

Name.....

AVE MARIA SECONDARY SCHOOL KABUJOGERA S.3 CHEMISTRY  
(MOLE CONCEPT)

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1. Weed master is a common herbicide used to kill weeds in Uganda. Its chemical (I.U.P.A.C) name is (3,6 -dichloro -2- methoxy benzoic acid; 2-(2,4 -dichlorophenoxy) acetic acid; N-methylmethanamine). Weed master consists of 45.1% carbon, 4.88% Hydrogen, 26.7% chlorine, 5.3% nitrogen, and 18.05% Oxygen.

**(a) Determine the;**

(i) Empirical formula of weed master. (C=12, H=1, Cl =35.5, O= 16, N=14)

(ii) Molar mass of weed master. (Vapour density=266)

(iii) Molecular formula of weed master

(b) The concentrated solution of weed master packed in a one litre bottle is 20Moles per litre of solution. If the mixing ratio of weed master to volume of water is  $120\text{cm}^3$  to 20litres of water to make spray solution. Determine the number of;

(i) Mole used to make up 20litres of spray solution.

(ii) Grams used to make up 15litres of spray solution.

(iii) Molecules of weed master in  $50\text{cm}^3$  of concentrated solution. (*From Avogadro's principle, 1mole of a substance contains  $6.02 \times 10^{23}$  particles*).

(c) If 20litres of spray solution can be used to spray an area of 25 yards squared.

**Determine the;**

(i) Volume of weed master (bottled) required for spraying an area of 8000 square yards.

(ii) Number of bottles required by the farmer to spray area of 8000 square yards.

(iii) Number of moles of weed master in the bottles in c(i) above.

(iv) Number of grams of weed master in the bottles in c(ii) above.

END

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