

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

ALL-Rondonópolis

ALL

H01 - Álcool Ruptura

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

User-Defined Data

Material

Material Identifier	ETHANOL
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Catastrophic rupture
Phase	Liquid
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
---------------------	------------------

Flammable

Method to use for explosions	TNT
Jet Fire Method	Cone Model

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg
Use Burst Pressure	No - Use release pressure for fireball

Fireball Parameters

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

Toxic Parameters

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]
[Tail time	1800 s]
[Method of setting time	Use a fixed averaging time]
[Cut-off fraction of toxic load	0,05 fraction]
[Cut-off concentration	0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

Discharge Data

User-Defined Quantities

Material	ETHANOL
Temperature	25,00 degC
Pressure	1,01 bar
Inventory	65.000,00 kg
Scenario	Catastrophic rupture
Fixed Duration	n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	1,39 m/s
Droplet Diameter	10.000,00 um
Continuous Release Data:	
Mass Flowrate	n/a kg/s
Release Duration	n/a 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: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	1,39 m/s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Droplet Diameter	10.000,00 um
Continuous Release Data:	
Mass Flowrate	n/a kg/s
Release Duration	n/a 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

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

N.B. Pool vaporization segments begin when the cloud has left the pool

		Dia	Noite
Liquid Rainout	fraction	0,999356	0,999553
Initial Vapor Cloud	kg	41,885	29,0636
Time Pool Left Behind	s	32,0298	81,4298
Cloud Segment 1			
Cloud Segment Duration	s	69,7225	66,0156
Pool Vaporization Rate	kg/s	7,41859	4,02511
Cloud Segment 2			
Cloud Segment Duration	s	33,8081	31,9944
Pool Vaporization Rate	kg/s	15,2667	8,26479
Cloud Segment 3			
Cloud Segment Duration	s	131,325	26,8706
Pool Vaporization Rate	kg/s	19,5514	9,94648
Cloud Segment 4			
Cloud Segment Duration	s	365,144	475,119
Pool Vaporization Rate	kg/s	16,1351	11,0163
Maximum Pool Radius	m	71,266	71,5665

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

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		Dia	Noite
UFL (190000)	18,75	s	6,12632	5,97931
LFL (43000)	18,75	s	11,7326	7,35174
LFL Frac (21500)	18,75	s	30,7125	19,7453
Concentration(ppm)	Averaging Time		Dia	Noite
UFL (190000)	18,75	s	0	0
LFL (43000)	18,75	s	0	0
LFL Frac (21500)	18,75	s	0	0

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

				Distance (m)	
				Dia	Noite
Radiation Level	3	kW/m2		271,545	271,703
Radiation Level	18,3	kW/m2		140,359	136,223
Radiation Level	36,1	kW/m2		101,829	96,9349
Radiation Level	71,2	kW/m2		72,831	73,0056

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

		Radiation Level (kW/m2)	
		Dia	Noite

Fireball Hazard

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

		Dia	Noite
Fireball Flame Status		No Hazard	No Hazard

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

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

				Distance (m)	
				Dia	Noite
Furthest Extent	21500	ppm		30,7125	19,7453
Furthest Extent	43000	ppm		11,7326	7,35174
				Heights (m) for above distances	
				Dia	Noite
Furthest Extent	21500	ppm		0	0
Furthest Extent	43000	ppm		0	0

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Explosion Effects: Early Explosion

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

Early Explosions are assumed to be centered at the release location
Explosion Model Used : TNT

Supplied Flammable Mass			Dia	Noite
		kg	65000	65000
Distance (m) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	No Hazard	No Hazard
Overpressure	0,1	bar	No Hazard	No Hazard
Overpressure	0,3	bar	No Hazard	No Hazard
Overpressure	0,4	bar	No Hazard	No Hazard
Used Mass (kg) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	0	0
Overpressure	0,1	bar	0	0
Overpressure	0,3	bar	0	0
Overpressure	0,4	bar	0	0

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Explosion Effects: Late Ignition

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

Explosion Model Used : TNT

Explosion Location Criterion: Cloud Center

All distances are measured from the Source

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

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,05	bar	34,3728	21,7941
Overpressure	0,1	bar	21,5722	13,9697
Overpressure	0,3	bar	13,1861	7,55686
Overpressure	0,4	bar	12,4583	6,54842

Supplementary Data at 0,05 bar

			Dia	Noite
Supplied Flammable Mass	kg		13,5128	3,08601
Used Flammable Mass	kg		13,5128	3,08601
Overpressure Radius	m		33,7557	20,6331
Distance to:				
- Ignition Source	m		10	10
- Cloud Front/Centre	m		0,617121	1,161
- Explosion Centre	m		0,617121	1,161

Supplementary Data at 0,1 bar

			Dia	Noite
Supplied Flammable Mass	kg		13,5128	3,08601
Used Flammable Mass	kg		13,5128	3,08601
Overpressure Radius	m		20,9551	12,8087
Distance to:				
- Ignition Source	m		10	10
- Cloud Front/Centre	m		0,617121	1,161
- Explosion Centre	m		0,617121	1,161

Supplementary Data at 0,3 bar

			Dia	Noite
Supplied Flammable Mass	kg		1,16005	3,08601
Used Flammable Mass	kg		1,16005	3,08601
Overpressure Radius	m		4,61592	6,39585
Distance to:				
- Ignition Source	m		20	10
- Cloud Front/Centre	m		8,57014	1,161
- Explosion Centre	m		8,57014	1,161

Supplementary Data at 0,4 bar

			Dia	Noite
Supplied Flammable Mass	kg		1,16005	3,08601
Used Flammable Mass	kg		1,16005	3,08601
Overpressure Radius	m		3,88813	5,38742
Distance to:				
- Ignition Source	m		20	10
- Cloud Front/Centre	m		8,57014	1,161

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

- Explosion Centre	m	8,57014	1,161
--------------------	---	---------	-------

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H01 - Álcool Ruptura

		Dia	Noite
Wind Speed	m/s	3	2
Pasquill Stability		C	E
Surface Roughness Length	in	37,4366	37,4366
Surface Roughness Parameter		0,17	0,17
Atmospheric Temperature	degC	25	20
Surface Temperature	degC	30	20
Relative Humidity	fraction	0,8	0,8

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

H02 - Álcool Furo 10 mm

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

User-Defined Data

Material

Material Identifier	ETHANOL
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Leak
Phase	Liquid
HoleDiameter	0,3937 in
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
Outdoor Release Direction	Horizontal

Flammable

Jet Fire Method	Cone Model
-----------------	------------

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg

Fireball Parameters

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

Toxic Parameters

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Tail time	1800 s]
[Method of setting time	Use a fixed averaging time]
[Cut-off fraction of toxic load	0,05 fraction]
[Cut-off concentration	0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

Discharge Data

User-Defined Quantities

Material	ETHANOL
Temperature	25,00 degC
Pressure	1,01 bar
Inventory	65.000,00 kg
Scenario	Leak
Fixed Duration	n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	4,85 m/s
Droplet Diameter	665,42 um
Continuous Release Data:	
Mass Flowrate	1.79588E-001 kg/s
Release Duration	600,00 s
Orifice Velocity	4,85 m/s
Exit Pressure	1,01 bar
Exit Temperature	25,00 degC
Discharge Coefficient	0,60
Expanded Radius	0,00 m

Weather: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	4,85 m/s
Droplet Diameter	665,42 um
Continuous Release Data:	
Mass Flowrate	1.79588E-001 kg/s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Release Duration	600,00 s
Orifice Velocity	4,85 m/s
Exit Pressure	1,01 bar
Exit Temperature	25,00 degC
Discharge Coefficient	0,60
Expanded Radius	0,00 m

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Consequence Results

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

			Dia	Noite
		Release Segment 1		
Release Duration	s		600	600
Liquid Rainout	fraction		0,999936	0,999923
Maximum Pool Radius	m		2,75188	2,8264

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

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			0,415792	0,375874
LFL (43000)	18,75	s			0,860909	0,785029
LFL Frac (21500)	18,75	s			1,14163	0,995455
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 (21500)	18,75	s			0	0

Jet Fire Hazard

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

Jet fire method used: DNV recommended

			Dia	Noite
Jet Fire Status			Truncated	Truncated
Flame Direction			Horizontal	Horizontal

Radiation Effects: Jet Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

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

				Distance (m)	
				Dia	Noite
Radiation Level	3	kW/m2		1,30471	1,36844
Radiation Level	18,3	kW/m2		Not Reached	Not Reached
Radiation Level	36,1	kW/m2		Not Reached	Not Reached
Radiation Level	71,2	kW/m2		Not Reached	Not Reached

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Jet Fire Distance

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Early Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

	Dia	Noite
Early Pool Fire Status	Hazard	Hazard

Radiation Effects: Early Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

			Dia	Distance (m)
Radiation Level	3	kW/m2	8,63663	Noite 8,46159
Radiation Level	18,3	kW/m2	3,02021	2,87668
Radiation Level	36,1	kW/m2	2,53411	2,54531
Radiation Level	71,2	kW/m2		

Radiation Effects: Early Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

			Dia	Distance (m)
Radiation Level	3	kW/m2	14,6699	Noite 14,7148
Radiation Level	18,3	kW/m2	6,07612	5,83534
Radiation Level	36,1	kW/m2	3,76191	3,83642
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

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

				Distance (m)
			Dia	Noite
Furthest Extent	21500	ppm	1,14163	0,995455
Furthest Extent	43000	ppm	0,860909	0,785029
				Heights (m) for above distances
			Dia	Noite
Furthest Extent	21500	ppm	0	0
Furthest Extent	43000	ppm	0	0

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H02 - Álcool Furo 10 mm

			Dia	Noite
Wind Speed		m/s	3	2
Pasquill Stability			C	E
Surface Roughness Length		in	37,4366	37,4366
Surface Roughness Parameter			0,17	0,17
Atmospheric Temperature		degC	25	20
Surface Temperature		degC	30	20
Relative Humidity		fraction	0,8	0,8

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

H03 - Gasolina Ruptura

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

User-Defined Data

Material

Material Identifier	N-HEXANE
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Catastrophic rupture
Phase	Liquid
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
---------------------	------------------

Flammable

Jet Fire Method	Cone Model
-----------------	------------

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg
Use Burst Pressure	No - Use release pressure for fireball

Fireball Parameters

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

Toxic Parameters

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]
[Tail time	1800 s]

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Method of setting time] Use a fixed averaging time]
[Cut-off fraction of toxic load] 0,05 fraction]
[Cut-off concentration] 0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

Discharge Data

User-Defined Quantities

Material N-HEXANE
Temperature 25,00 degC
Pressure 1,01 bar
Inventory 65.000,00 kg
Scenario Catastrophic rupture
Fixed Duration n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction 1,00 fraction
FinalTemperature 25,00 degC
Final Velocity 1,08 m/s
Droplet Diameter 10.000,00 um
Continuous Release Data:
Mass Flowrate n/a kg/s
Release Duration n/a 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: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction 1,00 fraction
FinalTemperature 25,00 degC
Final Velocity 1,08 m/s
Droplet Diameter 10.000,00 um
Continuous Release Data:
Mass Flowrate n/a kg/s
Release Duration n/a s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

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

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

N.B. Pool vaporization segments begin when the cloud has left the pool

		Dia	Noite
Liquid Rainout	fraction	0,999226	0,999639
Initial Vapor Cloud	kg	50,2801	23,4646
Time Pool Left Behind	s	48,97	144,665
Cloud Segment 1			
Cloud Segment Duration	s	85,1006	99,0025
Pool Vaporization Rate	kg/s	35,3797	22,2651
Cloud Segment 2			
Cloud Segment Duration	s	45,43	50,4481
Pool Vaporization Rate	kg/s	66,5319	43,4479
Cloud Segment 3			
Cloud Segment Duration	s	84,0919	144,672
Pool Vaporization Rate	kg/s	72,1371	45,9621
Cloud Segment 4			
Cloud Segment Duration	s	49,44	174,6
Pool Vaporization Rate	kg/s	61,47	37,7264
Cloud Segment 5			
Cloud Segment Duration	s	55,4531	131,278
Pool Vaporization Rate	kg/s	54,8538	32,4373
Cloud Segment 6			
Cloud Segment Duration	s	129,924	
Pool Vaporization Rate	kg/s	46,7719	
Cloud Segment 7			
Cloud Segment Duration	s	150,56	
Pool Vaporization Rate	kg/s	38,2356	
Maximum Pool Radius	m	73,9119	75,5308

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

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 (76800)	18,75	s	18,6833	16,8936
LFL (10500)	18,75	s	65,8363	56,7709
LFL Frac (5250)	18,75	s	118,336	99,7436

Concentration(ppm)	Averaging Time		Heights (m) for above distances	
			Dia	Noite
UFL (76800)	18,75	s	0	0
LFL (10500)	18,75	s	0	0
LFL Frac (5250)	18,75	s	0	0

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

Radiation Level			Distance (m)	
			Dia	Noite
3	kW/m2		206,102	198,249
18,3	kW/m2		75,1779	76,7452
36,1	kW/m2		Not Reached	Not Reached
71,2	kW/m2		Not Reached	Not Reached

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

	Dia	Radiation Level (kW/m2)
		Noite

Fireball Hazard

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

	Dia	Noite
Fireball Flame Status	No Hazard	No Hazard

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

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

				Distance (m)	
				Dia	Noite
Furthest Extent	5250	ppm		118,336	99,7436
Furthest Extent	10500	ppm		65,8363	56,7709
				Heights (m) for above distances	
				Dia	Noite
Furthest Extent	5250	ppm		0	0
Furthest Extent	10500	ppm		0	0

Explosion Effects: Early Explosion

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

Early Explosions are assumed to be centered at the release location

Explosion Model Used : TNT

			Dia	Noite
Supplied Flammable Mass		kg	65000	65000
Distance (m) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	No Hazard	No Hazard
Overpressure	0,1	bar	No Hazard	No Hazard
Overpressure	0,3	bar	No Hazard	No Hazard
Overpressure	0,4	bar	No Hazard	No Hazard
Used Mass (kg) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	0	0
Overpressure	0,1	bar	0	0
Overpressure	0,3	bar	0	0
Overpressure	0,4	bar	0	0

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Explosion Effects: Late Ignition

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

Explosion Model Used : TNT

Explosion Location Criterion: Cloud Center

All distances are measured from the Source

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

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,05	bar	110,167	109,989
Overpressure	0,1	bar	83,7807	76,9761
Overpressure	0,3	bar	71,2937	52,6642
Overpressure	0,4	bar	70,1511	49,2145

			Supplementary Data at 0,05 bar	
			Dia	Noite
Supplied Flammable Mass		kg	70,9244	138,905
Used Flammable Mass		kg	70,9244	138,905
Overpressure Radius		m	69,5813	87,0561
Distance to:				
- Ignition Source		m	80	70
- Cloud Front/Centre		m	40,5856	22,9328
- Explosion Centre		m	40,5856	22,9328

			Supplementary Data at 0,1 bar	
			Dia	Noite
Supplied Flammable Mass		kg	70,9244	138,905
Used Flammable Mass		kg	70,9244	138,905
Overpressure Radius		m	43,1951	54,0432
Distance to:				
- Ignition Source		m	80	70
- Cloud Front/Centre		m	40,5856	22,9328
- Explosion Centre		m	40,5856	22,9328

			Supplementary Data at 0,3 bar	
			Dia	Noite
Supplied Flammable Mass		kg	2,69004	74,032
Used Flammable Mass		kg	2,69004	74,032
Overpressure Radius		m	7,24682	21,8793
Distance to:				
- Ignition Source		m	100	80
- Cloud Front/Centre		m	64,0469	30,7849
- Explosion Centre		m	64,0469	30,7849

			Supplementary Data at 0,4 bar	
			Dia	Noite
Supplied Flammable Mass		kg	2,69004	74,032
Used Flammable Mass		kg	2,69004	74,032
Overpressure Radius		m	6,10422	18,4296
Distance to:				
- Ignition Source		m	100	80
- Cloud Front/Centre		m	64,0469	30,7849

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

- Explosion Centre	m	64,0469	30,7849
--------------------	---	---------	---------

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H03 - Gasolina Ruptura

		Dia	Noite
Wind Speed	m/s	3	2
Pasquill Stability		C	E
Surface Roughness Length	in	37,4366	37,4366
Surface Roughness Parameter		0,17	0,17
Atmospheric Temperature	degC	25	20
Surface Temperature	degC	30	20
Relative Humidity	fraction	0,8	0,8

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

H04 - Gasolina Furo 10 mm

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

User-Defined Data

Material

Material Identifier	N-HEXANE
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Leak
Phase	Liquid
HoleDiameter	0,3937 in
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
Outdoor Release Direction	Horizontal

Flammable

Jet Fire Method	Cone Model
-----------------	------------

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg

Fireball Parameters

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

Toxic Parameters

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Tail time 1800 s]
[Method of setting time Use a fixed averaging time]
[Cut-off fraction of toxic load 0,05 fraction]
[Cut-off concentration 0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

Discharge Data

User-Defined Quantities

Material N-HEXANE
Temperature 25,00 degC
Pressure 1,01 bar
Inventory 65.000,00 kg
Scenario Leak
Fixed Duration n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction 1,00 fraction
FinalTemperature 25,00 degC
Final Velocity 4,68 m/s
Droplet Diameter 665,42 um

Continuous Release Data:

Mass Flowrate 1.44782E-001 kg/s
Release Duration 600,00 s
Orifice Velocity 4,68 m/s
Exit Pressure 1,01 bar
Exit Temperature 25,00 degC
Discharge Coefficient 0,60
Expanded Radius 0,00 m

Weather: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction 1,00 fraction
FinalTemperature 25,00 degC
Final Velocity 4,68 m/s
Droplet Diameter 665,42 um

Continuous Release Data:

Mass Flowrate 1.44782E-001 kg/s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Release Duration	600,00 s
Orifice Velocity	4,68 m/s
Exit Pressure	1,01 bar
Exit Temperature	25,00 degC
Discharge Coefficient	0,60
Expanded Radius	0,00 m

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Consequence Results

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

			Dia	Noite
		Release Segment 1		
Release Duration	s		600	600
Liquid Rainout	fraction		0,999592	0,999495
Maximum Pool Radius	m		2,19105	2,41353

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

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		Dia	Noite	Distance (m)
UFL (76800)	18,75	s	0,550111		0,454698
LFL (10500)	18,75	s	1,20184		1,05382
LFL Frac (5250)	18,75	s	1,65205		1,45662
Concentration(ppm)	Averaging Time		Dia	Noite	Heights (m) for above distances
UFL (76800)	18,75	s	0		0
LFL (10500)	18,75	s	0		0
LFL Frac (5250)	18,75	s	0		0

Jet Fire Hazard

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

Jet fire method used: DNV recommended

		Dia	Noite
Jet Fire Status		Truncated	Truncated
Flame Direction		Horizontal	Horizontal

Radiation Effects: Jet Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

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

			Dia	Noite	Distance (m)
Radiation Level	3	kW/m2	1,45331		1,55363
Radiation Level	18,3	kW/m2	1,45331		1,55363
Radiation Level	36,1	kW/m2	Not Reached		Not Reached
Radiation Level	71,2	kW/m2	Not Reached		Not Reached

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Jet Fire Distance

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Early Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

	Dia	Noite
Early Pool Fire Status	Hazard	Hazard

Radiation Effects: Early Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

			Dia	Distance (m)
				Noite
Radiation Level	3	kW/m2	10,8589	10,7127
Radiation Level	18,3	kW/m2	5,38393	4,88491
Radiation Level	36,1	kW/m2	2,59012	2,38507
Radiation Level	71,2	kW/m2	1,68593	1,69525

Radiation Effects: Early Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

			Dia	Distance (m)
				Noite
Radiation Level	3	kW/m2	25,0222	25,6314
Radiation Level	18,3	kW/m2	10,7254	10,0295
Radiation Level	36,1	kW/m2	4,96473	4,76186
Radiation Level	71,2	kW/m2	3,20108	3,42355

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

	Dia	Radiation Level (kW/m2) Noite
--	-----	----------------------------------

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

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

			Dia	Distance (m) Noite
Furthest Extent	5250	ppm	1,65205	1,45662
Furthest Extent	10500	ppm	1,20184	1,05382
Heights (m) for above distances				
			Dia	Noite
Furthest Extent	5250	ppm	0	0
Furthest Extent	10500	ppm	0	0

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H04 - Gasolina Furo 10 mm

		Dia	Noite
Wind Speed	m/s	3	2
Pasquill Stability		C	E
Surface Roughness Length	in	37,4366	37,4366
Surface Roughness Parameter		0,17	0,17
Atmospheric Temperature	degC	25	20
Surface Temperature	degC	30	20
Relative Humidity	fraction	0,8	0,8

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

H05 - Diesel Ruptura

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

User-Defined Data

Material

Material Identifier	N-OCTANE
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Catastrophic rupture
Phase	Liquid
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
---------------------	------------------

Flammable

Method to use for explosions	TNT
Jet Fire Method	Cone Model

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg
Use Burst Pressure	No - Use release pressure for fireball

Fireball Parameters

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

Toxic Parameters

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Tail time	1800 s]
[Method of setting time	Use a fixed averaging time]
[Cut-off fraction of toxic load	0,05 fraction]
[Cut-off concentration	0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

Discharge Data

User-Defined Quantities

Material	N-OCTANE
Temperature	25,00 degC
Pressure	1,01 bar
Inventory	65.000,00 kg
Scenario	Catastrophic rupture
Fixed Duration	n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	1,43 m/s
Droplet Diameter	10.000,00 um
Continuous Release Data:	
Mass Flowrate	n/a kg/s
Release Duration	n/a 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: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	1,43 m/s
Droplet Diameter	10.000,00 um
Continuous Release Data:	
Mass Flowrate	n/a kg/s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Release Duration	n/a 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

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

N.B. Pool vaporization segments begin when the cloud has left the pool

		Dia	Noite
Liquid Rainout	fraction	0,999639	0,999734
Initial Vapor Cloud	kg	23,4589	17,2827
Time Pool Left Behind	s	37,6499	75,8499
Cloud Segment 1			
Cloud Segment Duration	s	99,0025	126,563
Pool Vaporization Rate	kg/s	4,27873	2,89596
Cloud Segment 2			
Cloud Segment Duration	s	45,5981	62,5
Pool Vaporization Rate	kg/s	9,37086	5,87991
Cloud Segment 3			
Cloud Segment Duration	s	455,399	410,938
Pool Vaporization Rate	kg/s	12,3814	7,07586
Maximum Pool Radius	m	76,4104	76,3981

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

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		Dia	Noite
UFL (65000)	18,75	s	6,22581	6,10739
LFL (8000)	18,75	s	16,0128	14,4546
LFL Frac (4000)	18,75	s	39,6911	30,1378
Concentration(ppm)	Averaging Time		Dia	Noite
UFL (65000)	18,75	s	0	0
LFL (8000)	18,75	s	0	0
LFL Frac (4000)	18,75	s	0	0

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

			Dia	Distance (m) Noite
Radiation Level	3	kW/m2	202,606	192,815
Radiation Level	18,3	kW/m2	77,9972	77,8573
Radiation Level	36,1	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

	Dia	Radiation Level (kW/m2) Noite
--	-----	----------------------------------

Fireball Hazard

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

	Dia	Noite
Fireball Flame Status	No Hazard	No Hazard

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

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

			Dia	Distance (m) Noite
Furthest Extent	4000	ppm	39,6911	30,1378
Furthest Extent	8000	ppm	16,0128	14,4546

			Dia	Heights (m) for above distances Noite
Furthest Extent	4000	ppm	0	0
Furthest Extent	8000	ppm	0	0

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Explosion Effects: Early Explosion

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

Early Explosions are assumed to be centered at the release location
Explosion Model Used : TNT

Supplied Flammable Mass			Dia	Noite
		kg	65000	65000
Distance (m) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	No Hazard	No Hazard
Overpressure	0,1	bar	No Hazard	No Hazard
Overpressure	0,3	bar	No Hazard	No Hazard
Overpressure	0,4	bar	No Hazard	No Hazard
Used Mass (kg) at Overpressure Levels				
			Dia	Noite
Overpressure	0,05	bar	0	0
Overpressure	0,1	bar	0	0
Overpressure	0,3	bar	0	0
Overpressure	0,4	bar	0	0

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Explosion Effects: Late Ignition

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

Explosion Model Used : TNT

Explosion Location Criterion: Cloud Center

All distances are measured from the Source

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

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,05	bar	36,4992	35,0783
Overpressure	0,1	bar	25,3407	23,8518
Overpressure	0,3	bar	16,2102	14,6506
Overpressure	0,4	bar	14,7745	13,2036

Supplementary Data at 0,05 bar

			Dia	Noite
Supplied Flammable Mass	kg		9,82296	5,50124
Used Flammable Mass	kg		9,82296	5,50124
Overpressure Radius	m		35,9159	29,6046
Distance to:				
- Ignition Source	m		10	20
- Cloud Front/Centre	m		0,583277	5,47371
- Explosion Centre	m		0,583277	5,47371

Supplementary Data at 0,1 bar

			Dia	Noite
Supplied Flammable Mass	kg		5,37519	5,50124
Used Flammable Mass	kg		5,37519	5,50124
Overpressure Radius	m		18,2367	18,3781
Distance to:				
- Ignition Source	m		20	20
- Cloud Front/Centre	m		7,10402	5,47371
- Explosion Centre	m		7,10402	5,47371

Supplementary Data at 0,3 bar

			Dia	Noite
Supplied Flammable Mass	kg		5,37519	5,50124
Used Flammable Mass	kg		5,37519	5,50124
Overpressure Radius	m		9,10621	9,17685
Distance to:				
- Ignition Source	m		20	20
- Cloud Front/Centre	m		7,10402	5,47371
- Explosion Centre	m		7,10402	5,47371

Supplementary Data at 0,4 bar

			Dia	Noite
Supplied Flammable Mass	kg		5,37519	5,50124
Used Flammable Mass	kg		5,37519	5,50124
Overpressure Radius	m		7,67044	7,72994
Distance to:				
- Ignition Source	m		20	20
- Cloud Front/Centre	m		7,10402	5,47371

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

- Explosion Centre	m	7,10402	5,47371
--------------------	---	---------	---------

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H05 - Diesel Ruptura

		Dia	Noite
Wind Speed	m/s	3	2
Pasquill Stability		C	E
Surface Roughness Length	in	37,4366	37,4366
Surface Roughness Parameter		0,17	0,17
Atmospheric Temperature	degC	25	20
Surface Temperature	degC	30	20
Relative Humidity	fraction	0,8	0,8

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

H06 - Diesel Furo 10 mm

Base Case

CASE Name: Data

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

User-Defined Data

Material

Material Identifier	N-OCTANE
Type of Vessel	Unpressurized (at atmospheric pressure)
Pressure Specification	Pressure not used
Discharge Temperature	25 degC
Mass Inventory of material to discharge	6,5E4 kg

Scenario

Type of Event	Leak
Phase	Liquid
HoleDiameter	0,3937 in
Building Wake Option	None
Tank Head	1 m

Location

Release elevation	0 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	No bund present
[Surface type	Concrete]
Height	6 m
[Modelling of bund failure	Bund cannot fail]

Indoor/Outdoor

Location of release	Open air release
Outdoor Release Direction	Horizontal

Flammable

Jet Fire Method	Cone Model
-----------------	------------

Dispersion

Late Ignition Location	No ignition location
Mass Inventory of material to Disperse	6,5E4 kg

Fireball Parameters

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

Toxic Parameters

[Indoor calculations	Unselected]
[Ventilation specification	Case Specified]
[Building exchange rate	4 /hr]

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

[Tail time	1800 s]
[Method of setting time	Use a fixed averaging time]
[Cut-off fraction of toxic load	0,05 fraction]
[Cut-off concentration	0 fraction]

Geometry

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

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

Discharge Data

User-Defined Quantities

Material	N-OCTANE
Temperature	25,00 degC
Pressure	1,01 bar
Inventory	65.000,00 kg
Scenario	Leak
Fixed Duration	n/a s

Calculated Quantities

Weather: Global Weathers\Dia

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	4,78 m/s
Droplet Diameter	665,42 um
Continuous Release Data:	
Mass Flowrate	1.57527E-001 kg/s
Release Duration	600,00 s
Orifice Velocity	4,78 m/s
Exit Pressure	1,01 bar
Exit Temperature	25,00 degC
Discharge Coefficient	0,60
Expanded Radius	0,00 m

Weather: Global Weathers\Noite

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

Average Values for Segment Number 1

Liquid Fraction	1,00 fraction
FinalTemperature	25,00 degC
Final Velocity	4,78 m/s
Droplet Diameter	665,42 um
Continuous Release Data:	
Mass Flowrate	1.57527E-001 kg/s

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Release Duration	600,00 s
Orifice Velocity	4,78 m/s
Exit Pressure	1,01 bar
Exit Temperature	25,00 degC
Discharge Coefficient	0,60
Expanded Radius	0,00 m

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Consequence Results

Pool Vaporization Results

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

			Dia	Noite
		Release Segment 1		
Release Duration	s		600	600
Liquid Rainout	fraction		0,999961	0,999952
Maximum Pool Radius	m		2,82794	2,86751

Distance to Concentration Results

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

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 (65000)	18,75	s		0,471749	0,438507
LFL (8000)	18,75	s		1,19657	1,05
LFL Frac (4000)	18,75	s		1,6144	1,44931
Concentration(ppm)		Averaging Time		Heights (m) for above distances	
				Dia	Noite
UFL (65000)	18,75	s		0	0
LFL (8000)	18,75	s		0	0
LFL Frac (4000)	18,75	s		0	0

Jet Fire Hazard

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

Jet fire method used: DNV recommended

			Dia	Noite
Jet Fire Status			Truncated	Truncated
Flame Direction			Horizontal	Horizontal

Radiation Effects: Jet Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	1,16304	1,19926
Radiation Level	18,3	kW/m2	1,16304	Not Reached
Radiation Level	36,1	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

SUMMARY REPORT

Unique Audit Number:

24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Jet Fire Distance

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Early Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

	Dia	Noite
Early Pool Fire Status	Hazard	Hazard

Radiation Effects: Early Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

			Dia	Distance (m)
				Noite
Radiation Level	3	kW/m2	11,0981	11,0031
Radiation Level	18,3	kW/m2	5,60669	5,16915
Radiation Level	36,1	kW/m2	2,92446	2,69636
Radiation Level	71,2	kW/m2	1,81382	1,82308

Radiation Effects: Early Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

	Dia	Radiation Level (kW/m2)
		Noite

Late Pool Fire Hazard

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

	Dia	Noite
Late Pool Fire Status	Hazard	Hazard

Radiation Effects: Late Pool Fire Ellipse

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

			Dia	Distance (m)
				Noite
Radiation Level	3	kW/m2	26,803	26,2081
Radiation Level	18,3	kW/m2	11,6777	10,6304
Radiation Level	36,1	kW/m2	5,3496	5,04459
Radiation Level	71,2	kW/m2	3,83797	3,87753

SUMMARY REPORT

Unique Audit Number: 24.936



Study Folder: ALL-Rondonópolis

Phast 6.54

Radiation Effects: Late Pool Fire Distance

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

	Dia	Radiation Level (kW/m2) Noite
--	-----	----------------------------------

Flash Fire Envelope

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

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

				Distance (m) Noite
Furthest Extent	4000	ppm	Dia 1,6144	1,44931
Furthest Extent	8000	ppm	1,19657	1,05

				Heights (m) for above distances Noite
Furthest Extent	4000	ppm	Dia 0	0
Furthest Extent	8000	ppm	0	0

Weather Conditions

Path: \ALL-Rondonópolis\ALL\H06 - Diesel Furo 10 mm

			Dia	Noite
Wind Speed		m/s	3	2
Pasquill Stability			C	E
Surface Roughness Length		in	37,4366	37,4366
Surface Roughness Parameter			0,17	0,17
Atmospheric Temperature		degC	25	20
Surface Temperature		degC	30	20
Relative Humidity		fraction	0,8	0,8