SUMMARY REPORT

Unique Audit Number: 40.757

Study Folder: PMLX1_UTGCA

PHAST 6.4

PMLX1_UTGCA

c/ Gás Natural

Ruptura
Base Case

User-Defined Data

Material			
	Material Identifier	METHANE	
	Type of Vessel	Pressurized Gas	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	8,696E5	kg
Scenario			
	Type of Event	Long Pipeline	
	Phase	Vapor	
Pipe			
	Pipe Diameter	863,6	mm
	Line length	7493	m
	Distance To Break	3750	m
	Relative Aperture	1	fraction
	Pumped Inflow	141,5	kg/s
	Pipe Wall Material	Carbon Steel	
	Pipe Wall Thickness	12,7	mm
	Use ambient temperature for pipe temp	No	
Vessel/Tank			
	Building Wake Option	None	
	Averaging used for time varying	Overall Average	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	8,696E5	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	

Use 5th Confined Source	No	
Use 6th Confined Source	No	
Use 7th Confined Source	No	
Confined Strength 1	5	
Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities

Material	METHANE	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	869.592,31	kg
Scenario	Long Pipeline	

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	0,00	fraction
FinalTemperature	14,52	degC
Final Velocity	403,03	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.09245E+002	kg/s
Release Duration	3.600,00	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: Global Weathers\Noite

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

Average Values for Segment Number **1**

Liquid Fraction	0,00	fraction
FinalTemperature	14,52	degC
Final Velocity	403,03	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.09245E+002	kg/s
Release Duration	3.600,00	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

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)
				Dia	Noite
UFL	(165000)	18,75	s	0,947715	1,32699
LFL	(44000)	18,75	s	7,91971	11,0394
LFL Frac	(22000)	18,75	s	15,7924	24,9236

Concentration(ppm)		Averaging Time			Heights (m) for above distances
				Dia	Noite
UFL	(165000)	18,75	s	17,27	21,6603
LFL	(44000)	18,75	s	34,038	43,396
LFL Frac	(22000)	18,75	s	41,2014	54,2906

Jet Fire Hazard

			Dia	Noite
Jet Fire Status			Hazard	Hazard
Flame Direction			Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	178,294	177,284
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	22000	ppm	15,7924	24,9236
Furthest Extent	44000	ppm	7,91971	11,0394

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	46,9705	59,2044
Overpressure	0,05	bar	83,8556	98,3173

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			

Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary Data at 0,1 bar	
		Dia	Noite
Supplied Flammable Mass	kg	79,3206	119,226
Used Flammable Mass			
Overpressure Radius	m	36,9705	39,2044
Distance to:			
- Ignition Source	m	10	20
- Cloud Front/Centre	m	10	20
- Explosion Centre	m	10	20

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

SUMMARY REPORT

Unique Audit Number: 40.757

Study Folder: PMLX1_UTGCA

PHAST 6.4

Ruptura_Bola de Fogo

Base Case

Data

Weather: Global Weathers\Dia

Speed: 5,10 m/s **Stability: B**

\PMLX1_UTGCA\c/ Gás Natural\Ruptura_Bola de Fogo

Correlation Type HSE Model

Flame Data

User-Defined Quantities

Ambient Temperature	Material	24,30	METHANE
degC			
Ambient Relative Humidity		0,78	fraction
Flammable Mass		133016.28	kg
Vapor Fraction		1,00	fraction

Input and/or Output Quantities	**Input**	**Output**	
Fireball Radius		147,45	m
Fireball Duration		18,58	s
Flame Emissive Power		400,00	kW/m2

Flame Co-ordinates

X	Z	R	Phi
m	m	m	deg
0,00	0,00	0,00	0,00
0,00	8,89	50,43	0,00
0,00	34,50	94,78	0,00
0,00	73,73	127,70	0,00
0,00	121,85	145,21	0,00
0,00	173,06	145,21	0,00
0,00	221,18	127,70	0,00
0,00	260,41	94,78	0,00
0,00	286,02	50,43	0,00
0,00	294,91	0,00	0,00

Ellipse Results

User-Defined Quantities

Observer Inclination	Variable	deg
Observer Orientation	Variable	deg
Exposure Duration	18,58	s

Radiation Intensity Ellipse

Calculated Quantities

Incident Radiation Level:	**3,00**	kW/m2
Lethality Level	0,00	%
View Factor	0,01	
Probit Level	-3,67	

Dose Level	803.595,72	(W/m2)^Probit N.s
Downwind semi-axis (A)	1.124,48	m
Crosswind semi-axis (B)	1.124,48	m
Offset Ratio (D)	0,00	
Effect Distance	1.124,48	m
Area	3.972.397,91	m2
Incident Radiation Level:	**18,30**	kW/m2
Lethality Level	0,62	%
View Factor	0,05	
Probit Level	2,50	
Dose Level	8.956.078,39	(W/m2)^Probit N.s
Downwind semi-axis (A)	484,03	m
Crosswind semi-axis (B)	484,03	m
Offset Ratio (D)	0,00	
Effect Distance	484,03	m
Area	736.021,17	m2
Incident Radiation Level:	**36,10**	kW/m2
Lethality Level	42,88	%
View Factor	0,09	
Probit Level	4,82	
Dose Level	22.157.267,49	(W/m2)^Probit N.s
Downwind semi-axis (A)	344,02	m
Crosswind semi-axis (B)	344,02	m
Offset Ratio (D)	0,00	
Effect Distance	344,02	m
Area	371.815,81	m2

Radiation Lethality Ellipse

Lethality Level:	**1,00**	%		
Intensity Level	19,25	kW/m2		
View Factor	0,05			
Probit Level	2,67			
Dose Level	9.578.854,48	(W/m2)^Probit N.s		
Downwind semi-axis (A)	472,20	m		
Crosswind semi-axis (B)	472,20	m		
Offset Ratio (D)	Effect Distance	472,20	0,00	m
Area	700.483,49	m2		
Lethality Level:	**50,00**	%		
Intensity Level	38,05	kW/m2		
View Factor	0,10			
Probit Level	5,00			
Dose Level	23.766.251,82	(W/m2)^Probit N.s		
Downwind semi-axis (A)	334,60	m		
Crosswind semi-axis (B)	334,60	m		
Offset Ratio (D)	Effect Distance	334,60	0,00	m
Area	351.719,62	m2		
Lethality Level:	**99,00**	%		
Intensity Level	75,22	kW/m2		
View Factor	0,19			
Probit Level	7,33			
Dose Level	58.968.240,23	(W/m2)^Probit N.s		

Downwind semi-axis (A)		225,61	m	
Crosswind semi-axis (B)		225,61	m	
Offset Ratio (D)	Effect Distance	225,61	0,00	m
Area		159.907,58	m2	

Radiation Distance

User-Defined Quantities

Maximum Distance	1.124,48	m
Angle from Wind Direction	0,00	deg
Height above Origin	0,00	m
Observer Inclination	Variable	deg
Observer Orientation	Variable	deg

Calculated Quantities

X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
0,00			400,00		
22,95			353,24		
45,90			301,40		
68,85			255,29		
91,79			213,41		
114,74			178,08		
137,69			147,53		
160,64			122,64		
183,59			102,53		
206,54			86,31		
229,49			73,20		
252,43			62,55		
275,38			54,31		
298,33			47,06		
321,28			41,06		
344,23			36,06		
367,18			31,69		
390,13			28,17		
413,07			25,18		
436,02			22,61		
458,97			20,39		
481,92			18,46		
504,87			16,79		
527,82			15,31		
550,77			14,02		
573,71			12,87		
596,66			11,86		
619,61			10,95		
642,56			10,14		
665,51			9,41		
688,46			8,75		
711,41			8,16		
734,35			7,62		
757,30			7,13		
780,25			6,69		
803,20			6,28		
826,15			5,91		

849,10	5,56
872,05	5,25
894,99	4,96
917,94	4,69
940,89	4,45
963,84	4,22
986,79	4,00
1.009,74	3,81
1.032,69	3,62
1.055,63	3,45
1.078,58	3,29
1.101,53	3,14
1.124,48	3,00

Weather: **Global Weathers\Noite**
Speed: **4,50** **m/s** **Stability: E**
\PMLX1_UTGCA\c/ Gás Natural\Ruptura_Bola de Fogo
Correlation Type HSE Model

Flame Data

User-Defined Quantities

Ambient Temperature	Material	22,10	METHANE
degC			
Ambient Relative Humidity		0,85	fraction
Flammable Mass		133016.28	kg
Vapor Fraction		1,00	fraction

Input and/or Output Quantities	**Input**	**Output**	
Fireball Radius		147,45	m
Fireball Duration		18,58	s
Flame Emissive Power		400,00	kW/m2

Flame Co-ordinates

X	**Z**	**R**	**Phi**
m	m	m	deg
0,00	0,00	0,00	0,00
0,00	8,89	50,43	0,00
0,00	34,50	94,78	0,00
0,00	73,73	127,70	0,00
0,00	121,85	145,21	0,00
0,00	173,06	145,21	0,00
0,00	221,18	127,70	0,00
0,00	260,41	94,78	0,00
0,00	286,02	50,43	0,00
0,00	294,91	0,00	0,00

Ellipse Results

User-Defined Quantities

Observer Inclination	Variable	deg
Observer Orientation	Variable	deg
Exposure Duration	18,58	s

Radiation Intensity Ellipse

Calculated Quantities

Incident Radiation Level:	**3,00**	kW/m2
Lethality Level	0,00	%
View Factor	0,01	
Probit Level	-3,67	
Dose Level	803.595,72	(W/m2)^Probit N.s
Downwind semi-axis (A)	1.128,60	m
Crosswind semi-axis (B)	1.128,60	m
Offset Ratio (D)	0,00	
Effect Distance	1.128,60	m
Area	4.001.597,83	m2
Incident Radiation Level:	**18,30**	kW/m2
Lethality Level	0,62	%
View Factor	0,05	
Probit Level	2,50	
Dose Level	8.956.078,39	(W/m2)^Probit N.s
Downwind semi-axis (A)	485,47	m
Crosswind semi-axis (B)	485,47	m
Offset Ratio (D)	0,00	
Effect Distance	485,47	m
Area	740.401,38	m2
Incident Radiation Level:	**36,10**	kW/m2
Lethality Level	42,88	%
View Factor	0,09	
Probit Level	4,82	
Dose Level	22.157.267,49	(W/m2)^Probit N.s
Downwind semi-axis (A)	345,00	m
Crosswind semi-axis (B)	345,00	m
Offset Ratio (D)	0,00	
Effect Distance	345,00	m
Area	373.926,95	m2

Radiation Lethality Ellipse

Lethality Level:	**1,00**	%		
Intensity Level	19,25	kW/m2		
View Factor	0,05			
Probit Level	2,67			
Dose Level	9.578.854,48	(W/m2)^Probit N.s		
Downwind semi-axis (A)	473,59	m		
Crosswind semi-axis (B)	473,59	m		
Offset Ratio (D)	Effect Distance	473,59	0,00	m
Area	704.634,51	m2		
Lethality Level:	**50,00**	%		
Intensity Level	38,05	kW/m2		
View Factor	0,10			
Probit Level	5,00			

Dose Level	23.766.251,82	(W/m2)^Probit N.s		
Downwind semi-axis (A)	335,55	m		
Crosswind semi-axis (B)	335,55	m		
Offset Ratio (D)	Effect Distance	335,55	0,00	m
Area	353.713,97	m2		
Lethality Level:	**99,00**	%		
Intensity Level	75,22	kW/m2		
View Factor	0,19			
Probit Level	7,33			
Dose Level	58.968.240,23	(W/m2)^Probit N.s		
Downwind semi-axis (A)	226,27	m		
Crosswind semi-axis (B)	226,27	m		
Offset Ratio (D)	Effect Distance	226,27	0,00	m
Area	160.839,67	m2		

Radiation Distance

User-Defined Quantities

Maximum Distance	1.128,60	m
Angle from Wind Direction	0,00	deg
Height above Origin	0,00	m
Observer Inclination	Variable	deg
Observer Orientation	Variable	deg

Calculated Quantities

X Coordinates m	Y Coordinates m	Z Coordinates m	Incident Radiation kW/m2	Lethality Level %	View Factor
0,00			400,00		
23,03			353,61		
46,07			301,76		
69,10			255,54		
92,13			213,54		
115,16			178,10		
138,20			147,49		
161,23			122,57		
184,26			102,44		
207,29			86,21		
230,33			73,11		
253,36			62,47		
276,39			54,23		
299,43			46,98		
322,46			40,99		
345,49			36,00		
368,52			31,64		
391,56			28,13		
414,59			25,14		
437,62			22,57		
460,65			20,36		
483,69			18,44		
506,72			16,76		
529,75			15,29		
552,79			14,00		
575,82			12,86		

598,85	11,84
621,88	10,94
644,92	10,13
667,95	9,40
690,98	8,74
714,02	8,15
737,05	7,61
760,08	7,13
783,11	6,68
806,15	6,27
829,18	5,90
852,21	5,56
875,24	5,25
898,28	4,96
921,31	4,69
944,34	4,44
967,38	4,22
990,41	4,00
1.013,44	3,81
1.036,47	3,62
1.059,51	3,45
1.082,54	3,29
1.105,57	3,14
1.128,60	3,00

Fenda Impinge
Base Case

User-Defined Data

Material			
	Material Identifier	METHANE	
	Type of Vessel	Pressurized Gas	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	8,696E5	kg
Scenario			
	Type of Event	Leak	
	Phase	Vapor	
	Hole Diameter	172,7	mm
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Horizontal Impingement	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	8,696E5	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities

Material	METHANE	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	869.592,31	kg
Scenario	Leak	

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	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	3.90076E+002	kg/s
Release Duration	2.229,29	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,49	m

Weather: Global Weathers\Noite

Mass Flow of Air (Vent from Vapor Space Only)	n/a	
Average Values for Segment Number	**1**	
Liquid Fraction	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	3.90076E+002	kg/s
Release Duration	2.229,29	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,49	m

Consequence Results

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) Dia	Noite
UFL	(165000)	18,75	s	69,0917	92,9005
LFL	(44000)	18,75	s	192,174	269,09
LFL Frac	(22000)	18,75	s	314,173	541,152

Concentration(ppm)		Averaging Time		Heights (m) for above distances Dia	Noite
UFL	(165000)	18,75	s	0	0
LFL	(44000)	18,75	s	0	0

LFL Frac (22000)	18,75	s	0	0

Jet Fire Hazard

			Dia	Noite
Jet Fire Status			Hazard	Hazard
Flame Direction			Impinged	Impinged

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	173,498	173,47
Radiation Level	18,3	kW/m2	109,079	110,641
Radiation Level	36	kW/m2	97,5607	99,133
Radiation Level	71,2	kW/m2	88,0867	89,6233

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	22000	ppm	314,173	541,152
Furthest Extent	44000	ppm	192,174	269,09

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	349,104	579,204
Overpressure	0,05	bar	388,122	618,317

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0

Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary	Data at 0,1 bar
		Dia	Noite
Supplied Flammable Mass	kg	4657,12	7302,1
Used Flammable Mass			
Overpressure Radius	m	39,1037	39,2044
Distance to:			
- Ignition Source	m	310	540
- Cloud Front/Centre	m	310	540
- Explosion Centre	m	310	540

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

Fenda Vertical
Base Case

User-Defined Data

Material			
	Material Identifier	METHANE	
	Type of Vessel	Pressurized Gas	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	8,696E5	kg
Scenario			
	Type of Event	Leak	
	Phase	Vapor	
	Hole Diameter	172,7	mm
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	8,696E5	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities

Material	METHANE	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	869.592,31	kg
Scenario	Leak	

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	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	3.90076E+002	kg/s
Release Duration	2.229,29	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,49	m

Weather: Global Weathers\Noite

Mass Flow of Air (Vent from Vapor Space Only)	n/a	
Average Values for Segment Number	**1**	
Liquid Fraction	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	3.90076E+002	kg/s
Release Duration	2.229,29	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,49	m

Consequence Results

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) Dia	Noite
UFL	(165000)	18,75	s	1,16695	1,41354
LFL	(44000)	18,75	s	9,44655	13,3826
LFL Frac	(22000)	18,75	s	20,0547	35,203

Concentration(ppm)		Averaging Time		Heights (m) for above distances Dia	Noite
UFL	(165000)	18,75	s	24,1612	27,7978
LFL	(44000)	18,75	s	46,937	57,4144

LFL Frac (22000)	18,75	s	57,0937	73,2689

Jet Fire Hazard

			Dia	Noite
Jet Fire Status			Hazard	Hazard
Flame Direction			Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	214,759	216,571
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	22000	ppm	20,0547	35,203
Furthest Extent	44000	ppm	9,44655	13,3826

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	59,1037	69,2044
Overpressure	0,05	bar	98,1219	108,317

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			

- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary	Data at 0,1 bar
		Dia	Noite
Supplied Flammable Mass	kg	170,243	236,512
Used Flammable Mass			
Overpressure Radius	m	39,1037	39,2044
Distance to:			
- Ignition Source	m	20	30
- Cloud Front/Centre	m	20	30
- Explosion Centre	m	20	30

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

Furo Impinge
Base Case

User-Defined Data

Material			
	Material Identifier	METHANE	
	Type of Vessel	Pressurized Gas	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	8,696E5	kg
Scenario			
	Type of Event	Leak	
	Phase	Vapor	
	Hole Diameter	43,18	mm
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Horizontal Impingement	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	8,696E5	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities

Material	METHANE	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	869.600,00	kg
Scenario	Leak	

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	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.43798E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,12	m

Weather: Global Weathers\Noite

Mass Flow of Air (Vent from Vapor Space Only)	n/a	
Average Values for Segment Number **1**		
Liquid Fraction	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.43798E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,12	m

Consequence Results

Jet Fire Hazard

	Dia	Noite
Jet Fire Status	Hazard	Hazard
Flame Direction	Impinged	Impinged

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	47,1466	47,1996
Radiation Level	18,3	kW/m2	31,5858	32,0713
Radiation Level	36	kW/m2	28,4782	28,9574
Radiation Level	71,2	kW/m2	25,7956	26,2494

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	22000	ppm	76,625	122,79
Furthest Extent	44000	ppm	47,4053	66,8645

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	109,104	159,204
Overpressure	0,05	bar	148,122	198,317

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,1 bar	
		Dia	Noite
Supplied Flammable Mass	kg	118,577	214,298
Used Flammable Mass			
Overpressure Radius	m	39,1037	39,2044
Distance to:			
- Ignition Source	m	70	120
- Cloud Front/Centre	m	70	120
- Explosion Centre	m	70	120

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5

Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

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)	
			Dia	Noite
UFL (165000)	18,75	s	17,2011	22,9662
LFL (44000)	18,75	s	47,4053	66,8645
LFL Frac (22000)	18,75	s	76,625	122,79

Concentration(ppm)	Averaging Time		Heights (m) for above distances	
			Dia	Noite
UFL (165000)	18,75	s	0	0
LFL (44000)	18,75	s	0	0
LFL Frac (22000)	18,75	s	0	0

Furo Vertical
Base Case

User-Defined Data

Material			
	Material Identifier	METHANE	
	Type of Vessel	Pressurized Gas	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	8,696E5	kg
Scenario			
	Type of Event	Leak	
	Phase	Vapor	
	Hole Diameter	43,18	mm
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	8,696E5	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities

Material	METHANE	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	869.592,31	kg
Scenario	Leak	

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	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.43798E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,12	m

Weather: Global Weathers\Noite

Mass Flow of Air (Vent from Vapor Space Only)	n/a	
Average Values for Segment Number	**1**	
Liquid Fraction	0,00	fraction
FinalTemperature	-81,49	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	2.43798E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	393,68	m/s
Exit Pressure	53,08	bar
Exit Temperature	-21,64	degC
Discharge Coefficient	0,87	
Expanded Radius	0,12	m

Consequence Results

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) Dia	Noite
UFL	(165000)	18,75	s	0,250959	0,223393
LFL	(44000)	18,75	s	1,9142	2,86248
LFL Frac	(22000)	18,75	s	4,41589	6,9939

Concentration(ppm)		Averaging Time		Heights (m) for above distances Dia	Noite
UFL	(165000)	18,75	s	6,99039	7,97801
LFL	(44000)	18,75	s	14,6655	18,7271

LFL Frac (22000)	18,75	s	18,3192	24,1786

Jet Fire Hazard

			Dia	Noite
Jet Fire Status			Hazard	Hazard
Flame Direction			Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	62,053	61,4944
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	22000	ppm	4,41589	6,9939
Furthest Extent	44000	ppm	1,9142	2,86248

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

c/ Condensado

Ruptura
Base Case

User-Defined Data

Material			
	Material Identifier	Condensado	
	Material to Track	Condensado	
	Type of Vessel	Padded Liquid	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	7,995E6	kg
Scenario			
	Type of Event	Line rupture	
	Phase	Liquid	
	Supply Pump Head	No	
	Tank Head	0	m
	Number of Excess Flow Valves	0	
	Number of Non-Return Valves	0	
	Number of Shut-Off Valves	0	
Pipe			
	Pipe Diameter	863,6	mm
	Line length	3747	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	7,995E6	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	

Confined Strength 1	5
Confined Volume 1	1500 m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities		
Material	Condensado	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	7.995.258,50	kg
Scenario	Line rupture	
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	0,47	fraction
FinalTemperature	-145,68	degC
Final Velocity	375,68	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	6.14581E+003	kg/s
Release Duration	1.300,93	s
Orifice Velocity	21,19	m/s
Exit Pressure	38,21	bar
Exit Temperature	26,41	degC
Discharge Coefficient	0,73	
Expanded Radius	0,60	m
Weather: Global Weathers\Noite		
Mass Flow of Air (Vent from Vapor Space Only)	n/a	
Average Values for Segment Number **1**		
Liquid Fraction	0,47	fraction
FinalTemperature	-145,68	degC
Final Velocity	375,68	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	6.14581E+003	kg/s
Release Duration	1.300,93	s
Orifice Velocity	21,19	m/s
Exit Pressure	38,21	bar
Exit Temperature	26,41	degC
Discharge Coefficient	0,73	
Expanded Radius	0,60	m

Consequence Results

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)	
		Dia	Noite

UFL	(96976,2)	18,75	s	6,73044	6,56196
LFL	(15922)	18,75	s	46,5727	79,9173
LFL Frac	(7960,98)	18,75	s	94,8346	201,834

Concentration(ppm)		Averaging Time		Heights (m) for above distances	
				Dia	Noite
UFL	(96976,2)	18,75	s	88,6547	93,7206
LFL	(15922)	18,75	s	158,486	184,364
LFL Frac	(7960,98)	18,75	s	179,767	219,659

Jet Fire Hazard

	Dia	Noite
Jet Fire Status	Hazard	Hazard
Flame Direction	Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	932,555	910,787
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	7960,98	ppm	94,8346	201,834
Furthest Extent	15922	ppm	46,5727	79,9173

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	137,627	247,755
Overpressure	0,05	bar	185,151	295,407

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable

- Explosion Centre	m	0	0
		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary Data at 0,1 bar	
		Dia	Noite
Supplied Flammable Mass	kg	8036,45	12285,9
Used Flammable Mass			
Overpressure Radius	m	47,6273	47,7554
Distance to:			
- Ignition Source	m	90	200
- Cloud Front/Centre	m	90	200
- Explosion Centre	m	90	200

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

Fenda Impinge
Base Case

User-Defined Data

Material			
	Material Identifier	Condensado	
	Material to Track	Condensado	
	Type of Vessel	Padded Liquid	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	7,995E6	kg
Scenario			
	Type of Event	Leak	
	Phase	Liquid	
	Hole Diameter	172,7	mm
	Tank Head	0	m
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Horizontal Impingement	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	7,995E6	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities		
Material	Condensado	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	7.995.258,50	kg
Scenario	Leak	
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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	1.41136E+003	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,03	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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	1.41136E+003	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,03	m

Consequence Results

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) Dia	Noite
UFL	(96976,2)	18,75	s	96,7524	157,934
LFL	(15922)	18,75	s	241,217	331,911
LFL Frac	(7960,98)	18,75	s	357,066	490,789

Concentration(ppm)	Averaging Time	Heights (m) for above distances

				Dia	Noite
UFL	(96976,2)	18,75	s	0	0
LFL	(15922)	18,75	s	0	0
LFL Frac	(7960,98)	18,75	s	0	0

Jet Fire Hazard

	Dia	Noite
Jet Fire Status	Hazard	Hazard
Flame Direction	Impinged	Impinged

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	494,621	501,555
Radiation Level	18,3	kW/m2	380,199	387,453
Radiation Level	36	kW/m2	347,577	354,502
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	7960,98	ppm	357,066	490,789
Furthest Extent	15922	ppm	241,217	331,911

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	397,627	537,755
Overpressure	0,05	bar	445,151	585,407

Supplementary Data at 0,4 bar

		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

Supplementary Data at 0,3 bar

		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,1 bar	
		Dia	Noite
Supplied Flammable Mass	kg	25859,7	52171,4
Used Flammable Mass			
Overpressure Radius	m	47,6273	47,7554
Distance to:			
- Ignition Source	m	350	490
- Cloud Front/Centre	m	350	490
- Explosion Centre	m	350	490

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

Fenda Vertical
Base Case

User-Defined Data

Material			
	Material Identifier	Condensado	
	Material to Track	Condensado	
	Type of Vessel	Padded Liquid	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	7,995E6	kg
Scenario			
	Type of Event	Leak	
	Phase	Liquid	
	Hole Diameter	172,7	mm
	Tank Head	0	m
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	7,995E6	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities		
Material	Condensado	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	7.995.258,50	kg
Scenario	Leak	
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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	1.41136E+003	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,03	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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	1.41136E+003	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,03	m

Consequence Results

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) Dia	Noite
UFL	(96976,2)	18,75	s	1,18404	1,53085
LFL	(15922)	18,75	s	15,8938	25,2294
LFL Frac	(7960,98)	18,75	s	34,965	59,3796

Concentration(ppm)	Averaging Time	Heights (m) for above distances Dia	Noite

UFL	(96976,2)	18,75	s	38,2323	42,5039
LFL	(15922)	18,75	s	86,0684	100,641
LFL Frac	(7960,98)	18,75	s	102,619	123,803

Jet Fire Hazard

	Dia	Noite
Jet Fire Status	Hazard	Hazard
Flame Direction	Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	432,431	418,752
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	7960,98	ppm	34,965	59,3796
Furthest Extent	15922	ppm	15,8938	25,2294

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	77,6273	97,7554
Overpressure	0,05	bar	125,151	145,407

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable

Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,1 bar	
		Dia	Noite
Supplied Flammable Mass	kg	909,205	1294,55
Used Flammable Mass			
Overpressure Radius	m	47,6273	47,7554
Distance to:			
- Ignition Source	m	30	50
- Cloud Front/Centre	m	30	50
- Explosion Centre	m	30	50

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

Furo Impinge
Base Case

User-Defined Data

Material			
	Material Identifier	Condensado	
	Material to Track	Condensado	
	Type of Vessel	Padded Liquid	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	7,995E6	kg
Scenario			
	Type of Event	Leak	
	Phase	Liquid	
	Hole Diameter	43,18	mm
	Tank Head	0	m
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Horizontal Impingement	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	7,995E6	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities		
Material	Condensado	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	7.995.258,50	kg
Scenario	Leak	
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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	8.82101E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,01	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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	8.82101E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,01	m

Consequence Results

Distance to Concentration Results

All flammable results are reported at the cloud centreline height

Concentration(ppm)		Averaging Time		Distance (m) Dia	Noite
UFL	(96976,2)	18,75	s	24,0722	35,4846
LFL	(15922)	18,75	s	65,0417	81,0315
LFL Frac	(7960,98)	18,75	s	101,209	118,819

Concentration(ppm)		Averaging Time		Heights (m) for above distances Dia	Noite
UFL	(96976,2)	18,75	s	0	0
LFL	(15922)	18,75	s	0	0

LFL Frac (7960,98)	18,75	s	0	0

Jet Fire Hazard

			Dia	Noite
Jet Fire Status			Hazard	Hazard
Flame Direction			Impinged	Impinged

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	144,679	146,792
Radiation Level	18,3	kW/m2	112,027	114,245
Radiation Level	36	kW/m2	100,989	102,861
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	7960,98	ppm	101,209	118,819
Furthest Extent	15922	ppm	65,0417	81,0315

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level	
			Dia	Noite
Overpressure	0,4	bar	Not Reachable	Not Reachable
Overpressure	0,3	bar	Not Reachable	Not Reachable
Overpressure	0,1	bar	147,627	157,755
Overpressure	0,05	bar	195,151	205,407

		Supplementary Data at 0,4 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			
- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0

		Supplementary Data at 0,3 bar	
		Dia	Noite
Supplied Flammable Mass	kg	Not Reachable	Not Reachable
Used Flammable Mass			
Overpressure Radius	m	0	0
Distance to:			

- Ignition Source	m	Not Reachable	Not Reachable
- Cloud Front/Centre	m	Not Reachable	Not Reachable
- Explosion Centre	m	0	0
		Supplementary	Data at 0,1 bar
		Dia	Noite
Supplied Flammable Mass	kg	668,923	1218,42
Used Flammable Mass			
Overpressure Radius	m	47,6273	47,7554
Distance to:			
- Ignition Source	m	100	110
- Cloud Front/Centre	m	100	110
- Explosion Centre	m	100	110

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854

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

Furo Vertical
Base Case

User-Defined Data

Material			
	Material Identifier	Condensado	
	Material to Track	Condensado	
	Type of Vessel	Padded Liquid	
	Pressure Specification	Pressure specified	
	Discharge Pressure (gauge)	100	bar
	Discharge Temperature	25	degC
	Inventory of material to discharge	7,995E6	kg
Scenario			
	Type of Event	Leak	
	Phase	Liquid	
	Hole Diameter	43,18	mm
	Tank Head	0	m
Pipe			
	Line length	3E4	m
Vessel/Tank			
	Building Wake Option	None	
Location			
	Elevation	0	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	No bund present	
	[Type of Bund Surface	Concrete]	
	[Bund Height	0	m]
	[Bund Failure Modeling	Bund cannot fail]	
Indoor/Outdoor			
	Outdoor Release Direction	Vertical	
Flammable			
	Method to use for explosions	Multi-Energy	
	Jet Fire Method	Shell	
Dispersion			
	Ignition Location	No ignition location	
	Inventory of material to Disperse	7,995E6	kg
Multi Energy Explosion			
	Use Unconfined Volumes	No	
	Use Fractions	No	
	Use 1st Confined Source	Yes	
	Use 2nd Confined Source	No	
	Use 3rd Confined Source	No	
	Use 4th Confined Source	No	
	Use 5th Confined Source	No	
	Use 6th Confined Source	No	
	Use 7th Confined Source	No	
	Confined Strength 1	5	
	Confined Volume 1	1500	m3

CASE Name: **Data**

Discharge Data

User-Defined Quantities		
Material	Condensado	
Temperature	25,00	degC
Pressure	101,01	bar
Inventory	7.995.258,50	kg
Scenario	Leak	
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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	8.82101E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,01	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	-145,68	degC
Final Velocity	500,00	m/s
Droplet Diameter	0,00	mm
Continuous Release Data:		
Mass Flowrate	8.82101E+001	kg/s
Release Duration	3.600,00	s
Orifice Velocity	200,28	m/s
Exit Pressure	1,01	bar
Exit Temperature	20,72	degC
Discharge Coefficient	0,60	
Expanded Radius	0,01	m

Consequence Results

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) Dia	Distance (m) Noite
UFL	(96976,2)	18,75	s	0,246397	0,265887
LFL	(15922)	18,75	s	3,62949	4,91574
LFL Frac	(7960,98)	18,75	s	8,17704	12,337

Concentration(ppm)	Averaging Time	Heights (m) for above distances Dia	Heights (m) for above distances Noite

UFL	(96976,2)	18,75	s	11,4765	12,3584
LFL	(15922)	18,75	s	26,9013	32,8332
LFL Frac	(7960,98)	18,75	s	32,9718	41,4261

Jet Fire Hazard

	Dia	Noite
Jet Fire Status	Hazard	Hazard
Flame Direction	Vertical	Vertical

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

			Distance (m)	
			Dia	Noite
Radiation Level	3	kW/m2	117,119	111,415
Radiation Level	18,3	kW/m2	Not Reached	Not Reached
Radiation Level	36	kW/m2	Not Reached	Not Reached
Radiation Level	71,2	kW/m2	Not Reached	Not Reached

Flash Fire Envelope

All flammable results are reported at the cloud centreline height

			Distance (m)	
			Dia	Noite
Furthest Extent	7960,98	ppm	8,17704	12,337
Furthest Extent	15922	ppm	3,62949	4,91574

Explosion Effects: Late Ignition

Explosion Model Used : Multi Energy
Explosion Location Criterion: Cloud Front (LFL Fraction)
All distances are measured from the Source
All flammable results are reported at the cloud centreline height

			Maximum Distance (m) at Overpressure Level
			Noite
Overpressure	0,4	bar	Not Reachable
Overpressure	0,3	bar	Not Reachable
Overpressure	0,1	bar	35,1968
Overpressure	0,05	bar	60,3448

		Supplementary Data at 0,4 bar
		Noite
Supplied Flammable Mass	kg	Not Reachable
Used Flammable Mass		
Overpressure Radius	m	0
Distance to:		
- Ignition Source	m	Not Reachable
- Cloud Front/Centre	m	Not Reachable
- Explosion Centre	m	0

		Supplementary Data at 0,3 bar
		Noite
Supplied Flammable Mass	kg	Not Reachable
Used Flammable Mass		

Overpressure Radius	m	0
Distance to:		
- Ignition Source	m	Not Reachable
- Cloud Front/Centre	m	Not Reachable
- Explosion Centre	m	0

		Supplementary Data at 0,1 bar Noite
Supplied Flammable Mass	kg	27,6971
Used Flammable Mass		
Overpressure Radius	m	25,1968
Distance to:		
- Ignition Source	m	10
- Cloud Front/Centre	m	10
- Explosion Centre	m	10

Weather Conditions

		Dia	Noite
Wind Speed	m/s	5,1	4,5
Pasquill Stability		B	E
Surface Roughness Parameter		0,33	0,33
Atmospheric Temperature	degC	24,3	22,1
Surface Temperature	degC	24,3	22,1
Relative Humidity	fraction	0,784	0,854