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### New Potentials in Red Phosphorus Compositions

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**Abstract:** New **phosphorus** compositions have been demonstrated which meet the current burning rate and smoke volume requirements but do not contain pyrolusite and/or magnesium. **Phosphorus** composition which used chlorotrifluoroethylene as an oxidizer-binder combination and magnesium as a fuel had reciprocal burning rates of 42-73 s/in.

**Phosphorus** compositions which used calcium sulfate as the oxidizer and boron as the fuel had reciprocal burning rates of 80-130 s/in. These compositions have the advantages of (1) containing no pyrolusite, a foreign-supplied material, and (2) containing no magnesium. The elimination of magnesium **reduces** the possibility of hydrogen generation in sealed units when subjected to high temperature storage. Recommendations for further work are given.

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