

硼-10 B-10

1、产品介绍 Product introduction

天然硼元素有两种稳定同位素，即 ^{10}B 和 ^{11}B ，相对丰度分别为 19.78% 和 80.22%。 ^{10}B 质子数为 5，中子数为 5。 ^{10}B 具有对热中子高吸收的独特特性，对热中子的吸收截面为 3837 靶，是高效的热中子吸收剂，在核电站中它是安全和控制系统中所不可缺少的，正是由于 ^{10}B 同位素的这种特性，使得 ^{10}B 同位素的相关产品广泛应用到了防护用品、核工业等领域。

Natural boron has two kinds of stable isotopes, ^{10}B and ^{11}B , with relative abundance of 19.78% and 80.22%, respectively. ^{10}B has five protons and five neutrons. ^{10}B has the characteristics of high absorption for neutron, the absorption cross section for thermal neutron is 3837b, it is highly effective absorber for thermal neutron, it is indispensable in safety and control system of nuclear power station. Due to the characteristics of ^{10}B isotopes, the related products of ^{10}B isotopes are widely used in the protective equipment, nuclear industry and other fields.

2、产品用途 Application

^{10}B 在核工业、医学及科学技术领域具有广泛的用途。在防护用品中，富集 ^{10}B 的同位素主要用于防护中子弹，比如核防护服、中子枪防护服等；在核工业中， ^{10}B 是核反应中屏蔽辐射和核反应强度控制的理想材料；在现代医疗领域中，硼中子俘获治疗癌症（NCT）是一种新的放疗方法，中子主要与 NCT 药物中的靶核素（ ^{10}B 同位素）发生核反应，产生对癌细胞起杀伤作用的次级辐射及反冲粒子。

^{10}B isotopes are widely used in the nuclear industry, medicine and science and technology. In protective equipment, ^{10}B isotopes are mainly used for neutron bomb protection, such as nuclear protective clothing, neutron gun protective clothing, etc. In

the nuclear industry, ^{10}B is an ideal material for shielding radiation and controlling the intensity of nuclear reactions. In the field of modern medicine, boron neutron capture therapy method is a new radiotherapy method for cancer treatment based on the ability of ^{10}B for capturing thermal neutrons, the neutron mainly reacts with the target nuclide (^{10}B isotope) in NCT drugs to produce secondary radiation and recoil particles that can kill cancer cells.

3、包装、贮藏 Packaging and storage

用聚乙烯塑料瓶外套木箱包装。每瓶净重 250g 或 500g。贮存在通风、干燥的库房中、密封存放，要远离火源。

Packing in polythene plastic bottles and with wooden cases protection outside. Each bottle has a net weight of 250g or 500g. Product should be stored in a ventilated and dry warehouse, stay away from fire.

