as the inventors know, there are available no patent documents to be incorporated herein by reference.

Citation List

Patent Document 1: JP-A H08-020765

DISCLOSURE OF INVENTION

An object of the present disclosure~~invention~~ is to provide a water-soluble fluid comprising an organic acid and a basic compound which is minimized in bubbling and clouding during its service in the machining of rare earth magnet and thus effective for improving the efficiency and accuracy of machining operation.

The inventors have found that a water-soluble fluid comprising an organic acid and a basic compound is given anti-foaming property by adding a polymeric flocculant thereto and that the polymeric flocculant is effective for preventing the fluid from bubbling and clouding during its service in the machining of rare earth magnet.

The present disclosure~~invention~~ provides a water-soluble fluid for use in machining of rare earth magnet, in the form of an aqueous solution comprising an organic acid, a basic compound, and a polymeric flocculant.

In a first aspect, there is provided a water-soluble fluid for use in machining of rare earth magnet, in the form of an aqueous solution comprising an organic acid, a basic compound, and a polymeric flocculant, wherein the organic acid is present in a concentration of 1 to 5 g/L.

In a second aspect, there is provided a water-soluble fluid when used in machining of rare earth magnet, in the form of an aqueous solution comprising an organic acid, a basic compound, and a polymeric flocculant, wherein the organic acid is present in a concentration of 1 to 5 g/L.

In a third aspect, there is provided the use of the fluid as defined herein, in machining of neodymium-iron-boron magnet.

Preferably, the polymeric flocculant is a nonionic polymeric flocculant, more preferably a polyacrylamide polymeric flocculant. The polymeric flocculant is typically present in a concentration of 5 to 1,000 ppm.

The fluid is best suited for use in machining of neodymium-iron-boron magnet.

ADVANTAGEOUS EFFECTS OF INVENTION

Owing to the inclusion of a polymeric flocculant, the water-soluble fluid allows particulate oxide and/or hydroxide formed during machining to be agglomerated together and settled down along with metal chips. Then the particulates and chips can be separated from the fluid by a simple separator such as a settling separator or magnetic separator. The invention controls the generation of inextinguishable bubbles and clouding of the water-soluble fluid during