UNITED STATES PATENT OFFICE

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SIGNAL FLARE COMPOSITION

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1 Claim. (Cl. 52—23)

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This invention relates to a flare or fusee composition and particularly to a composition useful in making flares or fusees which can be seen over long distances through fog.

In extremely foggy weather, conventional railroad fusees are not visible for long distances and it is highly desirable to have a fusee which can be seen through the fog. Such fusees may be used for a variety of purposes and therefore it is desirable that such a fusee be of some color other than red, so that it will not be confused with standard railroad signals. In fact, interstate commerce rules and the rules of many railroads prevent the use of such auxiliary fusees unless they are of a color other than red.

I have found that by making a fusee from the composition which is presently disclosed, the fusee will have an amber colored flame and have great penetrating power in foggy weather or dark nights. Although the burning end of the signal is quite small, rays from the small flame reach out in such a way that from a distance the flare appears to be a large fire. This signal is visible for miles and during foggy weather it shows up better through fog than any standard railroad flare.

The preferred composition for making my flare is as follows:

	Parts by weight
Strontium nitrate	47
Potassium perchlorate	10.5
Sulfur	10
Lead peroxide	1.2
Sodium oxalate	10
Sawdust	1.5

This composition can be mixed together and formulated into flares or fusees in the same manner as similar composition, as is well-known to those skilled in the art.

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The shade of amber can be adjusted by varying the amount of sodium oxalate which is used in the flare. To rearrange the formula to produce a more yellow amber color one would add more sodium oxalate to the above formula; for every 3⅓ grams of sodium oxalate added one would add 0.9 gram of potassium perchlorate and 1 gram of sulphur. The lead peroxide would also be increased 0.1 gram for every 3⅓ grams of sodium oxalate added.

To make the signal a redder amber one would reduce the amount of sodium oxalate; the potassium perchlorate would be reduced by 0.9 gram and the sulphur by 1 gram for every 3⅓ grams reduction in the sodium oxalate. One would also reduce the lead peroxide 0.1 gram for every 3⅓ grams reduction in sodium oxalate.

I claim:

A composition for use as a railroad flare comprising the homogeneous mixture of the following ingredients in substantially the proportions listed:

	Parts by weight
Strontium nitrate	47
Potassium perchlorate	10.5
Sulfur	10
Lead peroxide	1.2
Sodium oxalate	10
Sawdust	1.5

JOHN VINTON.

REFERENCES CITED

The following references are of record in the file of this patent:

The Chemistry of Powder and Explosives by T. L. Davis, volume 1, 1941, John Wiley and Sons, N. Y., pp. 64–67; volume II, 1943, pp. 456–458. (Both copies are in Division 70.)