

# Thermal Radiation Threat Zone

**Time:** April 3, 2012 1058 hours ST (user specified)

**Chemical Name:** METHANE

**Wind:** 2.8 meters/second from 315° true at 10 meters

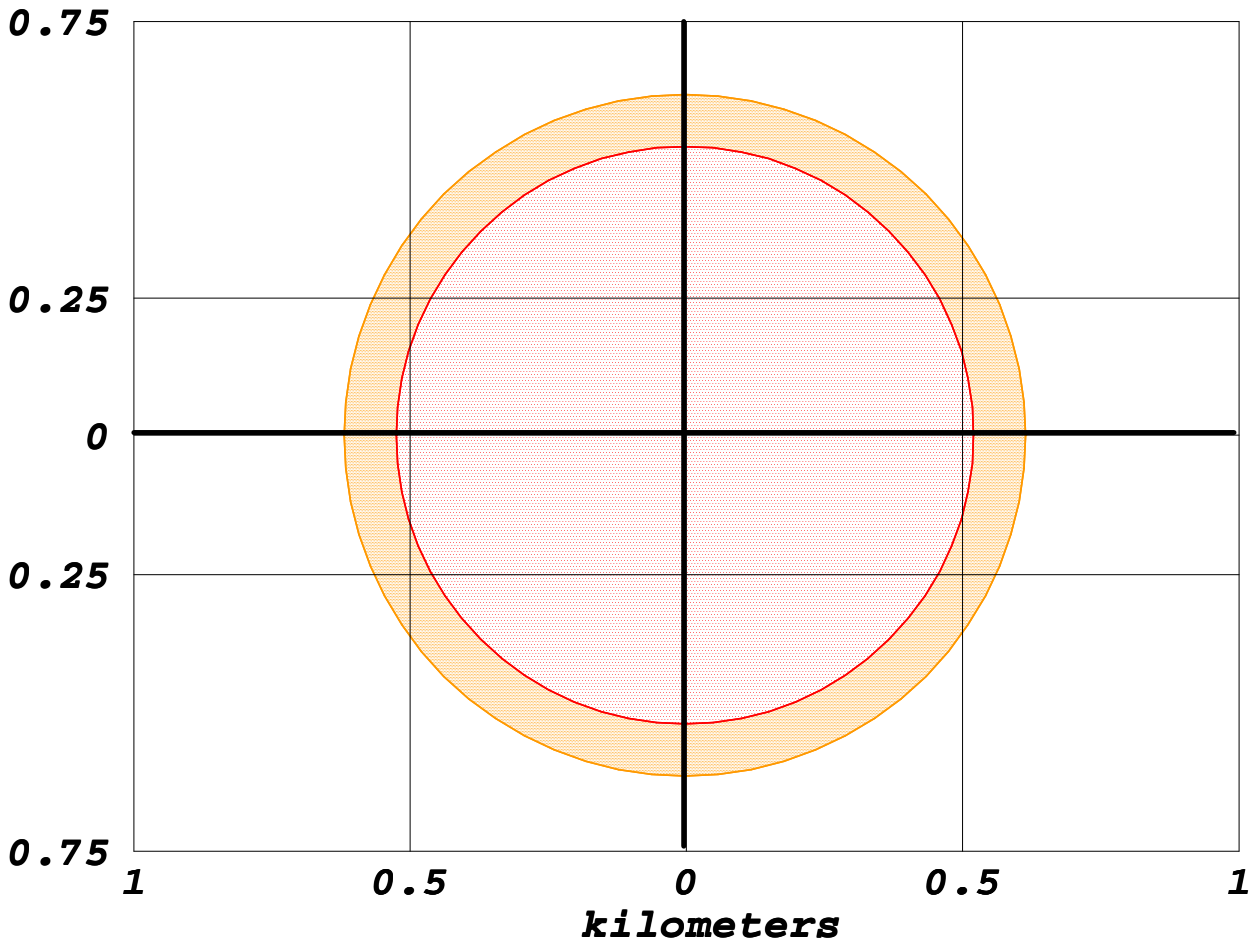
**THREAT ZONE:**

**Threat Modeled:** Thermal radiation from fireball

**Red :** 523 meters --- (7 kW/(sq m))

**Orange:** 617 meters --- (5.0 kW/(sq m) = 2nd degree burns within 60 sec)

**kilometers**



**greater than 7 kW/(sq m)**



**greater than 5.0 kW/(sq m) (2nd degree burns within 60 sec)**

**SITE DATA:**

**Location:** MORA, PORTUGAL  
**Building Air Exchanges Per Hour:** 0.30 (unsheltered double storied)  
**Time:** April 3, 2012 1058 hours ST (user specified)

**CHEMICAL DATA:**

**Chemical Name:** METHANE **Molecular Weight:** 16.04 g/mol  
**PAC-1:** 2900 ppm **PAC-2:** 2900 ppm **PAC-3:** 17000 ppm  
**LEL:** 50000 ppm **UEL:** 150000 ppm  
**Ambient Boiling Point:** -161.6° C  
**Vapor Pressure at Ambient Temperature:** greater than 1 atm  
**Ambient Saturation Concentration:** 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

**Wind:** 2.8 meters/second from 315° true at 10 meters  
**Ground Roughness:** open country **Cloud Cover:** 5 tenths  
**Air Temperature:** 22° C **Stability Class:** B  
**No Inversion Height** **Relative Humidity:** 25%

**SOURCE STRENGTH:**

**BLEVE of flammable liquid in horizontal cylindrical tank**  
**Tank Diameter:** 3.1 meters **Tank Length:** 15.9 meters  
**Tank Volume:** 120 cubic meters  
**Tank contains liquid**  
**Internal Storage Temperature:** -160° C  
**Chemical Mass in Tank:** 50,435 kilograms  
**Tank is 100% full**  
**Internal Pressure at Failure:** 5 atmospheres  
**Percentage of Tank Mass in Fireball:** 59.3%  
**Fireball Diameter:** 180 meters **Burn Duration:** 12 seconds  
**Pool Fire Diameter:** 111 meters **Burn Duration:** 22 seconds  
**Flame Length:** 111 meters

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