



TEC Accessories Isotope Series Fobs

A Primer on Tritium and Where to Find it.

The TEC Isotope Fob Series are stainless steel keychain fobs specifically designed to mount a standard 3mm x 23mm or 3mm x 11mm self-luminous tritium vial. They do not include the tritium vial, you must purchase it from another source typically outside the United States.

What is Tritium?

Tritium is a radioactive isotope of Hydrogen. Tritium light sources are radioluminescent and can be best described as a strong glow. They are self-powered and do not need to be charged via exposure to light, such as our standard glow pellet. Tritium does not in itself emit light but excites phosphors, thereby generating light. It is therefore most often encountered in glass capsules with an internal phosphor coating of various colors. Green is usually the brightest based on the phosphors and the sensitivity of the human eye. The half life of tritium is 12.32 years which means that a tritium based light source will be half as bright after 12.32 years.

Are There Any Restrictions on Tritium?

Tritium capsules are used in gun sights, archery sights, self luminous exit signs, watches, compasses, and other similar products. Due to U.S. regulations regarding radioactive substances, all of the above items can be legally sold in the U.S. The exception is for products that are regarded as having a "frivolous" use such as glow rings. (Note: restrictions are on the sale and not necessarily on the possession). As a result of these restrictions, TEC Accessories does not sell tritium, only a means to mount it into a fob for use as a marker light. Please be aware that tritium use in consumer products might be restricted or banned in some jurisdictions or countries.

DISCLAIMER: TEC Accessories DOES NOT sell tritium vials. It is illegal to resell tritium in the United States without a special license, and we do not have such a license. Please do not ask us to purchase or install tritium for you, we will not do it.

Does Tritium Carry Any Health Hazards?

Tritium electrons are unable to penetrate the human skin and can be stopped without any problems by a sheet of paper. Further physical and chemical characteristics of tritium are almost identical to those of hydrogen. Like hydrogen, tritium oxidizes when exposed to oxygen. Doing so with tritium, results in tritiated water (HTO). The tritium gas is tasteless, odorless and considerably lighter than air. If tritium enters the body, it spreads evenly in the body water and is then again eliminated with a biological half-life time of 10 days. The quantities of gas used in individual light sources do not represent any danger to the body. If a tritium vial breaks, the tritium escapes and mixes with the ambient air. Thanks to its low density, the gas rises and thins down in the atmosphere. If possible, do not inhale the gas.

Where Can I Purchase Tritium Vials?

There are several countries where tritium is commonly available, however some of these countries will not export tritium to other countries (in the UK for example). However, there are places where it can be obtained fairly easily such as <http://tritiumkeychains.com>









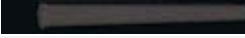
Another reputable source is in the Marketplace section of the online forum candlepowerforums.com. Candlepower Forums is one of the best online sources of information for the flashlight hobbyist. From the main forum menu, scroll down to the section titled "The CPF Mall" and click on the link to "CPF Kiosks": <http://www.candlepowerforums.com/vb/forumdisplay.php?189-CPF-Kiosks>

There are several threads originated by a member named Merkava. He is a reseller of our products and owner of the website referenced above, so you can purchase just the tritium vials or the entire Isotope product with a tritium vial installed. Obviously it would be easier to simply purchase from his website, but we are mentioning him here for reference. Find the thread that describes what you wish to purchase (i.e. "Merkava Tritium Vials" if you want to purchase only tritium). In the first post of the thread, you will see instructions on how to purchase the tritium vials. You want to buy the correct size, which is either 3mm x 11mm or 3mm x 23mm (you may also see a size of 3mm x 22.5mm from other dealers, these will also work).

Please note that Merkava is not the only person selling tritium in the Marketplace, there are several others and they are reputable dealers. There is little risk of ordering from these dealers but nonetheless, do so at your own risk.

What Color Tritium Vials are Available?

The following chart shows the most common available colors and their relative intensity. Any color below the 60% level is dramatically lower in intensity than green and is usually not very desirable.

Color		Yield in %	Remarks
green		100%	Standard color
yellow		80 %	Special color
white		60%	Special color
ice-blue		60 %	Standard color
orange		40 %	Special color
red		20 %	Standard color
blue		15 %	Standard color
UV / IR		--	Special color

Installation of the Tritium Vial

Once you receive your tritium vial, it is a very simple process to mount it into the TEC Isotope. There is a diagram on the back of the product card which shows how to install it. You simply insert the vial into the housing, and insert one of the included rubber plugs on top of the tritium vial.

CAUTION: DO NOT INSERT THE RUBBER PLUG WITH HIGH FORCE, THIS MAY BREAK THE VIAL

You only need enough force to get the plug to seat on top of the vial. Once the plug is in place, install the split ring which will prevent the plug or the vial from sliding out of the housing, and you're done. Attach the fob for your intended purpose and enjoy the glow!