

Flammable Threat Zone

ALOHA® 5.4.7



Time: February 12, 2025 1804 hours ST (user specified)

Chemical Name: ETHYLENE OXIDE

Carcinogenic risk - see CAMEO Chemicals

Wind: 3.3 meters/second from w at 3 meters

THREAT ZONE:

Threat Modeled: Flammable Area of Vapor Cloud

Model Run: Heavy Gas

Red : 11 meters --- (50 % by vol)

Note: Threat zone was not drawn because effects of near-field patchiness make dispersion predictions less reliable for short distances.

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Text Summary

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SITE DATA:

Location: AVENIDA DA FABRICA 298, PENA, PORTUGAL
Building Air Exchanges Per Hour: 0.38 (sheltered double storied)
Time: February 12, 2025 1804 hours ST (user specified)

CHEMICAL DATA:

Chemical Name: ETHYLENE OXIDE
CAS Number: 75-21-8 Molecular Weight: 44.05 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 45 ppm AEGL-3 (60 min): 200 ppm
IDLH: 800 ppm LEL: 30000 ppm UEL: 1000000 ppm
Carcinogenic risk - see CAMEO Chemicals
Ambient Boiling Point: 9.8° 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: 3.3 meters/second from w at 3 meters
Ground Roughness: urban or forest Cloud Cover: 5 tenths
Air Temperature: 15° C Stability Class: D
No Inversion Height Relative Humidity: 78%

SOURCE STRENGTH:

Leak from hole in horizontal cylindrical tank
Flammable chemical escaping from tank (not burning)
Tank Diameter: 0.77 meters Tank Length: 2 meters
Tank Volume: 930 liters
Tank contains liquid Internal Temperature: 15° C
Chemical Mass in Tank: 700 kilograms
Tank is 85% full
Circular Opening Diameter: 1 centimeters
Opening is 38.5 centimeters from tank bottom
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 17.8 kilograms/min
(averaged over a minute or more)
Total Amount Released: 587 kilograms
Note: The chemical escaped as a mixture of gas and aerosol (two phase flow).

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