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## HAZARDOUS MATERIAL FACT SHEET

### Mixed (Radioactive and Chemical) Waste Disposal

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Mixed waste means low-level radioactive waste as identified in Title 180, Nebraska Administrative Code that also contains EPA regulated hazardous waste as identified in Title 128, Nebraska Administrative Code. Mixed waste must be handled by one of the following methods:

- Mixed waste with radionuclides that have radioactive half-lives less than 90 days generated in satellite accumulation. Radionuclides with half-lives less than 90 days include:

➤ Ca-45	162.7	days	➤ P-33	25.40	days
➤ Cr-51	27.70	days	➤ S-35	87.44	days
➤ I-123	13.13	hours	➤ Sc-47	3.42	days
➤ I-125	60.14	days	➤ Sr-89	50.55	days
➤ I-131	8.04	days	➤ Tc-99m	6.02	hours
➤ In-111	2.83	days	➤ Y-90	64.10	hours
➤ P-32	14.29	days			

Mixed waste in this category must be segregated by radionuclide and held to decay for 10 half-lives. The mixed waste is then surveyed with an appropriate instrument to ensure background radiation levels. Complete a chemical collection tag and contact EHS to ensure this waste is handled and disposed of according to applicable regulations based on any hazardous constituent(s).

- Mixed wastes with radionuclides that have radioactive half-lives greater than 300 days are collected by EHS. Radionuclides with half-lives greater than 300 days include:

➤ H-3	12.28 years,	➤ C-14	5730 years
➤ Zn-65	244.40	days	

Mixed waste in this category must be tagged with both a radioactive and chemical collection tag. Contact EHS for pick-up and disposal

Mixed waste is extremely expensive to dispose of due to the limited number of TSDFs permitted to receive radioactive materials. UNMC encourages mixed waste generators to continue exploring all viable options to avoid or minimize its generation.

#### **Minimization should address:**

1. Process changes that can be made to reduce or eliminate mixed wastes;
2. Methods to minimize the volume of regulated waste through better segregation of materials;
3. Substitution of non-hazardous for hazardous components; and
4. Substitution of shorter half-life radionuclides for longer half-life radionuclides (i.e., I-131 for I-125).
5. Use of satellite accumulation to allow for radionuclide decay. Contact EHS at (402) 559-6356 for assistance in managing mixed waste in satellite accumulation areas.