**LABORATORY 1: CHEMICAL HANDBOOKS \_\_\_\_/25**

**A “*DRY LAB* “**

**DUE Thu in lab 9/1 in Lab**

**YOUR NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PART 1: HANDBOOK LORE (13 pts/ 1 pt each)**

1. **Which handbook is most useful for telling us about a compound’s history and biological hazards?**

1. **what does the abbreviation for nD stand for and what is it, physically ?**
2. **What does `D’ stand for in nD ?**
3. **What does the abbreviation `dec’ mean under the melting point column in the CRC ?**
4. **What does solubility “ (1), (2)…etc. refer to in the solubility column in the CRC ?**
5. **Name three different ways to `find a particular organic chemical in the CRC (76th and beyond)**

**1)**

**2)**

**3)**

**g) What is the difference between specific gravity and density?**

**h) which compound reference number stays constant through the various editions of the CRC**

1. **At what pressure is the normal boiling point measured? (include pressure units)**

**j) What is meant when a boiling point is written as in the example 120oC 0.10  ?**

**k) Which ordering system dominates the CRC organic chemical listing:**

**i) common name, alphabetic ii) IUPAC name, first substituent alphabetic**

**iii) CAS number in ascending order iii) functional name alphabetic, then substituents alphabetic**

**PART 2: LOOKING UP THE COMPOUND EXERCISE (12 points)**

**STAPLE THE UNKNOWN COMPOUND YOU DREW TO THIS SHEET !!!!!**

**List the following:** (1 point each/5 points total)

**The CAS registry number (RN) for the compound:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(found in the 76th edition and beyond or via use of the Internet)

**If available in the handbook, list :**

**normal melting point, oC \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**nD and reference temperature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**The CRC edition # and internal CRC reference #:** \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**for your compound CRC edition internal reference #**

**Place the answers to the specific question for your unknown below: (8 points)**

**1,2 dihydroxybenzene (2-HOC6H4OH)**

***specific question:* what is it’s common name ?**

**β-carotene**

***specific question:* what is its empiric formula ?**

**caproic acid (C5H11COOH)**

***specific question:* what is its chemical structure ?**

**1,3, 5 trinitrotoluene**

***specific question:* what is this compound’s empiric formula and common name ?**

**salicylic acid acetate**

***specific question:*** **what is this compound’s common name and chief use** ?

**C2H5OH**

***specific question*: what is the common name for this compound ?**

**Acetanilide**

***specific question:* what is the empiric formula and chemical structure of this compound ?**

**1,2-ethandiol**

***specific question:* what is the common name and common use of this compound ?**

**Benzamide N,N-diethyl-3-methyl-**

***specific question*: what is the common use of this compound and its more common name ?**

**p-dichlorobenzene**

***specific question:* what is the common use of this compound and its IUPAC name ?**

**ethanoic acid**

***specific question:* what common, household product contains this compound and what is its common name ?**

**methanal**

**specific question: what is a common use of methanal and what is its more common name ?**

**Pyridine 3-(1-methyl-2-pyrrolidinyl)-.(S)-**

***specific question*: what is the common name of this compound and chemical structure ?**

**Cholest-5-en-3-ol (3β) :**

***specific question* : what is the common name of this compound and its chemical structure ?**

**freon-12:**

***specific question: what is the empiric formula and common use of this compound ?***

**1,2,3 propanetriol trinitrate:**

***specific question: what is the common name and outstanding use of this compound ?***

**skatole:**

***specific question : what is the geometric structure and most striking characteristic of this compound ?***

**2-propanone:**

***specific question: what is the common name and a common use of this compound ?***

**[1R-(exo,exo)] 3-(benzoyloxy)-8-methyl-8-Azabicyclo[3.2.1]octane-2-carboxylic acid:**

***Specific question: what is the common name and physiological effect of ingesting this compound ?***

**(−)-(6a*R*,10a*R*)-6,6,9-trimethyl-3-pentyl-6a,7,8,10a-tetrahydro-6*H*-benzo[*c*]chromen-1-ol:**

***Specific question: what is a common, natural source of this compound ?***

**17-hydroxy-Androst-4-en-3-one**

***Specific question: what is the common name of this compound and where is natural source of it located ?***

***N*-methyl-1-phenylpropan-2-amine:**

***Specific question: what is the common name of this compound and what is its most common use?***

***R)*-4-(1-hydroxy-2-(methylamino)ethyl)benzene-1,2-diol**

***Specific question: What is the common name of this compound and what is its biological purpose?***