Answer on Question #81852, Chemistry / General Chemistry

A solution is made by dissolving 13.9 g of iron(III) acetate, $Fe(CH_3COO)_3$, in enough water to make exactly 250.0 ml of solution. Calculate the molarity of each species:

$Fe(CH_3COO)_3$ (mol/l);

Fe^{3+} (mol/l);

CH_3COO^- (mol/l).

Solution

Find the amount of iron(III) acetate:

$v = \frac{13.9}{233} = 0.06$ (mol)

If there is 0.06 mol in 250 ml, so there is 0.24 mol in 1 L.

1 mole of $Fe(CH_3COO)_3$ contains 1 mole of Fe^{3+} and 3 moles of CH_3COO^-

Answer

$Fe(CH_3COO)_3$ (mol/l): **0.24**;

Fe^{3+} (mol/l): **0.24**;

CH_3COO^- (mol/l): **0.72**.