

Disposal of Expired Marine Flares in California

Created in 2012, revised in October 2022¹

What Are Marine Flares?

A marine flare is a type of pyrotechnic device that produces a brilliant light or a plume of colorful smoke as a visual distress signal to attract attention in an emergency, and to help pinpoint the boater's exact location. Handheld flares (which operate on the ground) and rocket flares (which are fired into the air) are the two most-used visual distress signals because they can be used for daytime or nighttime.

What Type of Boaters Need to Carry Onboard Marine Flares?

The U.S. Coast Guard (USCG) requires vessels longer than 16 feet operating on coastal waters, the Great Lakes, territorial seas, and waters directly connected to them (up to the point where the body of water is less than two miles wide) to carry Coast Guard approved visual distress signals, such as pyrotechnic flares. Exceptions are:

- Recreational boats less than 16 feet in length.
- Open sailboats less than 26 feet in length and not equipped with propulsion machinery; and
- Manually propelled boats

These vessels are only required to carry nighttime signals when operating from sunset to sunrise. (Example: Lake Tahoe boaters are not required to use flares because even though the water body is greater than two miles, as it is not connected to international waters.)

Why Use Visual Distress Signals, i.e., Marine Flares?

The USCG requires boaters to carry a minimum of:

- Three daytime and three nighttime use flares to meet the visual distress signal requirements.
- Only need three pyrotechnic flares if they are approved for both daytime and nighttime use.

Red-colored handheld and aerial pyrotechnic flares are approved for both daytime and nighttime use; orange-colored flares are approved for daytime use only. **These flares must be in serviceable condition, stowed where readily accessible and not expired.** According to USCG regulations, the average shelf life for pyrotechnic flares is between 36 and 42 months from the manufacture date because the effectiveness of the chemicals can break down over time. The Code of Federal Regulations (33 CFR 175.125) states: "No person may use a boat unless each signal required by 33 CFR 175.110 is in serviceable condition and the service life of the signal, if indicated by a date marked on the signal, has not expired." Failure to have flares or having expired flares could result in a \$1,100 fine. The US Coast Guard may inspect boaters on a random basis.

Why Are Marine Flares Hazardous?

The California Department of Toxic Substances Control (DTSC) and the Environmental Protection Agency (EPA) classifies pyrotechnic flares that will no longer be used for their intended purpose as hazardous waste, as they are **toxic, reactive, and ignitable** as defined by state and federal hazardous waste regulations. Common ingredients in various types of pyrotechnic flares include:

- Strontium nitrate and strontium peroxide (listed on the EPA's Toxic Substance Control Act Inventory List)



¹ This factsheet is based on information that was compiled by the Expired Marine Flares Disposal Working Group, which consisted of state, federal, and local agency staff working on solutions for the disposal of expired marine flares in California. Staff from the following agencies participated in this working group: U.S. Environmental Protection Agency; California Department of Boating and Waterways; California Coastal Commission; California Department of Toxic Substances Control; California Department of Resources Recovery and Recycling; California Emergency Management Agency; and the San Francisco Department of Public Health This fact sheet was updated in 2022.

- Potassium perchlorate and potassium nitrate (known irritants),
- Magnesium, and black powder (a mixture of sulfur, charcoal, and potassium nitrate)

Pyrotechnic flares contain toxic metals and pollutants such as perchlorate which is recognized as a water and health pollutant that can impact our waterways and can impair thyroid's function.

Why Are Expired Marine Flares an Issue in Our State?

Expired marine flares are hazardous wastes, are transported as explosives and must be disposed of at a hazardous waste facility permitted by the EPA to manage explosives. State laws prohibit the disposal of hazardous waste in waterways, trash, and in municipal landfills. An estimated 174,000 outdated flares are generated each year by recreational vessels in California. With this large number of unneeded flares generated annually in California, there is a strong need for public education and awareness about proper disposal as well as good disposal options.

Currently there are no permitted facilities in California that can accept, treat and/or dispose of non-military explosives waste streams. There are only three permitted facilities in the U.S. that accept and treat/dispose of explosive wastes streams, like pyrotechnic marine flares (two facilities treat in incinerators (UT and LA), the other does open burning (MO)). The packaging, disposal and transportation costs involved with safe disposal of these explosive waste streams are a huge cost burden for the public and governmental agencies. It costs approximately \$7 to \$50 per flare to be properly disposed of at an out-of-state permitted facility.



Expired marine flares collected in San Francisco. Photo by: Vivian Matuk (California State Parks & California Coastal Commission)

What Are the Current Disposal Options for Expired Marine Flares?

Some counties pursue grants from [CalRecycle](#) to conduct temporary marine flare collection events—typically, only recreational boaters who are residents or who keep their boat in that grantee county can participate in those events. For disposal of expired marine flares, please contact the California Department of Toxic Substances Control (800) 728-6942) or your local Certified Unified Program Agency (<https://cersapps.calepa.ca.gov/public/directory/>) for assistance. Recreational boaters can contact their local Household Hazardous Waste program for options. Commercial boaters and organizations can contact a competent hazardous waste management contractor for services.

Recommended Best Practices for Marine Pyrotechnic Flares Disposal

- ✓ Never put flares in the regular trash or in any waterway, it is illegal and can endanger solid waste workers or our waterways.
- ✓ Do not discharge expired marine flares during civic fireworks festivities or any event. Firing a flare in a non-emergency is considered a false distress message —it is a federal crime and is treated seriously by law enforcement. U.S. Code Title 14, section 88 provides that an individual who knowingly and willfully communicates a false distress message to the Coast Guard or causes the Coast Guard to attempt to save lives and property when no help is needed is guilty of a Class D federal felony (subject to up to six years in federal prison, up to \$250,000 in fines and reimbursement of all costs the Coast Guard incurs as a result of the false distress signal or call). In addition, misuse of marine flares can cause serious injuries and can be a fire hazard.
- ✓ Encourage your county to conduct a collection event for recreational boaters.
- ✓ **Purchase a USCG approved electronic visual distress signal to replace old pyrotechnic flares.** Electronic visual distress signal are reusable alternatives that do not release chemicals when used, do not expire, and are safe to use.
- ✓ Stay informed about legal methods for disposal of hazardous waste and tell other recreational boaters when safe marine flare disposal becomes available. Your marina or yacht club should be able to provide you with that information.