CHEM 261 October 5, 2020

**Naming of Alkyl Halides = Haloalkanes**

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**Structure and Nomenclature**

1. Find longest chain with largest number of branches
2. Number from end so as to give 1st halogen the lowest number
3. Name prefix with “halo” (chloro, bromo, iodo, fluoro) OR name alkyl and add halide (chloride, bromide, iodide, fluoride) as the suffix

**Examples:**







**Applications of Haloalkanes**

1.) Halothane (anesthetic)



1,1,1-trifluoro-2-bromo-2-chloroethane

2.) Freon = refrigerants/coolants

 

Freon 12 Freon 11

3.) 1,1-dibromo-2-chloroethane = male contraceptive (sperm count drops down to zero from 100 million/mL)



**Physical Properties of Alkyl Halides:**

* Governed primarily by dipole-dipole interactions, more polar than hydrocarbons/alkanes.
* High MP and BP relative to hydrocarbons of similar molecular weight
* Good solvents for organic compounds e.g. methylene chloride (CH2Cl2) and chloroform (CHCl3) are very common.
* If % composition ≥ 65% halogen by weight, then more dense than water (ρ > 1.0 g/cm3)
* Immiscible (insoluble) in H2O, which floats on top of the halide