

The Hazardous Story of Pyrotechnic Marine Flares: from Toxic Chemicals to Difficult Disposal and Their Alternatives

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What are Marine Flares?

A visual distress signal (VDS) is used to summon help on a boat, and should be displayed only if there is immediate or potential danger.

The U.S. Coast Guard (USCG) requires that all boaters operating on coastal waters, Great Lakes, territorial seas, and waters directly connected to them comply with USCG requirements to carry either:

- 3 day and night pyrotechnic devices
- 1 daytime and 1 night-time non-pyrotechnic device
- Combination of both previous options



The Problem: Single-use Pyrotechnic Marine Flares



Pyrotechnic Flares contain hazardous chemicals and are a fire risks, safe handling is important.

Pyrotechnic marine flares contain toxic metals and pollutants, such as perchlorate, which can impair the thyroid's functions (FDA, 2017).

They expire 42 months after manufacturing and require special handling.

In many counties in California, there is no safe disposal option for these single-use marine flares (Borowicz et al., 2014).

Proper disposal of marine flares costs local government thousands of dollars, costing \$12-25/flare to properly dispose, while costing <\$5 to buy. Without proper disposal options, many boaters turn to improper management, posing human and environmental health risks (Borowicz et al., 2014).

The Solution: Alternative devices, temporary collection events, and policy

Electronic visual distress signal devices are reusable alternatives that don't expire, are safe to use, and approved by the U.S. Coast Guard.

Non-Toxic, Reusable Alternatives

Electronic visual distress signal devices (eVDSs) are reusable alternatives that don't expire, are safe to use, and are approved by the USCG (Doyle, 2020).

Temporary Collection

California Product Stewardship Council (CPSC) has been working with stakeholders along the Coast of California to host collection events and educate the public about safe marine flare management (Waste Advantage. 2021).

Policy Options

Governments can ban toxic ingredients or products with safer alternatives.

Extended Producer Responsibility (EPR) policies call on the manufacturers of the problematic product to fund programs for ongoing collection, education, and promotions of alternatives (CalRecycle, 2022).



References

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