Fluorescent and PolyEthyleneOxide Hose Stream Additives for Improved Enhanced Firefighting System

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Abstract

A novel technique has been developed to accurately monitor levels of hose stream additives by adding a fluorescein tracer. A fluorescent agent system is proposed to control and monitor additives into hose streams. Fluorescent water streams also have the advantage of improved nighttime and low-light visibility.

Poly(ethylene oxide) (PEO) was shown in the 1960s to be very effective in fire hose streams, providing dramatic increases in hose stream pressure, reach, and volume. As is discussed in this paper, however, PEO fell into disrepute for firefighting operations. A reexamination strongly indicates the inaccuracy of previous misperceptions and indicates that PEO deserves reconsideration as being potentially powerful for greatly enhanced petroleum, ordnance, high-rise and impeded access firefighting, in which increased stand-off distances are desirable.

firefighting - Class A foam - aqueous film forming foam (AFFF) - diethylene glycol butyl ether (DGBE) - poly(ethylene oxide) - fluorescein - night time visibility - fire hose stream - drag reduction - metering