

# SUMMARY REPORT

Study Folder: cltol

Unique Audit Number:

1'299



PHAST 6.5



cltol



New Study

T4800

## Base Case

CASE Name:

Data

## User-Defined Data

### Material

Material Identifier	o-CHLOROTOLUENE
Type of Vessel	Padded Liquid
Pressure Specification	Pressure specified
Discharge Pressure (gauge)	0.1 bar
Discharge Temperature	20 degC
Mass Inventory of material to discharge	1000 kg

### Scenario

Type of Event	Leak
Phase	Liquid
HoleDiameter	10 mm
Building Wake Option	None

### Vessel/Tank

Duration of Interest	300 s
Averaging used for time varying	Average Rates
Type of Tank	Vertical
Tank Height	10 m
Tank Diameter	12 m
Height of Discharge from Bottom of Vessel	0 m

### Location

Elevation	0 m
Dispersion Concentration of Interest	1000 ppm
Averaging time associated with Concentration	Flammable
Distances of Interest(1)	50 m
ERPG selection	ERPG is not set
IDLH selection	IDLH is not set
STEL selection	STEL is not set
User Defined Averaging	No user defined averaging time supplied

### Bund

Status of Bund	Bund present
Area of Dike	400 m2
[Type of Bund Surface	Concrete]
Bund Height	1.78 m
[Bund Failure Modeling	Bund cannot fail]

### Indoor/Outdoor

Outdoor Release Direction	Horizontal
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### Flammable

Method to use for explosions	TNT
Jet Fire Method	Shell

### Dispersion

Ignition Location	No ignition location
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Mass Inventory of material to Disperse

1000 kg

## Fireball Parameters

[Mass Modification Factor

3]

[Calculation method for fireball

DNV Recommended]

[Temperature of fireball

1727 degC]

## Pool Fire Parameters

Pool fire radiation intensity level 1

5 kW/m2

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## Discharge Data

### User-Defined Quantities

Material	o-CHLOROTOLUENE
Temperature	20.00 degC
Pressure	1.11 bar
Inventory	1'000.00 kg
Scenario	Leak
Fixed Duration	n/a s

### Calculated Quantities

Weather: New Study\2F

Mass Flow of Air (Vent from Vapor Space Only) n/a

#### Average Values for Segment Number 1

Liquid Fraction	1.00 fraction
Final Temperature	19.91 degC
Final Velocity	4.68 m/s
Droplet Diameter	670.35 um

#### Continuous Release Data:

Mass Flowrate	2.35520E-001 kg/s
Release Duration	300.00 s
Orifice Velocity	n/a m/s
Exit Pressure	n/a bar
Exit Temperature	n/a degC
Discharge Coefficient	n/a
Expanded Radius	n/a m

Weather: New Study\5D

Mass Flow of Air (Vent from Vapor Space Only) n/a

#### Average Values for Segment Number 1

Liquid Fraction	1.00 fraction
Final Temperature	19.91 degC
Final Velocity	4.68 m/s
Droplet Diameter	670.35 um

#### Continuous Release Data:

Mass Flowrate	2.35520E-001 kg/s
Release Duration	300.00 s
Orifice Velocity	n/a m/s
Exit Pressure	n/a bar
Exit Temperature	n/a degC
Discharge Coefficient	n/a
Expanded Radius	n/a m

## Consequence Results

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## Pool Vaporization Results

		2F	5D
Release Segment 1			
Release Duration	s	300	300
Liquid Rainout	fraction	0.999993	0.999998
Maximum Pool Radius	m	2.0363	2.03428

## Distance to Concentration Results

The height for user defined concentrations is the user defined height 0 m  
All toxic results are reported at the toxic effect height 0 m  
All flammable results are reported at the cloud centreline height

Concentration(ppm) Averaging Time				Distance (m)	
				2F	5D
User Conc (1000)	18.75	s		3.59278	4.62494
UFL (67000)	18.75	s		0.530553	0.822936
LFL (13000)	18.75	s		1.10073	1.59729
LFL Frac (6500)	18.75	s		1.57475	1.99492
Concentration(ppm) Averaging Time				Heights (m) for above distances	
				2F	5D
User Conc (1000)	18.75	s		0	0
UFL (67000)	18.75	s		0	0
LFL (13000)	18.75	s		0	0
LFL Frac (6500)	18.75	s		0	0

## Concentration At Distance Results

The height for user defined concentrations is the user defined height 0 m  
All toxic results are reported at the toxic effect height 0 m  
All flammable results are reported at the cloud centreline height

Distance		Conc.(ppm) at Flammable Avg.Time of 18.75 s	
		2F	5D
50	m	43.6601	3.22743
Distance		Heights (m) for above concentrations	
		2F	5D
50	m	0	0
Distance		Conc.(ppm) at Core Avg.Time of 18.75 s	
		2F	5D
50	m	43.6601	3.22743
Distance		Heights (m) for above concentrations	
		2F	5D
50	m	0	0

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## Jet Fire Hazard

Jet fire method used: SHELL - Johnson

Jet Fire Status	2F	5D
Flame Direction	Truncated	Truncated
	Horizontal	Horizontal

## Radiation Effects: Jet Fire Ellipse

This table gives the distances to the specified radiation levels for each jet fire listed in the above hazard table

			2F	5D
Radiation Level	4	kW/m2	Not Reached	Not Reached
Radiation Level	12.5	kW/m2	Not Reached	Not Reached
Radiation Level	37.5	kW/m2	Not Reached	Not Reached

## Radiation Effects: Jet Fire Distance

			2F	Radiation Level (kW/m2)
			5D	
Distance Of Interest 50	m	No Hazard	No Hazard	

## Early Pool Fire Hazard

Early Pool Fire Status	2F	5D
	Hazard	Hazard

## Radiation Effects: Early Pool Fire Ellipse

			2F	Distance (m)
			5D	
Radiation Level	5	kW/m2	9.03994	9.69679
Radiation Level	12.5	kW/m2	6.01978	7.06562
Radiation Level	37.5	kW/m2	2.12782	2.12782

## Radiation Effects: Early Pool Fire Distance

			2F	Radiation Level (kW/m2)
			5D	
Distance Of Interest 50	m	0.0837979	0.0710994	

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## Late Pool Fire Hazard

Late Pool Fire Status	2F	5D
	Hazard	Hazard

## Radiation Effects: Late Pool Fire Ellipse

			Distance (m)	
			2F	5D
Radiation Level	5	kW/m2	13.6514	14.6454
Radiation Level	12.5	kW/m2	8.73367	10.5423
Radiation Level	37.5	kW/m2	3.04632	3.0443

## Radiation Effects: Late Pool Fire Distance

		Radiation Level (kW/m2)	
		2F	5D
Distance Of Interest 50	m	0.219749	0.192751

## Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			2F	5D
Furthest Extent	6500	ppm	1.57475	1.99492
Furthest Extent	13000	ppm	1.10073	1.59729
			Heights (m) for above distances	
			2F	5D
Furthest Extent	6500	ppm	0	0
Furthest Extent	13000	ppm	0	0

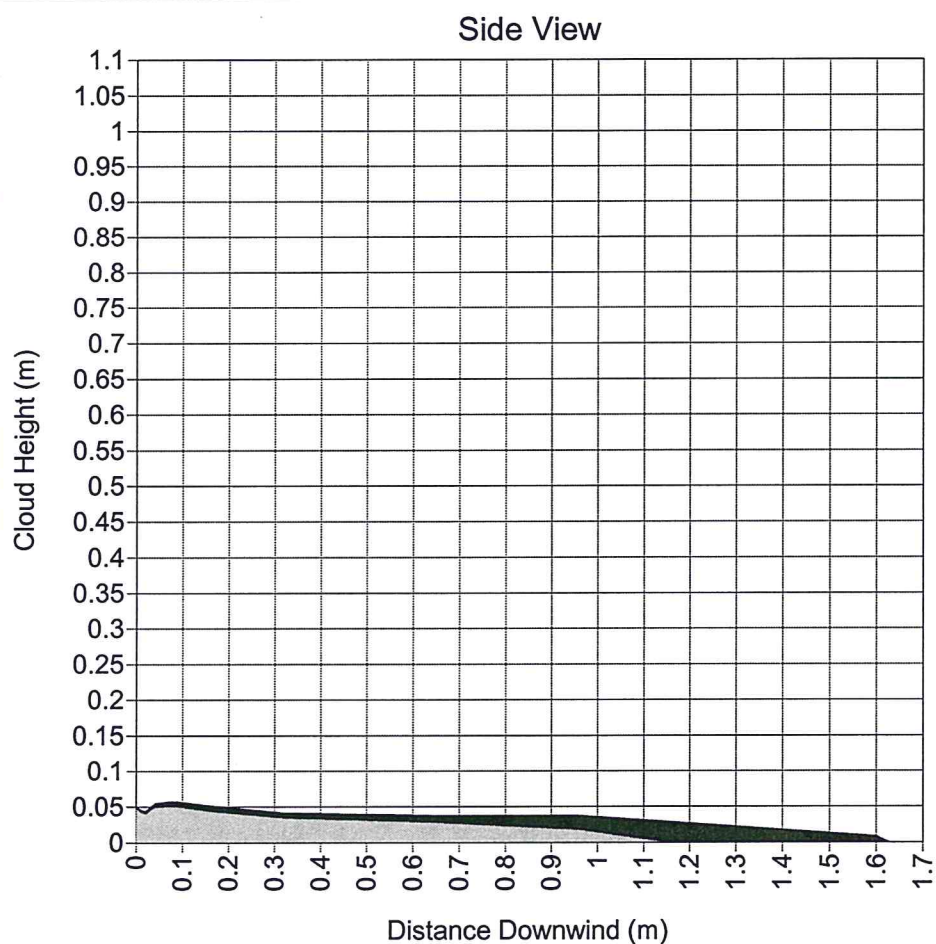
## Weather Conditions

		2F	5D
Wind Speed	m/s	2	5
Pasquill Stability		F	D
Surface Roughness Length	mm	183.156	183.156
Surface Roughness Parameter		0.0999999	0.0999999
Atmospheric Temperature	degC	20	20
Surface Temperature	degC	20	20
Relative Humidity	fraction	0.7	0.7



Study Folder: cltol  
Audit No: 1113  
Model: T4800  
Weather: 5D  
Material:  
o-CHLOROTOLUENE  
Averaging Time:  
Flammable(18.75 s)  
C/L Offset: 0 m  
Concentration  
Time: 0.4036 s

6500 ppm  
1.3e+004 ppm



Study Folder: cltol  
Audit No: 1113  
Model: T4800  
Weather: 2F  
Material:  
o-CHLOROTOLUENE  
Averaging Time:  
Flammable(18.75 s)  
C/L Offset: 0 m  
Concentration  
Time: 1.434 s

6500 ppm  
1.3e+004 ppm

