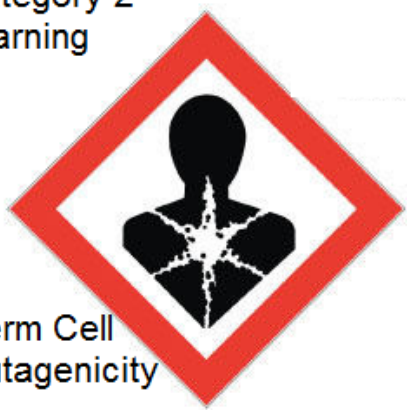
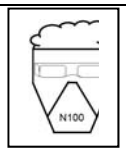
Chemical Safety Practices Recommendations
Sorafenib Tosylate (Nexavar, BAY-43-9006)

Exposure Hazards (1, 2)

Category 2 Warning	Category 2 Warning Toxic	Category 1B Danger
		
Suspected of causing genetic defects	May cause damage to kidneys, liver, reproductive organs, skin, bones, teeth through prolonged or repeated exposure.	May Damage Fertility or the Unborn Child. May Cause Harm to Breast Fed Children

Response to Exposure

Oral	Dermal	Inhalation	Injection
Rinse mouth; do not induce vomiting. Report to OHS.	Wash skin with soap and water for 15 minutes. Rinse eyes for 15 minutes. Report to OHS.	Leave area; go to clean air. Report to OHS.	Report to OHS.

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:

1. Sorafenib MSDS [Internet]. CaymanChemicalCompany. 2014 [cited 03/27/2015]. Available from: https://www.caymanchem.com/app/template/Home.vm.
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3. NIOSH. NIOSH list of antineoplastic and other hazardous drugs in healthcare settings 2014. Cincinnati, OH: National Institute for Occupational Safety and Health, DHHS (NIOSH), U.S. Department of Health and Human Services CfDCaP; 2014 September 2014. Report No.: 2014-138 Contract No.: 2014-138.
4. National Research Council Committee on Prudent Practices in the L. The National Academies Collection: Reports funded by National Institutes of Health. Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards: Updated Version. Washington (DC): National Academies Press (US)
National Academy of Sciences.; 2011.
5. Pawaskar DK, Straubinger RM, Fetterly GJ, Hylander BH, Repasky EA, Ma WW, et al. Physiologically based pharmacokinetic models for everolimus and sorafenib in mice. Cancer chemotherapy and pharmacology. 2013;71(5):1219-29.
6. Tang SC, de Vries N, Sparidans RW, Wagenaar E, Beijnen JH, Schinkel AH. Impact of P-glycoprotein (ABCB1) and breast cancer resistance protein (ABCG2) gene dosage on plasma pharmacokinetics and brain accumulation of dasatinib, sorafenib, and sunitinib. The Journal of pharmacology and experimental therapeutics. 2013;346(3):486-94.

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.*

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

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.

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