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Explosion characteristics of mildly flammable refrigerants ignited with high-energy ignition sources in closed systems

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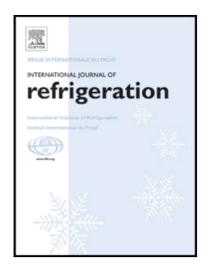
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## Highlights

- Ignitions with high ignition energy in a closed system were conducted.
- An ignition system generating electric arcs with defined ignition energy was used.
- With increasing ignition energy, the LEL of R32 decreases slightly.
- To trigger R1234yf and R1234ze explosions a high ignition energy was necessary.
- R1234yf and R1234ze explosions are still very mild compared to R32 and methane.

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