in-class exercise #9

Alkyl Halide Naming EXERCISES

 Organic Chem I Alfred State College

 1) What are the IUPAC names for: ***(ozone killers)***

CC14 CHCl3 **CH2Cl2**  CFC13 **CF2 C12**

**CARBON TET(RACHLORIDE) CHLOROFORM METHYLENE CHLORIDE FREON 11 (REFRIGERANT) FREON 12**

 **(SPRAY CAN PROPELIANT)**

2) What are the common, IUPAC(substitutive) and functional group names for:

 (a) (b) (c) (d)

 **C**

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 **C-C-C C-C-C-I** Br-C-C-C-C C-C-C-C

 | | |

 Cl C F

common

functional

substitutive (IUPAC)

(~standard method)

exer cise #9 (continued)…naming alkyl halides chem. 3514 orgaznic I

3) What are the functional and substitutive IUPAC names for:

 functional substitutive

a)



b)







c)

d)

 Answers:

1) CC14 CHCl3 CH2CI2 CCI3F CF2C12

tetrachloromethane trichloromethane dichloromethane trichlorofluoromethane chlorodifluoromethane

 **C**

 |

 **C-C-C C-C-C-I** Br-C-C-C-C C-C-C-C

 | | |

 Cl C F

2)

common tertbutyl chloride isobutyl iodide n-butyl bromide sec-butyl fluoride

functional 1,1-dimethylethyl chloride 2-methylpropyl iodide butyl bromide 1-methylpropyl fluoride

substitutive 2-chloro-2-methylpropane 1-iodo-2-methylpropane 1-bromobutane 2-fluorobutane

3)

 FUNCTIONAL SUBSTITUTIVE (std IUPAC)



 1-ethyl-5-methylpentyl fluoride 5-fluoro-2-methylheptane





 1,4-dimethylhexyl fluoride 2-fluoro-5-methylheptane (halogens and R are equal in rank…go for minimum count to substituent )

 2-ethylcyclohexyl fluoride 1-ethyl-2-fluorocyclohexane (number with lowest # for substituent first occurring in alphabet)



 2-ethylcyclohexyl bromide 1-bromo-2-ethylcyclohexane