

SUMMARY REPORT

Unique Audit Number: 675.455



Study Folder: seda

Phast 6.53.1

seda

Estação REPLAN

REPLAN-Taubaté-24"-álcool c/

Base Case

CASE Name: Data

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

User-Defined Data

Material	Material Identifier	ETHANOL
Scenario	Building Wake Option	None
Pipe	Line length	1 m
Vessel/Tank	Release Type	Continuous
Location	Elevation	0 m
	Distances of Interest(1)	3 m
	Use ERPG averaging time	ERPG not selected
	Use IDLH averaging time	IDLH not selected
	Use STEL averaging time	STEL not selected
	Supply a user defined averaging time	Not supplied
Bund	Status of Bund	Bund present
	Area of Dike	4373 m2
	[Type of Bund Surface	Concrete]
	Bund Height	0,03 m
	[Bund Failure Modeling	Bund cannot fail]
Indoor/Outdoor	Outdoor Release Angle	45 deg
	Outdoor Release Direction	Angled from Horizontal
Flammable	Method to use for explosions	Multi-Energy
	Jet Fire Method	Shell
Dispersion	Number of Release Segments	1
	Fluid Phase(1)	Liquid
	Discharge Velocity(1)	70,8 m/s
	Droplet Diameter(1)	71,05 um
	Duration of Discharge(1)	534 s
	Final Temperature(1)	40 degC
	Release Rate(1)	391,2 kg/s
	Pre-Dilution Air Rates(1)	0 kg/s

Date: 5/15

1 of 7

Time: 17:11:36

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Late Ignition Location
Mass Inventory of material to Disperse

No ignition location
1E7 kg

Fireball Parameters

[Mass Modification Factor 3]
[Calculation method for fireball DNV Recommended]
[TNO model flame temperature 1727 degC]

Toxic Parameters

[Indoor Calculations Unselected]
[Wind Dependent Exchange Rate Case Specified]
[Building Exchange Rate 4 /hr]
[Tail Time 1800 s]
[Set averaging time equal to exposure time Use a fixed averaging time]
[Cut-off fraction of toxic load for exposure time calculation 0,05 fraction]
[Cut-off concentration for exposure time calculations 0 fraction]

Multi Energy Explosion

Use Unconfined Volumes No
Use Fractions No
Source 1 (Source in Use) Yes
Source 2 (Source in Use) No
Source 3 (Source in Use) No
Source 4 (Source in Use) No
Source 5 (Source in Use) No
Source 6 (Source in Use) No
Source 7 (Source in Use) No
Source 1 (Strength) 5
Source 1 (Volume) 2850 m3

Geometry

Geometry shape Point
Coordinates Absolute
East(1) 0 m
North(1) 0 m

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Consequence Results

Concentration At Distance Results

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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 flammable effect height 0 m

Distance		Conc.(ppm) at Flammable Avg.Time of 18,75 s	
		DIA	NOITE
3	m	3208,27	0
Distance		Heights (m) for above concentrations	
		DIA	NOITE
3	m	0	0
Distance		Conc.(ppm) at Core Avg.Time of 18,75 s	
		DIA	NOITE
3	m	3208,27	0
Distance		Heights (m) for above concentrations	
		DIA	NOITE
3	m	0	0

Distance to Concentration Results

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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 flammable effect height 0 m

Concentration(ppm)	Averaging Time		Distance (m)	
			DIA	NOITE
UFL (190000)	18,75 s		0,0864194	0,0848173
LFL (43000)	18,75 s		0,118014	0,0983134
LFL Frac (43000)	18,75 s		0,118014	0,0983134
Concentration(ppm)	Averaging Time		Heights (m) for above distances	
			DIA	NOITE
UFL (190000)	18,75 s		0	0
LFL (43000)	18,75 s		0	0
LFL Frac (43000)	18,75 s		0	0

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Early Pool Fire Hazard

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Early Pool Fire Status	DIA Hazard	NOITE Hazard
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Flash Fire Envelope

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

All flammable results are reported at the flammable effect height 0 m

			Distance (m)	
			DIA	NOITE
Furthest Extent	43000	ppm	0,118014	0,0983134
Furthest Extent	43000	ppm	0,118014	0,0983134

Formatado: Inglês (EUA)

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			Heights (m) for above distances	
			DIA	NOITE
Furthest Extent	43000	ppm	0	0
Furthest Extent	43000	ppm	0	0

Late Pool Fire Hazard

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

Late Pool Fire Status	DIA Hazard	NOITE Hazard
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Pool Vaporization Results

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

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		DIA	NOITE
Release Segment 1			
Release Duration	s	534	534
Liquid Rainout	fraction	0,231407	0,299945
Release Segment 1 Cloud Segment 1			
Cloud Segment Duration	s	210,976	244,141
Pool Vaporization Rate	kg/s	1,89355	1,69935
Total Vapor Flowrate	kg/s	302,567	275,561
Release Segment 1 Cloud Segment 2			
Cloud Segment Duration	s	77,175	88,01
Pool Vaporization Rate	kg/s	5,16871	4,71901
Total Vapor Flowrate	kg/s	305,842	278,581
Release Segment 1 Cloud Segment 3			
Cloud Segment Duration	s	60,605	68,85
Pool Vaporization Rate	kg/s	6,56084	6,0545
Total Vapor Flowrate	kg/s	307,235	279,916
Release Segment 1 Cloud Segment 4			
Cloud Segment Duration	s	52,245	59,1019
Pool Vaporization Rate	kg/s	7,67058	7,11447
Total Vapor Flowrate	kg/s	308,344	280,976
Release Segment 1 Cloud Segment 5			
Cloud Segment Duration	s	88,515	99,6375
Pool Vaporization Rate	kg/s	9,01851	8,40234
Total Vapor Flowrate	kg/s	309,692	282,264
Release Segment 1 Cloud Segment 6			
Cloud Segment Duration	s	109,969	129,87
Pool Vaporization Rate	kg/s	10,7049	9,39941
Total Vapor Flowrate	kg/s	311,379	8,40234
Release Segment 1 Cloud Segment 7			
Cloud Segment Duration	s	21000,5	20910,4
Pool Vaporization Rate	kg/s	2,1005	2,71512
Total Vapor Flowrate	kg/s	10,7049	9,39941
Maximum Pool Radius	m	60,5137	69,5869

Radiation Effects: Early Pool Fire Distance

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

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		DIA	NOITE	Radiation Level (kW/m2)
Distance Of Interest	3 m	3,61096	3,28448	

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Radiation Effects: Early Pool Fire Ellipse

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

			Distance (m)	
			DIA	NOITE
Radiation Level	3	kW/m2	253,723	292,56
Radiation Level	18,3	kW/m2	181,351	211,378
Radiation Level	36	kW/m2	157,715	185,811
Radiation Level	71,2	kW/m2	147,366	174,04

Radiation Effects: Late Pool Fire Distance

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

			Radiation Level (kW/m2)	
			DIA	NOITE
Distance Of Interest	3	m	11,5575	10,808

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Radiation Effects: Late Pool Fire Ellipse

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			Distance (m)	
			DIA	NOITE
Radiation Level	3	kW/m2	347,226	398,426
Radiation Level	18,3	kW/m2	229,219	265,716
Radiation Level	36	kW/m2	194,395	227,353
Radiation Level	71,2	kW/m2	173,563	204,365

Weather Conditions

Path: \seda\Estação REPLAN\REPLAN-Taubaté-24"-álcool c/ bomba-fendaRN-VERT-45

		DIA	NOITE
Wind Speed	m/s	2,08	1,92
Pasquill Stability		B	F
Surface Roughness Length	in	4,62348	4,62348
Surface Roughness Parameter		0,09	0,09
Atmospheric Temperature	degC	23,08	19,7
Surface Temperature	degC	28,08	19,7
Relative Humidity	fraction	0,6686	0,7863