

Turboflare™ Electronic Flares

- Pays for Itself in the 1st 24 hours!
- Rechargeable
- Safe Ultra Bright LEDs
- 30 Hours average on a Charge
- Extremely Durable
- Safe for the Environment

Incendiary Flares

- \$32.00 per hour of use
- Can only be used once!
- Open Flame
- 20 minutes per Flare
- Fire Danger
- Causes Pollution

August 14, 2007

145 North Gibson Road
Suite D
Henderson, NV 89014

Dear Mr. Michael J. Barile,

It was a pleasure meeting with you earlier this summer. After reviewing the information you provided on your product, I decided to take a closer look into the hazards associated with traditional incendiary flares. Aside from the obvious fire hazards, there are a number of human and environmental health issues associated with the production and use of incendiary road flares.

Different companies use different 'recipes' when manufacturing road flares. However, most flares typically have similar compositions. The majority of flares currently on the market contains strontium nitrate ($\text{Sr}(\text{NO}_3)_2$), which is responsible for the red color of the flame. Oxidizers such as potassium perchlorate or potassium nitrate are added to provide the energy needed for fast combustion. The remaining flare ingredients are either fuels, or a compound that serves as a combination fuel and binder.

Of environmental concern is the fact that strontium nitrate, potassium nitrate, and potassium perchlorate are all water soluble. This means that every flare left on the road will eventually leach these chemicals into our water. For example, one unused road flare on the side of a highway is enough to contaminate more than 300,000 gallons of water with perchlorate to a level above 6 parts per billion, the public health benchmark in California.

In recent years, environmental agencies have found more and more instances of perchlorate appearing in drinking water, groundwater, surface water and soil. Perchlorate exposure at certain levels can disrupt the function of the thyroid gland by interfering with the iodide uptake and thyroid hormone production. This interference may lead to developmental defects. Scientists consider pregnant women, children, infants, and individuals with thyroid disorders to be most at risk of health problems associated with perchlorate exposure.

Perchlorate is not the only offender on the list. When strontium nitrate is burned, it will produce strontium oxide and release toxic nitrogen dioxide gas (NO_2), which is one of the most prominent air pollutants and a poison by inhalation. Individuals suffering from NO_2 poisoning (lung edema) will have symptoms that

tend to appear several hours after one has inhaled a low but potentially fatal dose. Even at low concentrations (4 parts per million) will anesthetize the nose, thus creating a potential for overexposure.

While flares have been the standard for emergency response use for decades, perhaps it is time we weigh their value, taking into account their associated hazards. Alternatives on the market, such as your product, offer a potential solution to eliminating the hazards discussed above. However, ultimately the decision will be in the hands of emergency responders as to what is best for them.

Sincerely,

A handwritten signature in black ink, appearing to read "Roland J. Fornoff". The signature is fluid and cursive, with a large loop at the end.

Roland J. Fornoff
Hazardous Waste/Pollution Prevention Specialist
Business Environmental Program
Nevada Small Business Development Center

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