CLAIMS

1. A method for producing methionine and 2-hydroxy-4-(methylthio)butanoic acid, comprising contacting an oxide catalyst containing cerium, 3-(methylthio)propionaldehyde, a compound containing cyanide ion, ammonia or a compound containing ammonium ion, and water with each other, wherein the amount of the oxide catalyst containing cerium is, in a cerium amount, 0.02 to 1.5 moles, per mole of 3-(methylthio)propionaldehyde.

2. The method according to claim 1, wherein the oxide catalyst containing cerium is at least one oxide selected from cerium oxides and oxide solid solutions containing cerium.

3. The method according to claim 1, wherein the compound containing cyanide ion is hydrogen cyanide.

4. The method according to claim 1, wherein ammonia or the compound containing ammonium ion is at least one member selected from aqueous ammonia, liquid ammonia, and ammonia gas.

5. The method according to claim 1, wherein the reaction temperature is 40 to 110°C.

6. The method according to claim 1, wherein the oxide catalyst containing cerium, 3-(methylthio)propionaldehyde, hydrogen cyanide, ammonia, and water are contacted with each other in a single vessel.

7. The method according to claim 1, wherein the oxide catalyst containing cerium and 3-(methylthio)propionaldehyde are contacted with each other in the presence of the compound containing cyanide ion and ammonia or the compound containing ammonium ion.

8. The method according to claim 1, wherein, after the oxide catalyst containing cerium, the compound containing cyanide ion, ammonia or the compound containing ammonium ion, and water are mixed, the mixture is mixed with 3-(methylthio)propionaldehyde.