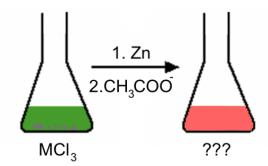| *1.1*	*1.2*	*Total*
5	5	10

Mystery Compound (CODS-CT Topic Test 2 #1)

A green solution of a metal (III) chloride is treated with zinc until the solution turns blue. Then, a solution of Sodium Acetate is added to the blue solution. A red precipitate **X** with a molar mass of 376 g/mol settles out of the solution.

When a further solution of dilute sodium thiosulfate is added, no color change is observed, and the precipitate does not significantly dissolve. However, when conc. aqueous HCl is added, the precipitate redissolves.

A copper analogue of compound **X** exists. Under perfect stoichiometry, 12.11 g Cu metal can form 38.02 g of the copper analogue.

1.1 Determine the formula of compound **X** and its copper analogue.
1.2 Given that compound **X** is nonionic, propose a reasonable structure. Note that the geometry around the metal center is octahedral.

Proposed by Anugrah C.