

Scenariul 7. Avarierea unei conducte de metanol care alimenteaza instalatia de fabricare formaldehida de 60.000 to/an si incendierea baltii de metanol.

Simulare EFFECTS

Parameters

Inputs

Chemical name (YAWS)	METHANOL
(YAWS)	
Pool size determination	Confined
Total mass released (kg)	
243	
Mass flow rate of the source (kg/s)	
Duration of the release (s)	
Pool surface poolfire (m ²)	61
Height of the observer position above ground level (m)	
0	
Height of the confined pool above ground level (m)	
0	
Hole diameter (mm)	
Discharge coefficient (-)	
Initial height of the liquid above release point (m)	
Cross-sectional area of the tank (m ²)	
Pool thickness (mm)	
Temperature of the pool (°C)	20
Pool burning rate	Calculate/Default
Value of pool burning rate (kg/m ² *s)	
Fraction combustion heat radiated (%)	35
Soot Fraction	Calculate/Default
Value of soot fraction (-)	
Wind speed at 3 m height (m/s)	1
Ambient temperature (°C)	20
Ambient relative humidity (%)	80
Amount of CO ₂ in atmosphere (%)	0,03
Distance from the centre of the pool (m)	40
Exposure duration to heat radiation (s)	20
Take protective effects of clothing into account	No
X-coordinate of release (m)	
Y-coordinate of release (m)	
Predefined wind direction	N
Wind comes from (North = 0 degrees) (deg)	0
Calculate all contours for	Physical effects
Heat radiation level (lowest) for first contour plot (kW/m ²)	
2	
Heat radiation level for second contour plot (kW/m ²)	5
Heat radiation level (highest) for third contour plot (kW/m ²)	
12,5	
Percentage of mortality for contour calculations (%)	

Results

Max Diameter of the Pool Fire (m)	8,8129
Heat radiation at X (kW/m ²)	0,10245
Heat radiation first contour at (m)	
13,424	
Heat radiation second contour at (m)	
10,188	
Heat radiation third contour at (m)	
7,1384	
Combustion rate (kg/s)	0,915
Duration of the pool fire (s)	
265,57	

Heat emission from fire surface (kW/m ²)	
22,664	
Flame tilt (deg)	48,442
View factor (%)	0,67787
Atmospheric transmissivity (%)	
66,682	
Flame temperature (°C)	525,61
Height of the Flame (m)	
4,5937	
Calculated pool surface area (m ²)	
61	



- Zona cu letalitate ridicata si efect de Domino
- Zona cu inceput de letalitate
- Zona cu lezuni ireversibile
- Zona cu lezuni reversibile