## Answer on Question#49174 – Chemistry – Other

What is the empirical formula and molecular formula for lactic acid if the percent composition is 40.00% C, 6.71% H, 53.29% O, and the approximate molar mass is 90 g/mol?

## **Solution:**

W(C)=40.00%; W(H)=6.71%; W(O)=53.29%;

$$v$$
 (C):  $v$  (H):  $v$  (O)=  $\frac{W(C)}{M(C)}$ :  $\frac{W(H)}{M(H)}$ :  $\frac{W(O)}{M(O)}$  =3.33 : 6.71 :3.33 = 1 : 2 :1;

CH<sub>2</sub>O (the empirical formula);

 $M(CH_2O)=30 \text{ g/mol}; M(C_xH_yO_z) = 90 \text{ g/mol};$ 

C<sub>3</sub>H<sub>6</sub>O<sub>3</sub> (the molecular formula);

**Answer:** CH<sub>2</sub>O (the empirical formula); C<sub>3</sub>H<sub>6</sub>O<sub>3</sub> (the molecular formula).

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