



BENIGN M662 SIGNAL FLARE COMPOSITION FROM PERCHLORATE-FREE AND VOC-FREE INGREDIENTS

PROJECT OVERVIEW

This project aims to demonstrate and qualify a replacement pyrotechnic flare composition for the M662 red star parachute signal. This device is a low-velocity, rifle-launched 40mm cartridge that slowly descends to earth by parachute and provides a 35-second display. The intense red flame that is produced can be used by the soldier as an aerial signal beacon during training and combat. The current flare composition contains “bad actor” ingredients, like VOCs and perchlorate, regulated under AERTA-PP-3-02-06.

BENEFITS

If transitioned, this project will deliver savings from the avoidance of groundwater remediation costs and avoidance of training disruption in the case of a ban on certain perchlorate-based items. Additional savings will come with a more cost-effective, unlined phenolic tube to encase the flares, which is significantly lower in cost than the Viton™-lined tubes in the current design.

PATH FORWARD

We have demonstrated the new composition to TRL 5 by static testing and limited cartridge level testing at a prime 40mm manufacturer. Still ahead, we will advance to higher TRLs by doing more thorough static and cartridge level testing, which will culminate in proving out the production process for the new flare technology.



60 lbs of flare composition in trays



Flare composition pressed into flare with parachute mounted



Lapped cartridges containing flares



Aerial display of burning red flare after gun fire

DoD Executive Agent

Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

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Revised MM.YYYY

FOR FURTHER INFORMATION

National Defense Center for Energy and Environment

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