CLAIMS

1. A decomposer for an organohalogen compound, the decomposer containing iron particles ~~comprising~~ consisting of iron and iron oxide, wherein the iron particles have a value of 15% or more by mass as a metallic iron content in the outermost surface layer of the iron particles ~~to which~~when the ion beam etching has been applied to the iron particles twice under the following etching conditions:

degree of vacuum in a chamber: 2.0×10^{-2} Pa
accelerating voltage of an ion gun: 10 kV
emission current: 10 rnA
etching time: 14 seconds,

and wherein the iron particles are in a flattened shape having a plate ratio of 5 or more.

2. The decomposer for an organohalogen compound according to claim 1, wherein the iron particles have a peak intensity ratio (I_2/I_1) of 0.2 or more in the XRD pattern wherein I_1 is an intensity of the peak for (110) plane and 1_2 is an intensity of the peak for (200) plane.

3. The decomposer for an organohalogen compound according to claim 1 or 2, wherein the content of metallic iron in the surface layer of the iron particles ~~to which~~ when ion etching has been applied to the iron particles four times under the etching conditions described in claim 1 is 20% or more by mass.

4. The decomposer for an organohalogen compound according to claim 3, wherein the content of the metallic iron in the surface layer of the iron particles ~~to which~~when ion etching has been applied to the iron particles four times under said etching conditions is 35% or more by mass.

5. The decomposer for an organohalogen compound according to any one of claims 1 to 4, wherein the content of metallic iron in the surface layer of the iron particles ~~to which~~when ion etching has been applied to the iron particles once under the etching conditions described in claim 1 is 10% or more by mass.

6. The decomposer for an organohalogen compound according to any one of claims 1 to 5, wherein the content of metallic iron in the surface layer of the iron particles ~~to which~~when ion etching has been applied to the iron particles three times under the etching conditions described in claim 1 is 25% or more by mass.

7. The decomposer for an organohalogen compound according to any one of claims 1 to 6, wherein the iron particles have a bulk density of 2.0 g/cm^3 or less.

~~8. The decomposer for an organohalogen compound according to any one of claims 1 to 7, wherein the iron particles are in a flattened shape having a plate ratio of 2 or more.~~

~~9~~8. A method for producing the decomposer for an organohalogen compound according to any one of claims 1 to ~~8~~7, the method comprising the steps of: subjecting iron powder to wet treatment in a pot of a ball mill containing a liquid medium; washing the wet treated iron powder with an aqueous solvent; and drying the washed iron powder at a temperature of 30°C or lower to obtain iron particles.