Chemical Safety Practices Recommendations
Sorafenib Tosylate (Nexavar, BAY-43-9006)

**Exposure Hazards (1, 2)**

- **Category 2 Warning**
  - Germ Cell Mutagenicity
  - Suspected of causing genetic defects

- **Category 2 Warning Toxic**
  - May cause damage to kidneys, liver, reproductive organs, skin, bones, teeth through prolonged or repeated exposure.

- **Category 1B Danger**
  - Toxic to Reproduction
  - May Damage Fertility or the Unborn Child.
  - May Cause Harm to Breast Fed Children

**Response to Exposure**

<table>
<thead>
<tr>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalation</th>
<th>Injection</th>
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<tbody>
<tr>
<td>Rinse mouth; do not induce vomiting. Report to OHS.</td>
<td>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>
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**Special Precautions**

- Pregnant women should be extra cautious when working with Sorafenib. (3)
- Discard garments as hazardous if contaminated with Sorafenib.

**Personal Protective Equipment**

- Gloves (double) (Latex or Nitrile)
- 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**

- Sorafenib powder- Chemical Fume Hood (CFH) (4)
- Sorafenib solution- CFH or Biosafety Cabinet (Class II, B2 BSC if aerosolized)
- Animal waste and bedding until 10 days after last treatment- CFH or Class II, B2 BSC

**Animal Handling**

- Avoid exposure to animal waste/tissue until 10 days after last treatment. (5, 6)

**Bedding Disposal**

- Dispose of bedding as hazardous until 10 days after last treatment.

**Work Practices**

- Empty Sorafenib containers and unused Sorafenib must be disposed of as hazardous.
- Follow LASP SOP 4.003F for preparation, handling, dosing, and disposal of Sorafenib.

**References:**

2. Limited BNZ. Nexavar Data Sheet. 2014.

Questions or concerns: Please contact EHS, Ted Witte, theodore.witte@nih.gov or 301-846-5860
Reviewed 03/31/2015 These recommendations are not final and may be updated.
Sorafenib Tosylate is an orally available multikinase inhibitor used to treat renal, hepatic, and thyroid carcinoma. Sorafenib reduces proliferation of malignant cells and angiogenesis by inhibiting the activity of B&C-RAF, VEGFR-2&3, and PDGFRB as well as other kinases.

Sorafenib is primarily excreted through the feces as unchanged drug and oxidized or glucuronidated metabolites. Several studies indicate that the clearance of Sorafenib from mice is much more rapid than from humans (half-life 2-4 hours vs. 24-48 hours) but there is insufficient data to state that it is cleared from the animals in less than ten days. The hazard period will be updated as more information becomes available.

_in vitro_ assays indicate that Sorafenib is clastogenic (potentially mutagenic) at cytotoxic concentrations. The carcinogenic potential of Sorafenib has not been experimentally determined.

Sorafenib is a reproductive hazard at exposures less than the therapeutic doses and may be transferred in the breast milk. Pregnant women should exercise caution when working with or around the drug.

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