

## Flammable Threat Zone

ALOHA® 5.4.7



Time: April 11, 2025 1546 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: (HEAVY GAS SELECTED)

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.

Threat Modeled: Flammable Area of Vapor Cloud

Model Run: Heavy Gas

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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: April 11, 2025 1546 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 short pipe or valve 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: 0.5 inches  
Opening is 40 centimeters from tank bottom  
Release Duration: 56 minutes  
Max Average Sustained Release Rate: 12.1 kilograms/min  
(averaged over a minute or more)  
Total Amount Released: 583 kilograms  
Note: The chemical escaped as a mixture of gas and aerosol (two phase flow).

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