

TEC Accessories Isotope Fobs

A Primer on Tritium and Where to Find it

The TEC Isotope Fobs are a series of stainless steel or titanium keychain fobs specifically designed to mount a standard 3mm x 23mm (sometimes sold as 3mm x 22.5mm) or 3mm x 11mm self-luminous tritium vial. They do not include the tritium vial, you must purchase it from a 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 Embrite™ glow pellets. 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, but 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. Usually tritium can be found on Amazon, these are typically dealers outside the US (i.e. China). Although it is illegal for Amazon to support sales of tritium on their site, it is somewhat similar to a game of whack-a-mole. If Amazon finds the listing and shuts it down, another will pop up until they are found again. Purchasing tritium on Amazon is fairly safe, most of these dealers are reputable and there is little risk of not receiving your order.

There are also two other reputable websites we can recommend to purchase tritium:




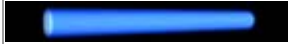



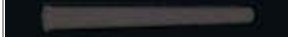
www.tritiumkeychains.com

www.mixglo.com

The above two sites are also resellers of TEC tritium fobs. Although you could purchase fully assembled Isotope fobs from them, we recommend that you purchase only the tritium. The reason is that there is a very low risk that the package could get opened in Customs, and they could possibly confiscate the package. If you only order tritium vials from them, that is the only cost exposure to you if this should happen. Please note that all of these sources are outside the US and can take 2-3 weeks to arrive.

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!