Appendix F Instructions

Column 1- Agents: List all of the chemicals, radioactive chemicals, and biological hazards (including rDNA, cells,etc.) given to animals.

Column 2- Dose: self-explanatory

Column 3- Volume: volume given per dose

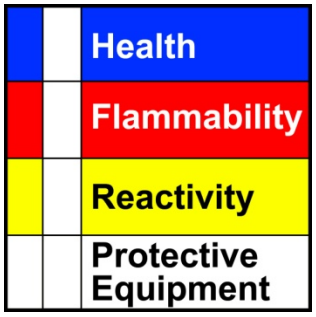
Column 4- Vehicle: the substances in which the chemical given is mixed. Remember to include the vehicle in Appendix F, as well.

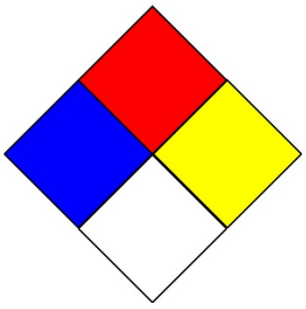
Column 5- Route: The route of delivery for the drug (i.e., IV, ICV, IM, IP, PO, etc).

Column 6- Frequency: How often the drug will be given.

Column 7- NDC or CAS #: All pharmaceuticals have an NDC#. This can be found on the bottle and/or box containing the pharmaceutical. If the chemical does not have an NDC#, please include the CAS# in place of NDC#. The CAS# can be found on the Material Safety Data Sheet (MSDS). Laboratories are required to maintain a copy of the MSDS sheet for all chemicals (whether hazardous or not). This copy is to be accessible to all laboratory personnel. Many MSDS forms can be found at the UMMC Intranet webpage under "Hot Spots".

Column 8- Hazard?: To determine if something is considered a hazard, review the Material Safety Data Sheet (MSDS). There are several ways to determine if a substance is hazardous. First, there may be a Hazardous Materials Information System (HMIS) label or listing on the MSDS. This label should look like one of the following:



These rectangles or diamonds will have numbers in them from 0 to 4 with 0 being no hazard and 4 meaning very hazardous. If any box has a number other than "0" in it, the substance is deemed to have some acute hazardous properties. Some MSDS do not have boxes or diamonds but merely list the HMIS numbers as shown below:

**HMIS Classification**
**Health Hazard**: 1
**Flammability**: 0
**Physical hazards**: 0

The HMIS classification deals primarily with acute risks. For chronic risks, the investigator needs to look at the Toxicology section of the MSDS. This is typically Item 11 on most MSDS. There may be a listing for LD50 or maximally tolerated dose and possibly information regarding the type of hazard the chemical is such as carcinogen, teratagen, mutagen, toxic, asphyxiant, etc. If LD50 is given, the definition of "toxic" has been established as follows:

$LD_{50}$< 50mg/kg (oral rat)
$LC_{50}$< 200ppm/1hr or 2000mg/$m^3$/1 hr (inhalation)
$LD_{50}$< 200mg/kg (skin contact)

If any chemical exceeds these levels, they are considered hazardous.

Item 1: Describe any potential adverse side effects that may result in the animal from the administration of these materials.

Item 2: Describe any potential adverse side effects or health risks to humans. This information can usually be found on the MSDS sheet in Item 12 (Toxicological Information). Usually the Toxicological Information section of the MSDS will say if the chemicals are known carcinogens, toxins, teratagens, mutagens, or aphyxiants.

Item 3: List methods for protection of personnel and containment of the hazard. This information can usually be found on the MSDS sheet (usually in Item 8: Exposure Control/Personal Protection).

Item 4: Describe decontamination procedures and means of disposal of contaminated animal carcasses and waste. Information regarding disposal of many chemicals can be found on the MSDS for that chemical. When this information is not found on the MSDS, contact Environmental Health and Safety to determine the best solution for decontamination and disposal.

Item 5: What is the time frame that animals and/or caging is considered hazardous? For many chemical hazards, there are known and/or published time frames during which the animals/caging are considered hazardous. If the time frames cannot be found using internet searches or other resources available, please consult Environmental Health and Safety so a plan can be made to best protect any personnel that might come in contact with the animals and so wastes can be disposed of properly.

Please remember that there is not a standard MSDS format, therefore the suggested item numbers listed above may not always contain the information needed. If you have any questions please contact Environmental Health and Safety.