

Examrace

Environmental Science: Numerical Questions – Conversion CFC to Formula

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Type I - Number to Formula

1. Chemical formula for CFC-113 is

1. CCl_2F_2
2. CCl_3F_3
3. $C_2Cl_3F_3$
4. CCl_2F_3

Answer: (C) $C_2Cl_3F_3$

Explanation:

- Step 1 – Add 90
- Step 2 – Calculate the number of Carbon atoms, Hydrogen atoms and Fluorine atoms
- Step 3 – write the formula using the C, H & F atoms

Step 1: $90 + 113 = 203$

Step 2:

- Number of Carbon atoms = 2
- Number of Hydrogen atoms = 0
- Number of Fluorine atoms = 3

Step 3: The CFC formula will be $C_2F_3Cl_3$

Type II – Formula to Number

2. What is the CFC number for the halocarbon $CCl_2F_2CF_3$?

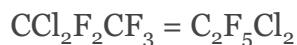
1. 115
2. 132
3. 134
4. 143

Answer: (A) 115

Explanation:

To calculate the CFC number:

- Consider the formula in the number of carbon, hydrogen, fluorine (do not include chlorine)
- Subtract the number with 90
- The number obtained thereafter is the formula.



Step 1:

- Number of Carbon atoms = 2
- Number of Hydrogen atoms = 0
- Number of Fluorine atoms = 5

So, the number obtained is 205 (as we do not consider Chlorine atoms)

Step 2: $205 - 90 = 115$

Step 3: The CFC number will be CFC 115

Type III – Formula for Halons

3. The halon H – 1211 has the following chemical composition:

1. CF_2ClBr
2. CCl_2FBr
3. CCl_2F_2
4. CBr_2ClF

Answer: CF_2ClBr

Each halon has a number system of abcd where.

a - Is the number of carbon atoms

b - The number of fluorine atoms

c - The number of chlorine atoms

d - The number of bromine atoms

-Mayank

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