

LISA 4 ARVUTUSKÄIGUD JA OHUALADE KAARDID

1. Vedelgaasi tsisternauto BLEVE

Text Summary

ALOHA® 5.4.7



SITE DATA:

Location: SÄÄSE, ESTONIA
Building Air Exchanges Per Hour: 0.60 (unsheltered double storied)
Time: October 25, 2021 1400 hours DST (user specified)

CHEMICAL DATA:

Chemical Name: PROPANE
CAS Number: 74-98-6 Molecular Weight: 44.10 g/mol
AEGL-1 (60 min): 5500 ppm AEGL-2 (60 min): 17000 ppm AEGL-3 (60 min):
33000 ppm
IDLH: 2100 ppm LEL: 21000 ppm UEL: 95000 ppm
Ambient Boiling Point: -42.4° 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: 4 meters/second from w at 3 meters
Ground Roughness: urban or forest Cloud Cover: 7 tenths
Air Temperature: 10° C Stability Class: D
No Inversion Height Relative Humidity: 75%

SOURCE STRENGTH:

BLEVE of flammable liquid in horizontal cylindrical tank
Tank Diameter: 2.36 meters Tank Length: 12 meters
Tank Volume: 52.6 cubic meters
Tank contains liquid
Internal Storage Temperature: 10° C
Chemical Mass in Tank: 23,090 kilograms
Tank is 85% full
Percentage of Tank Mass in Fireball: 100%
Fireball Diameter: 165 meters Burn Duration: 11 seconds

THREAT ZONE:

Threat Modeled: Thermal radiation from fireball
Red : 235 meters --- (25 kW/(sq m))
Orange: 382 meters --- (10.0 kW/(sq m) = potentially lethal within 60 sec)
Yellow: 427 meters --- (8 kW/(sq m))

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THREAT ZONE:

Threat Modeled: Thermal radiation from fireball
Red : 187 meters --- (37 kW/(sq m))