Cargo Fire
Suppression by
Depressurization Tests

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Cargo Fire Suppression by Depressurization Tests

Federal Aviation Administration

Diagram:
- Pressure Transducer
- Inlet valve
- Test samples
- 10 m Pressure Vessel
- Thermocouple
- Line to vacuum pump

(Top View)
Acrylic Burn Rate vs Altitude

![Graph showing Acrylic Burn Rate vs Altitude](image)

**Cargo Fire Suppression by Depressurization Tests**
JetA Burn Rate vs Altitude

Burn Rate (grams/sec)

Altitude

SL 8k 16k 18k 20k 22k 24k 26k
Heated Lithium Ion Battery vs Altitude

- Flame Out
- Ignition
- pop

Minutes

Altitude

Sea Level (14.7 psia)
8K (10.92 psia)
16K (7.96 psia)
18K (7.34 psia)
20K (6.75 psia)
22K (6.20 psia)
24K (5.69 psia)
26K (5.22 psia)
Altitude vs Time to Battery Venting & Ignition
1.6 L/min Propane Flame - 10g Single Lithium Primary Battery

- Battery Venting
- Ignition

Altitude:
- SL (14.7 psia)
- 8K (10.92 psia)
- 16K (7.96 psia)
- 18K (7.34 psia)
- 20K (6.75 psia)
- 22K (6.2 psia)
- 24K (5.69 psia)
- 26K (5.22 psia)

Seconds:
- 0
- 20
- 40
- 60
- 80
- 100
- 120
- 140

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10 m³ Pressure Vessel

Pressure Transducer

Inlet valve

Thermocouple

Line to vacuum pump

(Top View)
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8,000 Feet to 18,000 Feet

Time (HH:MM:SS)

Temperature (°F)

%O₂ / PSI

Ch #1: T/C 1 (°F)  Ch #5: PressTrans (PSI)  Ch #8: Oxygen Analyzer (%O₂)
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8,000 Feet to 24,000 Feet

Time (HH:MM:SS)

Temperature (°F)

%O₂/PSI

Ch #1: T/C 1 (°F)  Ch #5: PressTrans (PSI)  Ch #8: Oxygen Analyzer (%O₂)
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