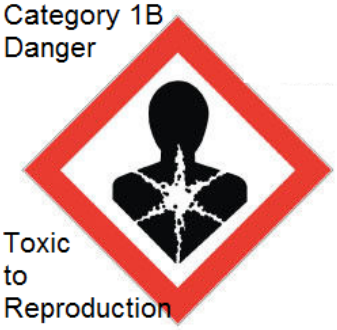
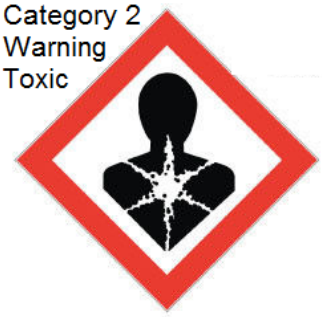
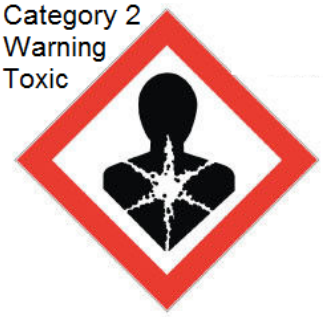
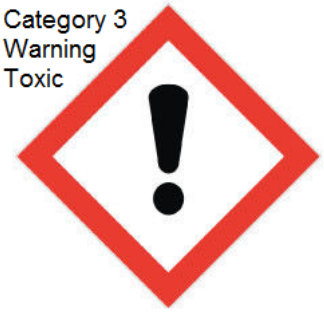
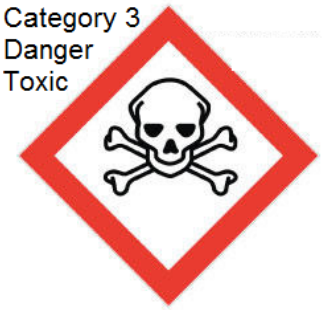
Chemical Safety Practices Recommendations
Dasatinib (Sprycel, BMS-354825)

Exposure Hazards (1, 2)

Category 1B Danger  May Damage Fertility or the Unborn Child	Category 2 Warning Toxic  Single Exposure May Cause Damage to Uterus, Testicles, Ovaries	Category 2 Warning Toxic  Repeated or Chronic Exposure May Cause Damage to Uterus, Testicles, Ovaries
Category 3 Warning Toxic  May Cause Respiratory Irritation	Category 3 Danger Toxic  Toxic if Swallowed	Category 2 Warning Irritant  Causes Serious Eye Irritation and Skin Irritation

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 Dasatinib. (3) Discard garments as hazardous if contaminated with Dasatinib. CYP3A4 inhibitors (e.g. Grapefruit juice) may increase the effects of Dasatinib exposure.(4)
Personal Protective Equipment	Gloves (Double glove) (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	Dasatinib powder- Chemical Fume Hood (CFH) (5) Dasatinib solution- CFH or Biosafety Cabinet (Class II, B2 BSC if aerosolized)  Animal waste and bedding until 10 day after last treatment- CFH or Class II, B2 BSC
Animal Handling	Avoid exposure to animal feces until 10 days after last treatment. (6)
Bedding Disposal	Dispose of bedding as hazardous material until 10 days after last treatment.
Work Practices	Empty Dasatinib containers and unused Dasatinib must be disposed of as hazardous. Follow LASP SOP 4.003F for preparation, handling, dosing, and disposal of Dasatinib.

Questions or concerns: Please contact EHS, Ted Witte, theodore.witte@nih.gov or 301-846-5860
Reviewed 03/16/2015 *These recommendations are not final and may be updated.*

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References:

1. Dasatinib MSDS [Internet]. SantaCruzBiotech. 2014 [cited 01/12/2015]. Available from: www.scbt.com.
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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. van Erp NP, Gelderblom H, Guchelaar H-J. Clinical pharmacokinetics of tyrosine kinase inhibitors. Cancer Treatment Reviews. 2009;35(8):692-706.
5. 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.
6. Christopher LJ, Cui D, Li W, Barros A, Jr., Arora VK, Zhang H, et al. Biotransformation of [14C]dasatinib: in vitro studies in rat, monkey, and human and disposition after administration to rats and monkeys. Drug metabolism and disposition: the biological fate of chemicals. 2008;36(7):1341-56.

Dasatinib is an antineoplastic drug of the Tyrosine Kinase Inhibitor family and is used to prevent the proliferation of cancers such as Chronic Myelogenous Leukemia. Tyrosine Kinase Inhibitors function by inhibiting the activation of growth receptors in malignant cells. Unfortunately, these growth receptors are also present in healthy cells and their inhibition can harm tissues which normally regenerate rapidly.

Dasatinib is metabolized by CYP 3A4 and the consumption of CYP 3A4 inhibitors will prolong the presence of Dasatinib in the body. ~90% of Dasatinib will be cleared from the body within a week, primarily in the feces but also in the urine. A significant portion of the drug will be excreted unchanged and therefore the animal waste should be treated as hazardous.

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

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