



## Input Report

Workspace: 2024.09.18.ACL.SPT

SPT

Study

2024.09.19.ACL.SPT

Tab	Group	Field	Value
Context of calculations	Selection of context	Weathers to use for this study	Weather folder
		Parameters to use for this study	Parameter set
		Obstructions to use for this study	Multi-Energy obstruction set
Bund, building and terrain	Terrain and bund definition	Type of terrain for dispersion	Default terrain
		Type of pool substrate and bunds	No bund
Toxic parameters	Indoor toxic calculations	Specify the downwind building type	Unselected
		Building type (downwind building type)	Buildings\Building type



### 41. Palete TDI - AEGL3

Atmospheric storage tank

2024.09.18.ACL.SPT\SPT

Tab	Group	Field	Value	Units
Material	Material	Material	TDI	
		Specify volume inventory?	No	
		Mass inventory	800	kg
		Volume inventory	0,921139	m3
		Material to track	TDI	
	Phase	Specified condition	Temperature and atmospheric pressure	
		Temperature	20	degC
		Pressure (gauge)		bar
		Fluid state	Liquid	
		Liquid mole fraction	1	fraction
Scenario	Pipe dimensions	Pipe length		m
	Release location	Elevation	0	m
		Tank head	0	m
	Direction	Outdoor release direction	Horizontal	
		Outdoor release angle	0	deg
Discharge parameters	Model settings	Atmospheric expansion method	DNV recommended	
		Phase change upstream of orifice?	Disallow liquid phase change only (metastable liquid)	

	Droplet break-up mechanism	Droplet break-up mechanism - instantaneous	Use flashing correlation	
		Droplet break-up mechanism - continuous	Do not force correlation	
Short pipe	Pipe characteristics	Pipe roughness	0,045	mm
	Frequencies	Frequency of bends in pipe	0	/m
		Frequency of couplings in pipe	0	/m
		Frequency of junctions in pipe	0	/m
	Frequencies of valves	Frequency of excess flow valves	0	/m
		Frequency of non-return valves	0	/m
		Frequency of shut-off valves	0	/m
	Velocity head losses	Excess flow valve velocity head losses	0	
		Non-return valve velocity head losses	0	
		Shut-off valve velocity head losses	0	
Time varying releases	Modelling of time-varying leaks and line ruptures	Vacuum relief valve	Operating	
		Vacuum relief valve set point	0,45	bar
	Inventory data for time-varying releases	Tank volume	0,921139	m3
		Tank vapour volume	0	m3
		Tank liquid volume	0,921139	m3
		Tank liquid level	0	m

		Maximum vapour release height		m
		Minimum mass inventory	0	kg
		Maximum mass inventory	1E+09	kg
Dispersion	User-defined dispersion scope (N.B Based on the material to track)	Concentrations of interest	0,51	ppm
		Distances of interest	100; 250; 500	m
		Averaging time for concentrations and distances of interest	ERPG	
		Specify user-defined averaging time	Yes	
		User defined averaging time	3600	s
	Standardised toxic threshold concentrations and averaging times	ERPG [1 hr]	Yes	
		IDLH [30 mins]	No	
		STEL [15 mins]	No	
Bund, building and terrain	Terrain and bund definition	Type of terrain for dispersion	Default terrain	
		Type of pool substrate and bunds	No bund	
	Building definition	Release building		
		In-building release?	Outdoor	
		Building wake effect	None	

		Wind or release angle from North	0	deg
		Handling of droplets	Trapped	
		Indoor mass modification factor	3	
Toxic parameters	Indoor toxic calculations	Specify the downwind building type	Unselected	
		Building type (downwind building type)	Buildings\Building type	
	Exposure time data	Set averaging time equal to exposure time	Averaging time equals exposure time	
		Cut-off fraction of toxic load for exposure time calculation	0,005	fraction
		Cut-off concentration for exposure time calculations	0	fraction
	Toxic contours	Number of toxic levels	4	
		Dose levels [ppm^n.min]	130000; 1,3E+06; 1,3E+07; 1,3E+08	
		Probit levels	2; 3; 4; 10	
		Lethality levels	0,001; 0,01; 0,1; 0,99	fraction
Explosion parameters	Explosion method (Consequence calculations only)	Explosion method	Multi-Energy: Uniform confined	
	Ignition	Supply late ignition location	No ignition location	
		Location of late ignition		m
	Vapour liquid method	Use explosion mass modification factor	Yes	

		Explosion mass modification factor	3	
Jet fire	Jet fire method	Selection for jet fire method	Automatic selection / DNV recommended	
	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Rate modification factor	3	
		Jet fire maximum exposure duration	20	s
	Cone model data	Horizontal options	Use standard method	
		Correlation	Recommended	
		Flame-shape adjustment if grounded	Yes	
	Surface emissive power	Calculation method for surface emissive power	Calculate SEP	
		Flame emissive power		kW/m2
		Emissivity fraction		fraction
Pool fire	Result types to calculate	Calculate probit	No	



		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Radiative fraction for general fires	0,4	fraction
		Pool fire maximum exposure duration	20	s
Geometry	Geometry	East	0	m
		North	0	m



### 41.1 Rotura Catastrófica

Catastrophic rupture

2024.09.18.ACL.SPT\SPT\41. Paleta TDI - AEGL3

Tab	Group	Field	Value	Units
Scenario	Release location	Elevation	0	m
		Tank head	0	m
	Fireball emissive power	Use vessel burst pressure	No	
		Vessel burst pressure - gauge		bar
Material	Material	Material characteristics	Toxic and flammable	
		Material to track	TDI	
		Type of risk effects to model	Toxic and flammable	
Discharge parameters	Droplet break-up mechanism	Droplet break-up mechanism - instantaneous	Use flashing correlation	
Dispersion	User-defined dispersion scope (N.B Based on the material to track)	Concentrations of interest	0,51	ppm
		Distances of interest	100; 250; 500	m
		Averaging time for concentrations and distances of interest	ERPG	
		Specify user-defined averaging time	Yes	
		User defined averaging time	3600	s
	Standardised toxic threshold concentrations and averaging	ERPG [1 hr]	Yes	



	times			
		IDLH [30 mins]	No	
		STEL [15 mins]	No	
Bund, building and terrain	Terrain and bund definition	Type of terrain for dispersion	Default terrain	
		Type of pool substrate and bunds	No bund	
Toxic parameters	Indoor toxic calculations	Specify the downwind building type	Unselected	
		Building type (downwind building type)	Buildings\Building type	
	Exposure time data	Set averaging time equal to exposure time	Averaging time equals exposure time	
		Cut-off fraction of toxic load for exposure time calculation	0,005	fraction
		Cut-off concentration for exposure time calculations	0	fraction
	Toxic contours	Number of toxic levels	4	
		Dose levels [ppm^n.min]	130000; 1,3E+06; 1,3E+07; 1,3E+08	
		Probit levels	2; 3; 4; 10	
		Lethality levels	0,001; 0,01; 0,1; 0,99	fraction
Explosion parameters	Explosion method	Explosion method	Multi-Energy: Uniform confined	
	Ignition	Supply late ignition location	No ignition location	
		Location of late ignition		m
	Vapour liquid method	Use explosion mass modification factor	Yes	

		Explosion mass modification factor	3	
Fireball	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Mass modification factor	3	
		Fireball maximum exposure duration	20	s
	Calculation method	Fireball model	Martinsen time varying	
		TNO model flame temperature	1726,85	degC
Pool fire	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction



Parameters

Radiative fraction for general fires

0,4

fraction

Pool fire maximum exposure duration

20

s



#### 41. Palete TDI - AEGL2

Atmospheric storage tank

2024.09.18.ACL.SPT\SPT

Tab	Group	Field	Value	Units
Material	Material	Material	TDI	
		Specify volume inventory?	No	
		Mass inventory	800	kg
		Volume inventory	0,921139	m3
		Material to track	TDI	
	Phase	Specified condition	Temperature and atmospheric pressure	
		Temperature	20	degC
		Pressure (gauge)		bar
		Fluid state	Liquid	
		Liquid mole fraction	1	fraction
Scenario	Pipe dimensions	Pipe length		m
	Release location	Elevation	0	m
		Tank head	0	m
	Direction	Outdoor release direction	Horizontal	
		Outdoor release angle	0	deg
Discharge parameters	Model settings	Atmospheric expansion method	DNV recommended	
		Phase change upstream of orifice?	Disallow liquid phase change only (metastable liquid)	

	Droplet break-up mechanism	Droplet break-up mechanism - instantaneous	Use flashing correlation	
		Droplet break-up mechanism - continuous	Do not force correlation	
Short pipe	Pipe characteristics	Pipe roughness	0,045	mm
	Frequencies	Frequency of bends in pipe	0	/m
		Frequency of couplings in pipe	0	/m
		Frequency of junctions in pipe	0	/m
	Frequencies of valves	Frequency of excess flow valves	0	/m
		Frequency of non-return valves	0	/m
		Frequency of shut-off valves	0	/m
	Velocity head losses	Excess flow valve velocity head losses	0	
		Non-return valve velocity head losses	0	
		Shut-off valve velocity head losses	0	
Time varying releases	Modelling of time-varying leaks and line ruptures	Vacuum relief valve	Operating	
		Vacuum relief valve set point	0,45	bar
	Inventory data for time-varying releases	Tank volume	0,921139	m3
		Tank vapour volume	0	m3
		Tank liquid volume	0,921139	m3
		Tank liquid level	0	m



		Maximum vapour release height		m
		Minimum mass inventory	0	kg
		Maximum mass inventory	1E+09	kg
Dispersion	User-defined dispersion scope (N.B Based on the material to track)	Concentrations of interest	0,083	ppm
		Distances of interest	100; 250; 500	m
		Averaging time for concentrations and distances of interest	ERPG	
		Specify user-defined averaging time	Yes	
		User defined averaging time	3600	s
	Standardised toxic threshold concentrations and averaging times	ERPG [1 hr]	Yes	
		IDLH [30 mins]	No	
		STEL [15 mins]	No	
Bund, building and terrain	Terrain and bund definition	Type of terrain for dispersion	Default terrain	
		Type of pool substrate and bunds	No bund	
	Building definition	Release building		
		In-building release?	Outdoor	
		Building wake effect	None	



		Wind or release angle from North	0	deg
		Handling of droplets	Trapped	
		Indoor mass modification factor	3	
Toxic parameters	Indoor toxic calculations	Specify the downwind building type	Unselected	
		Building type (downwind building type)	Buildings\Building type	
	Exposure time data	Set averaging time equal to exposure time	Averaging time equals exposure time	
		Cut-off fraction of toxic load for exposure time calculation	0,005	fraction
		Cut-off concentration for exposure time calculations	0	fraction
	Toxic contours	Number of toxic levels	4	
		Dose levels [ppm^n.min]	130000; 1,3E+06; 1,3E+07; 1,3E+08	
		Probit levels	2; 3; 4; 10	
		Lethality levels	0,001; 0,01; 0,1; 0,99	fraction
Explosion parameters	Explosion method (Consequence calculations only)	Explosion method	Multi-Energy: Uniform confined	
	Ignition	Supply late ignition location	No ignition location	
		Location of late ignition		m
	Vapour liquid method	Use explosion mass modification factor	Yes	

		Explosion mass modification factor	3	
Jet fire	Jet fire method	Selection for jet fire method	Automatic selection / DNV recommended	
	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Rate modification factor	3	
		Jet fire maximum exposure duration	20	s
	Cone model data	Horizontal options	Use standard method	
		Correlation	Recommended	
		Flame-shape adjustment if grounded	Yes	
	Surface emissive power	Calculation method for surface emissive power	Calculate SEP	
		Flame emissive power		kW/m2
		Emissivity fraction		fraction
Pool fire	Result types to calculate	Calculate probit	No	





		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Radiative fraction for general fires	0,4	fraction
		Pool fire maximum exposure duration	20	s
Geometry	Geometry	East	0	m
		North	0	m



### 41.1 Rotura Catastrófica

Catastrophic rupture

2024.09.18.ACL.SPT\SPT\41. Paleta TDI - AEGL2

Tab	Group	Field	Value	Units
Scenario	Release location	Elevation	0	m
		Tank head	0	m
	Fireball emissive power	Use vessel burst pressure	No	
		Vessel burst pressure - gauge		bar
Material	Material	Material characteristics	Toxic and flammable	
		Material to track	TDI	
		Type of risk effects to model	Toxic and flammable	
Discharge parameters	Droplet break-up mechanism	Droplet break-up mechanism - instantaneous	Use flashing correlation	
Dispersion	User-defined dispersion scope (N.B Based on the material to track)	Concentrations of interest	0,083	ppm
		Distances of interest	100; 250; 500	m
		Averaging time for concentrations and distances of interest	ERPG	
		Specify user-defined averaging time	Yes	
		User defined averaging time	3600	s
	Standardised toxic threshold concentrations and averaging	ERPG [1 hr]	Yes	

	times			
		IDLH [30 mins]	No	
		STEL [15 mins]	No	
Bund, building and terrain	Terrain and bund definition	Type of terrain for dispersion	Default terrain	
		Type of pool substrate and bunds	No bund	
Toxic parameters	Indoor toxic calculations	Specify the downwind building type	Unselected	
		Building type (downwind building type)	Buildings\Building type	
	Exposure time data	Set averaging time equal to exposure time	Averaging time equals exposure time	
		Cut-off fraction of toxic load for exposure time calculation	0,005	fraction
		Cut-off concentration for exposure time calculations	0	fraction
	Toxic contours	Number of toxic levels	4	
		Dose levels [ppm^n.min]	130000; 1,3E+06; 1,3E+07; 1,3E+08	
		Probit levels	2; 3; 4; 10	
		Lethality levels	0,001; 0,01; 0,1; 0,99	fraction
Explosion parameters	Explosion method	Explosion method	Multi-Energy: Uniform confined	
	Ignition	Supply late ignition location	No ignition location	
		Location of late ignition		m
	Vapour liquid method	Use explosion mass modification factor	Yes	

		Explosion mass modification factor	3	
Fireball	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction
	Parameters	Mass modification factor	3	
		Fireball maximum exposure duration	20	s
	Calculation method	Fireball model	Martinsen time varying	
		TNO model flame temperature	1726,85	degC
Pool fire	Result types to calculate	Calculate probit	No	
		Calculate dose	No	
		Calculate lethality	No	
	Radiation levels	Number of input radiation levels	4	
		Intensity levels	5; 7; 12,5; 37,5	kW/m2
		Probit levels	2,73; 3,72; 7,5	
		Dose levels	1,27E+06; 5,8E+06; 2,51E+07	
		Lethality levels	0,01; 0,1; 0,99	fraction



Parameters

Radiative fraction for general fires

0,4

fraction

Pool fire maximum exposure duration

20

s