

Appendix 14C.5 Input Parameter of SAFETI

Default atmospheric temperature_____	20	C
Default atmospheric pressure_____	101325	N/m ²
Relative humidity_____	70	%
Default surface roughness parameter_____	0.1	
Default surface temperature_____	20	C
Atmospheric molecular weight_____	28.966	
Atmospheric specific heat at constant pressure_1004		J/kg*K
Number of wind directions_____	12	
Angular Offset_____	15	degree
Pipe roughness_____	0.0457	mm
Upper volume change limit/step_____	0.5	
Lower volume change limit/step_____	0.15	
Minimum RV diameter ratio_____	1	
Critical pressure greater than flow phase_____	0.34474	bar
Default line length_____	10	m
Default Liquid Fraction_____	1	fraction
Default volume changes_____	2.999999	per h
Maximum release duration_____	6000	s
Minimum temperature allowed_____	-263.15	C
Maximum temperature allowed_____	626.85	C
Maximum pressure allowed_____	1000	bar
Maximum liquid head allowed_____	100	m
Maximum release velocity_____	500	m/s
Range of release angles_____	90.00021	degree
Minimum drop size allowed_____	1e-005	mm
Maximum drop size allowed_____	10	mm
Venting equation constant_____	24.82	N/m ²
Pool minimum thickness_____	5	mm
Surface thermal conductivity_____	2.21	W/m*K
Surface roughness factor_____	2.634	
Surface thermal diffusivity (per second)_____	9.48e-007	m ²
Solar radiation flux_____	0.5	kW/m ²
Continuous Critical Weber number_____	12.5	
Print level_____	132	Columns
Toxics: height for calculation of effects_____	0	m
Toxics: results grid step in X-direction_____	25	m
Toxics: result grid step in Y-direction_____	2.5	m
Atmospheric temp and pressure profile_____	3	
Wind speed profile_____	2	
Temperature reference height (m)_____	10	m
Wind speed reference height (m)_____	10	m
Cut-off height for wind speed profile (m)_____	1	m
Dispersing surface temperature_____	9.85	C
Default dispersing surface type_____	Land	
Default bund surface type_____	Concrete	
Minimum integration step size (distance)_____	0.1	m
Maximum integration step size (distance)_____	100	m
Minimum integration step size (time)_____	0.1	s
Maximum integration step size (time)_____	10	s
Maximum distance for dispersion_____	50000	m
Minimum release velocity for cont. release_____	0.1	m/s
Default minimum release height_____	1	m
Maximum height for dispersion_____	1000	m
Droplet evaporation thermodynamics model_____	2	

Treatment of top of mixing layer_____1
 Quasi-instantaneous transition parameter_____0.8
 Finite Duration Correction Flag_____3
 Multi-component toxic calculation method_____1
 Force cloud to rain out at source_____No
 Disable 'Free Jet' routes?_____Yes
 Accuracy for integration of dispersion_____0.001
 Accuracy for droplet integration_____0.001
 Turbulent Schmidt number_____1
 Jet entrainment coefficient alpha1_____0.11
 Jet entrainment coefficient alpha2_____0.26
 Dense cloud parameter alpha (continuous)_____1.6
 Dense cloud parameter beta (continuous)_____0.015
 Dense cloud parameter gamma (continuous)_____0.05
 Dense cloud parameter k (continuous)_____0.15
 Dense cloud parameter alpha (instant)_____1
 Dense cloud parameter beta (instant)_____0.015
 Dense cloud parameter gamma (instant)_____0.3
 Dense cloud parameter k (instantaneous)_____1.2
 Ratio instantaneous/continuous sigma-y_____1
 Ratio instantaneous/continuous sigma-z_____1
 Drag coefficient between plume and air_____0.15
 Drag coefficient between plume and ground_____1.5
 Impact parameter - plume/ground_____0.8
 Lift-off suppression parameter_____2
 Base averaging time_____60 s
 Expansion zone length/source diameter ratio_____0.01
 Toxics: cut-off rate for pool evaporation_____0.001 kg/s
 Height for concentration output_____0 m
 Minimum vap fract for convection from ground_____0.0015 fraction
 Drop/expansion velocity for inst. release_____0.8 m/s
 Minimum cloud depth_____0.02 m
 Default bund height_____0 m
 Cut-off time for short continuous releases_____5 s
 Expansion energy cutoff for droplet angle_____690 J/kg
 Dense cloud parameter beta (pool vaporisation)_____0.015
 Pool vaporisation entrainment parameter_____1.5
 Distance multiple for full passive entrainment_____2
 Density tolerance for cloud buoyancy_____0.005 kg/m3
 Minimum case frequency considered_____1e-012
 Minimum event probability considered_____1e-012
 Fraction population outdoors, F-N_____0.1
 Fraction population outdoors, risk_____1
 Fraction out killed by toxics_____0.9
 Fraction in killed by toxics_____0.1
 Pop omega factor (per person)_____1e-005
 Multiplying factor for toxic F-N spread_____2
 Probability split for short continuous releases0
 1st Risk contour level_____1 per yr
 2nd Risk contour level_____0.1 per yr
 3rd Risk contour level_____0.01 per yr
 4th Risk contour level_____0.001 per yr
 5th Risk contour level_____0.0001 per yr
 6th Risk contour level_____1e-005 per yr
 7th Risk contour level_____1e-006 per yr
 8th Risk contour level_____1e-007 per yr

9th Risk contour level _____ 1e-008 per yr
10th Risk contour level _____ 0 per yr
1st Risk contour Color _____ Black
2nd Risk contour Color _____ Black
3rd Risk contour Color _____ Black
4th Risk contour Color _____ Black
5th Risk contour Color _____ Black
6th Risk contour Color _____ Red
7th Risk contour Color _____ Black
8th Risk contour Color _____ Black
9th Risk contour Color _____ Black
10th Risk contour Color _____ Black
Line thickness for contours _____ 2
Line type for contours (thickness =1 only) _____ Solid
Minimum risk level _____ 1e-008 per yr
Display risk criteria lines _____ No
Maximum risk criteria line start N _____ 1
Maximum risk criteria line start F _____ 0.001 per yr
Maximum risk criteria line end N _____ 10
Maximum risk criteria line end F _____ 1e-005 per yr
Minimum risk criteria line start N _____ 1
Minimum risk criteria line start F _____ 1e-005 per yr
Minimum risk criteria line end N _____ 10
Minimum risk criteria line end F _____ 1e-007 per yr