

## High ductile metallic glass alloy

Highly ductile metallic glass alloy with excellent plastic workability and applicable to metal working processes such as cold pressing

### Overview

Metallic glass mainly composed of Zr has a wide supercooled liquid region and is excellent in strength, toughness, fatigue resistance, etc., so its application to various applications has been investigated. However, metallic glassy alloys mainly composed of Zr have a problem of poor ductility near room temperature and difficulty in general metal processing such as cold pressing.

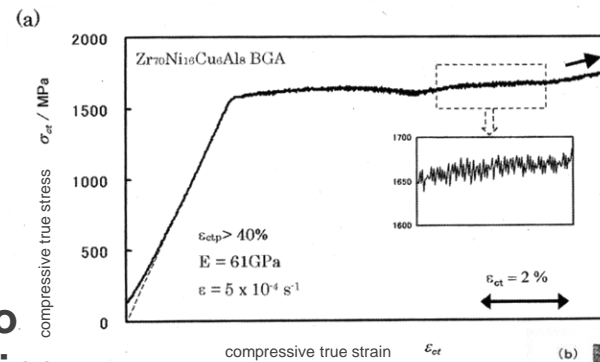
This invention dramatically improves the plastic workability of Zr-based metallic glasses by limiting its components.

### Effect

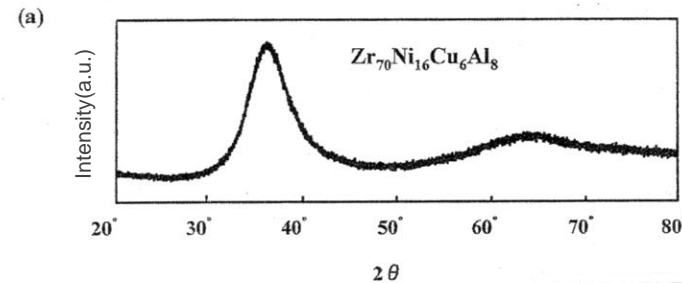
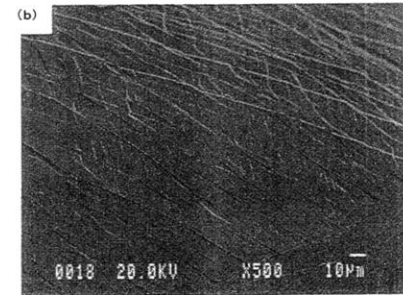
- Poisson's ratio of 0.38 or more
- Yield strain greater than 2.1
- Can be applied for metal processing processes such as cold pressing

### IP Data

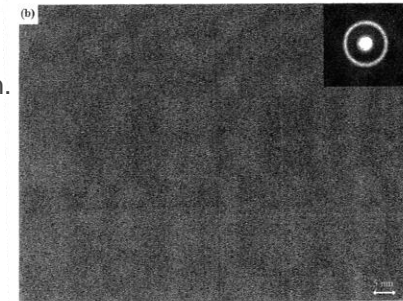
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 Admin No. : T07-078



An example in which a shear band is generated from the initial stage of compressive plastic deformation and propagates to form a dense shear band that does not fail.



Results of X-ray diffraction and high-resolution transmission electron microscopy after 40% compressive strain. It shows uneven patterns without striations on the nanometer scale, indicating pure glass properties. An example in which no crystalline phase exists even after sufficient plastic deformation.



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