**Disposal of Chemical Waste Guideline**

(*Adapted with permission from Concordia College – S Hoffmann*)

Always refer to the Safety Data Sheet for guidelines on safe disposal of the chemical.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Table 1  Is the waste Hazardous or Non-Hazardous, Organic or Inorganic, Paint? | | | | | | | |
| Non-Hazardous Waste | Hazardous Organic Waste | | | Hazardous Inorganic Waste | | | Paint |
| Go to Table 2 | Go to Table 3 | | | Go to Table 4 | | | Go to Table 5 |
| Table 2  Non-Hazardous Waste  Is the waste Solid or Liquid? | | | | | | | |
| Solid  Wrap & place in the garbage bin  *e.g. steel wool* | | | Liquid  Is the liquid already dissolved in water or miscible in water?  *(miscible means the two liquid mix together completely)* | | | | |
| Yes  Wash down the sink  *e.g. salt solution* | | No  Absorb onto Perlite or kitty litter and wrap & place in the garbage bin e*.g. vegetable oil* | | |
| Table 3  Hazardous Organic Waste  Is the liquid a halogenated compound? *(i.e. contain chlorine, bromine, iodine or fluorine)* | | | | | | | |
| YES  Place in a container labelled “Halogenated Organic Waste” and retain for chemical collection | | | No  Place in a container labelled “Non-Halogenated Organic Waste” and retain for chemical collection | | | | |
| Table 4  Hazardous Inorganic Waste  Does the waste contain heavy metals? *(ie antimony, barium, beryllium, bismuth, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, tin, zinc)* | | | | | | | |
| Yes  Is only one substance present? | | | No  Is the pH less than 7? | | | | |
| Yes | | No | Yes | | | No | |
| Consider recrystallisation | | Treat solution.  See below for treatment details | Add sodium hydroxide until pH measures 8-10 and wash down the sink | | | Wash down the sink | |

|  |
| --- |
| Treatment for Heavy Metal Waste Solutions |
| Copper  Add sodium carbonate or sodium hydroxide to precipitate the insoluble metal salt. The clear solutions can be decanted and washed down the sink. The solid precipitate should be placed in a container labelled ‘heavy metal waste’ and retained for chemical collections  OR  Displace from the solution using steel wool or waste iron. The solid copper can be wrapped and placed in the garbage bin. The clear decanted solution can be washed down the sink. |
| Silver  Add solid sodium chloride, stir and transfer to bottle labelled ‘Silver waste’. When settled the clear solution above the precipitate may be washed down the sink. |
| Other Heavy Metals or Mixtures of Heavy Metals  Add sodium carbonate or sodium hydroxide to precipitate the insoluble metal salt.  Stir and transfer the mixture to a bottle labelled ‘heavy metal waste’. When settled the clear solution above the precipitate may be washed down the sink. |

Chemical waste bottles/containers should be stored in an appropriate cupboard in the chemical storage area.

For use during lesson, the flammable waste containers should be kept in the fume cupboard.

If any of these waste bottles/containers start to produce hydrogen sulphide gas (rotten egg gas) add sufficient sodium hydroxide to make the solution basic (pH7). Leave in the fume cupboard with the lid off until the production of gas ceases.

Chemical waste bottles/containers should be collected annually by a certified company such as Cleanaway.

**Table 5: Disposal of Paint and paint related products (adapted from EPA)**

|  |  |  |
| --- | --- | --- |
| **All paint, stain, varnish, lacquer, shellac, etc.** | Lead, oil or water-based | In liquid form—dispose through chemical waste company  In dried form—wrap in newspaper & place in the waste bin |
| **Thinners, paint strippers** | Solvent-based | Dispose through chemical waste company |
| **Clean-up fluid** | Solvent-based e.g. turpentine | Reuse—let paint settle and decant off clean fluid to a new container  Disposal—through chemical waste company. |
| Water | Leave to dry or pour over vegetated area |
| **Used painting containers** | Paint tins or clean-up containers | Let dry, peel off dried paint if possible and re-use container  Relatively clean used painting containers can be placed in the recycling bin |
| **Paint scrapings** | Lead, oil or water-based | Wrap in newspaper and place in the waste bin |