# Chemical Safety Practices Recommendations

## 7, 12 Dimethylbenz[a]anthracene (DMBA)

### Exposure Hazards (1)

<table>
<thead>
<tr>
<th>Category 1B</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger</td>
<td>Warning</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Toxic</td>
</tr>
<tr>
<td>May Cause Cancer</td>
<td>Harmful if Swallowed</td>
</tr>
</tbody>
</table>

### Response to Exposure

<table>
<thead>
<tr>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalation</th>
<th>Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rinse mouth; do not induce vomiting. Report to OHS.</td>
<td>Protect contaminated skin from UV and sunlight. (2) Wash skin with soap and water for 15 minutes. Rinse eyes for 15 minutes. Report to OHS.</td>
<td>Leave area; go to clean air. Report to OHS.</td>
<td>Report to OHS.</td>
</tr>
</tbody>
</table>

### Special Precautions

1. LATEX OR BUTYL RUBBER GLOVES SHOULD BE USED IF SKIN PAINTING ANIMALS (3)
2. ACETONE WILL DEGRADE AND PENETRATE NITRILE
3. Discard garments as hazardous if contaminated with DMBA.
4. Wash potentially contaminated flesh before allowing UV/sunlight exposure.

### Personal Protective Equipment

- Gloves (Double glove) (Latex or Nitrile) (Butyl or latex rubber if contact with acetone is possible)
- Skin Protection (Suit or Scrubs or Lab Coat)
- Eye Protection (Safety-glasses or Goggles)
- Closed-toe shoes
- Use N100 respirator if engineering controls are not available.

### Engineering Controls

- DMBA powder- Chemical Fume Hood (CFH)(4)
- DMBA solution- CFH or Biosafety Cabinet (Class II, B2 BSC if aerosolized)
- Animal waste and bedding until 1 day after last oral treatment or ten days after last topical treatment - CFH or Class II, B2 BSC

### Animal Handling

- Avoid exposure to animal feces and urine until one day after last systemic treatment. (5)
- Avoid exposure to animal dander and bedding until 10 days after last topical treatment.(6)

### Bedding Disposal

- Dispose of bedding as hazardous material until one day after last oral treatment.
- Dispose of bedding as hazardous material until 10 days after last topical treatment.

### Work Practices

- Empty DMBA containers and unused DMBA must be disposed of as hazardous.
- Skin Painting- Refer to NCI Frederick ACUC Document 34
- Follow LASP SOP 4.003F for preparation, handling, dosing, and disposal of DMBA.

### References:

3. OSHA. Personal Protective Equipment. OSHA; 2003.

Questions or concerns: Please contact EHS, Ted Witte, theodore.witte@nih.gov or 301-846-5860

Reviewed 04/06/2015 These recommendations are not final and may be updated.
7,12 Dimethylbenz[a]anthracene, or DMBA, is a polyaromatic hydrocarbon (PAH) used in a variety of induced carcinogenesis models. DMBA does not occur in nature but functions in the same manner as other PAHs such as Benzo[a]pyrene - an ubiquitous environmental pollutant.

DMBA is activated by the action of ultraviolet light or the enzyme CYP1B1 and creates DNA damage by forming DNA adducts. When administered orally to mice DMBA is cleared from the body very rapidly. When DMBA is applied topically it may take over a week for the DMBA to diffuse through the skin and be excreted.

Questions or concerns: Please contact EHS, Ted Witte, theodore.witte@nih.gov or 301-846-5860
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