

Hazardous Chemicals, Activities & Devices: (Requires Risk Assessment Form (3))

- **Risk Assessment:** Conduct a “Risk Assessment” to evaluate the potential dangers associated with your project. See [Intel ISEF Guidance for Risk Assessment](#) if you need help with this process.
- Projects involving the use of hazardous chemicals, activities, or devices **MUST** be reviewed by the local SRC prior to experimentation.
- Always research and contact the related state agency for documented permission and legal requirements for any hazardous chemicals, activities, or devices. Document this contact in your project notebook and cite the contact in your bibliography.
- **Hazardous Chemicals:** When doing a risk assessment the type and amount of exposure to a chemical must be considered. For example, an individual’s allergic and genetic disposition may have an influence on the overall effect the chemical may have.
 - Describe in detail the chemical concentrations and drug dosages of substances to be used (if applicable).
 - Describe the safety precautions and procedures your plan to implement to minimize risk. In order to do this, the student researcher **MUST** locate, copy, cite, and refer to **Material Safety Data Sheets (MSDS)** to ensure that proper safety precautions are taken.
 - **MSDS citations MUST be made in the Bibliography for any substance classified by OSHA as a potential health or physical hazard (see the FLINN SCIENTIFIC catalog or www.flinnsci.com).**
 - Have a copy of the MSDS in your Project Folder.
 - Some MSDS sheets rank the degree of hazard associated with a chemical. This rating may assist students, adult sponsors, and designated supervisors in determining risk associated with the use of a chemical.
 - Material Safety and Data Sheets (MSDS) may be collected by your laboratory and should be available from the manufacturer. The internet also has a range of free resources:
 - <http://www.flinnsci.com/sections/safety/safety.asp> - A directory of MSDS sheets from Flinn Scientific Inc. that includes a ranking of hazard level and disposal methods
 - <http://www.ilpi.com/msds/index.html> - A listing of numerous sites that have free downloads of MSDS sheets
 - **Chemical terms you may encounter:**
 - Toxicity – the tendency of a chemical to be hazardous to health when inhaled, swallowed, injected or in contact with the skin

- Reactivity - the tendency of a chemical to undergo chemical change
- Flammability – the tendency of a chemical to give off vapors which readily ignite when used under normal working conditions
- Corrosiveness – the tendency of a chemical, upon physical contact, to harm or destroy living tissues or physical equipment.

Disposal: Discuss the methods of disposal you will use to safely and legally dispose of any chemicals, drugs, or devices. If applicable, the student researcher must incorporate in the research plan any disposal procedures required by federal and state guidelines.