### Bioaccumulation Summary:

Dicamba has a low affinity to bind to organic matter and a very low calculated bioconcentration factor. The potential for bioaccumulation of dicamba is rated as low in hazard.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Reference</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulation Factor</td>
<td>Not found</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioconcentration Factor</td>
<td>0.66</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Octanol/Water Partition Coefficient</td>
<td>log Kow = 0.54</td>
<td>5</td>
<td>Low</td>
</tr>
</tbody>
</table>
ACUTE TOXICITY

<table>
<thead>
<tr>
<th>Test Subject</th>
<th>Value</th>
<th>Reference</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammalian (LD50)</td>
<td>566 mg/kg</td>
<td>5</td>
<td>Moderate</td>
</tr>
<tr>
<td>Avian (LD50)</td>
<td>2,009 mg/kg</td>
<td>5</td>
<td>Low</td>
</tr>
<tr>
<td>Honey bee or insect (LD50)</td>
<td>&gt;100 ug/bee</td>
<td>2</td>
<td>Low</td>
</tr>
<tr>
<td>Annelida -worms (LC50)</td>
<td>Not found</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish (LC50)</td>
<td>135 mg/L</td>
<td>2</td>
<td>Low</td>
</tr>
<tr>
<td>Crustacean (LC50)</td>
<td>&gt;100 mg/L</td>
<td>5</td>
<td>Low</td>
</tr>
<tr>
<td>Mollusk (LC50)</td>
<td>Not found</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphibian (LD50 or LC50)</td>
<td>Not found</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acute Toxicity Summary:**

Single-dose toxicity testing of dicamba indicates that it is moderately toxic to mammals and low in toxicity to birds, insects, fish and other aquatic organisms.

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ACUTE TOXICITY - Risk Assessment

<table>
<thead>
<tr>
<th>Subject and Scenario</th>
<th>Dose of Concern</th>
<th>Exposure</th>
<th>Margin of Safety</th>
<th>Route</th>
<th>Reference</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult (mixer) wearing chem. resistant gloves</td>
<td>0.45 mg/kg/day</td>
<td>0.11 mg/kg/day</td>
<td>4.1</td>
<td>Dermal, inhalation +</td>
<td>1</td>
<td>Moderate</td>
</tr>
<tr>
<td>Adult performing yardwork in treated grass</td>
<td>0.45 mg/kg/day</td>
<td>0.0038 mg/kg/day</td>
<td>120</td>
<td>Dermal (skin)</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Toddler playing in treated turf grass</td>
<td>1 mg/kg/day</td>
<td>0.049 mg/kg/day</td>
<td>20.3</td>
<td>Dermal, incidental ingestion</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Toddler ingesting herbicide granules</td>
<td>1 mg/kg/day</td>
<td>&lt; 0.067 mg/kg/day</td>
<td>&gt;15</td>
<td>Ingesting herbicide granules</td>
<td>1</td>
<td>Low</td>
</tr>
</tbody>
</table>

**Acute Toxicity Risk Assessment Summary**

Neurotoxicity was elicited at the lowest dose tested resulting in the EPA placing an additional safety factor (x3) on the acute exposure risk assessments.

The potential exposure to an adult using a backpack sprayer to apply herbicide to 4 acres, at a rate of one pound of active ingredient per acre, would be four times less than the EPA's calculated exposure of concern. These potential exposures are rated as moderate in hazard.

Other human exposure scenarios that were evaluated include: ingestion from hand-to-mouth activities, object-to-mouth activities, soil ingestion, eating granular herbicide, and skin contact with treated turf grass. All of these exposures were at least 15 times less than the EPA's calculated dose of concern and rated as low in hazard.

To evaluate ecological risk after an application, the EPA developed a dose of concern that was 50% of the concentration that was shown to be a lethal dose (to a specific organism). The dose of concern to small birds (20 gram bird weight) was exceeded at application rates equal or greater than 0.75 pounds of active ingredient per acre, when they eat treated short grass. The level of concern was also exceeded for small mammals (35 grams or less) consuming residual chemical on short grasses at application rates greater or equal to 0.75 pounds of active ingredient per acre.

Due to the potential risk for toxicity to adults applying dicamba herbicides, dicamba is rated as moderate in hazard. Applications at rates greater than 0.75 pounds of active ingredient are considered high in hazard to birds and small mammals.
**CHRONIC TOXICITY**

### Degradation Products:
In soil, dicamba breaks down to very simple substances like carbon dioxide and water. Some intermediates structurally related to dicamba are formed during this process. One of the intermediates, 3,6-dichlorosalicylic acid (3,6-DCSA), is adsorbed to soil much more strongly than is dicamba. Very little information is available on the toxicity of these intermediates (Reference 7).

### Comments:
Severe eye irritant, skin irritant, and was initially considered a skin sensitizer but the EPA re-evaluated the decision and now does not consider dicamba a skin sensitizer (References 2 and 7).

### References