes: B889

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2. Composition/Information on Ingredients

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

SAF-T-DATA™ Ratings (Provided here for your convenience)

<table>
<thead>
<tr>
<th>Health Rating:</th>
<th>3 - Severe (Life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability Rating:</td>
<td>1 - Slight</td>
</tr>
<tr>
<td>Reactivity Rating:</td>
<td>0 - None</td>
</tr>
<tr>
<td>Contact Rating:</td>
<td>3 - Severe</td>
</tr>
</tbody>
</table>

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:
Vapors are irritating to the respiratory tract, causing sneezing, coughing and possible shortness of breath. At high concentrations, dizziness or other narcotic effects may be noted while excessive exposure can produce CNS disturbance, coma and possible fatalities.

Ingestion:
Ingestion causes gastrointestinal disturbances including nausea and vomiting. A potential aspiration hazard: ingestion of significant amounts may cause respiratory depression. Vomiting may cause aspiration into the lungs which may result in chemical pneumonitis.

Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:
Causes irritation to eyes, may be severe with possible corneal damage.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.
5. Fire Fighting Measures

Fire:
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Water may be ineffective.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
AIHA Workplace Environmental Exposure Limit (WEEL):
5 mg/m³, 8-hour TWA

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type N95 or better filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH N 100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A gas/vapor cartridge should be used in addition to the particulate filter (NIOSH type N95 or better filter). If the vapor
concentration alone exceeds the exposure limits, use a supplied air respirator, because warning properties are unknown for these compounds. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White crystals</td>
</tr>
<tr>
<td>Odor</td>
<td></td>
</tr>
<tr>
<td>Persistent rose-like odor</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td></td>
</tr>
<tr>
<td>Insoluble in water</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.11 @ 18C/4C</td>
</tr>
<tr>
<td>pH</td>
<td></td>
</tr>
<tr>
<td>Boiling Point</td>
<td>305C (581F)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>48 - 49C (118 - 120F)</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>1 @ 108.2C (226F)</td>
</tr>
<tr>
<td>Evaporation Rate (BuAc=1)</td>
<td></td>
</tr>
<tr>
<td>% Volatiles by volume @ 21C (70?)</td>
<td>0</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Strong oxidizers.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information:

Oral rat LD50: > 10 gm/kg; skin rabbit LD50: 3535 mg/kg; investigated as a tumorigen, mutagen.

---NTP Carcinogen---

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
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<tbody>
<tr>
<td>Methanone, Diphenyl- (119-61-9)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. Ecological Information

Environmental Fate:
When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material may leach into groundwater. When released into water, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.
Environmental Toxicity:
This material may be toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

13. Disposal Considerations
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.
Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information
Not regulated.

15. Regulatory Information

<table>
<thead>
<tr>
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<th>Korea</th>
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<th>NDSL</th>
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<tr>
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<table>
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<td>Methanone, Diphenyl- (119-61-9)</td>
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<td>No</td>
</tr>
</tbody>
</table>

Chemical Weapons Convention: No
TSCA 12(b): No
CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.
Australian Poison Schedule: None allocated.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:
Health: 1 Flammability: 1 Reactivity: 0

Label Warning:
WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:
Avoid breathing dust.
Avoid contact with eyes, skin and clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention.

Product Use:
Laboratory Reagent.

Revision Information:
MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:
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B1488

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