BLEVE (RunRow 1)

Study

BLEVE 0xygene 30T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	OXYGEN	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	15	bar
Mass Inventory	2,98E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	29800
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	296,924
Overpressure	0,05	bar	137,394
Overpressure	0,14	bar	72,2942
Overpressure	0,2	bar	57,4033
Overpressure	0,3	bar	44,7743
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	29800
Overpressure	0,05	bar	29800
Overpressure	0,14	bar	29800
Overpressure	0,2	bar	29800
Overpressure	0,3	bar	29800

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE 0xygène 6,6T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	OXYGEN	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	15	bar
Mass Inventory	6600	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical	

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	6600
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	179,648
Overpressure	0,05	bar	83,1275
Overpressure	0,14	bar	43,74
Overpressure	0,2	bar	34,7306
Overpressure	0,3	bar	27,0897
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	6600
Overpressure	0,05	bar	6600
Overpressure	0,14	bar	6600
Overpressure	0,2	bar	6600
Overpressure	0,3	bar	6600

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE argon 18T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	ARGON (ar)	
First Thermodynamic Specification	Temperature given	
Second Thermodynamic Specification	Pressure given	
Temperature	-158	degC
Pressure (Gauge)	9	bar
Mass Inventory	1,8E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	18000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	306,405
Overpressure	0,05	bar	141,782
Overpressure	0,14	bar	74,6026
Overpressure	0,2	bar	59,2362
Overpressure	0,3	bar	46,204
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	18000
Overpressure	0,05	bar	18000
Overpressure	0,14	bar	18000
Overpressure	0,2	bar	18000
Overpressure	0,3	bar	18000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE argon 36,4T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	ARGON (ar)	
First Thermodynamic Specification	Temperature given	
Second Thermodynamic Specification	Pressure given	
Temperature	-151	degC
Pressure (Gauge)	14	bar
Mass Inventory	3,64E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical	

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]	
[Ideal Gas Modeling	Model as real gas]	

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	36400
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	408,808
Overpressure	0,05	bar	189,166
Overpressure	0,14	bar	99,5353
Overpressure	0,2	bar	79,0334
Overpressure	0,3	bar	61,6457
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	36400
Overpressure	0,05	bar	36400
Overpressure	0,14	bar	36400
Overpressure	0,2	bar	36400
Overpressure	0,3	bar	36400

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE azote 43T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	NITROGEN	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	15	bar
Mass Inventory	4,3E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	43000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	352,243
Overpressure	0,05	bar	162,992
Overpressure	0,14	bar	85,7629
Overpressure	0,2	bar	68,0978
Overpressure	0,3	bar	53,116
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	43000
Overpressure	0,05	bar	43000
Overpressure	0,14	bar	43000
Overpressure	0,2	bar	43000
Overpressure	0,3	bar	43000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE azote 6,1T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	NITROGEN	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	15	bar
Mass Inventory	6100	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	6100
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	183,708
Overpressure	0,05	bar	85,0066
Overpressure	0,14	bar	44,7288
Overpressure	0,2	bar	35,5157
Overpressure	0,3	bar	27,7021
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	6100
Overpressure	0,05	bar	6100
Overpressure	0,14	bar	6100
Overpressure	0,2	bar	6100
Overpressure	0,3	bar	6100

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE dioxyde 1,9T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	CARBON DIOXIDE	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	22	bar
Mass Inventory	1900	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	1900
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	143,795
Overpressure	0,05	bar	66,5376
Overpressure	0,14	bar	35,0107
Overpressure	0,2	bar	27,7993
Overpressure	0,3	bar	21,6834
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	1900
Overpressure	0,05	bar	1900
Overpressure	0,14	bar	1900
Overpressure	0,2	bar	1900
Overpressure	0,3	bar	1900

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE dioxyde 15T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	CARBON DIOXIDE	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	22	bar
Mass Inventory	1,5E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	15000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	286,323
Overpressure	0,05	bar	132,489
Overpressure	0,14	bar	69,713
Overpressure	0,2	bar	55,3538
Overpressure	0,3	bar	43,1757
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	15000
Overpressure	0,05	bar	15000
Overpressure	0,14	bar	15000
Overpressure	0,2	bar	15000
Overpressure	0,3	bar	15000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE dioxyde 21T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	CARBON DIOXIDE	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	23	bar
Mass Inventory	2,1E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	21000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	323,986
Overpressure	0,05	bar	149,917
Overpressure	0,14	bar	78,8832
Overpressure	0,2	bar	62,6351
Overpressure	0,3	bar	48,8551
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	21000
Overpressure	0,05	bar	21000
Overpressure	0,14	bar	21000
Overpressure	0,2	bar	21000
Overpressure	0,3	bar	21000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE dioxyde 4T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	CARBON DIOXIDE	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	22	bar
Mass Inventory	4000	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical	

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	4000
			Distance (m) at Overpressure Levels
			Category 1.5/D
Overpressure	0,02	bar	184,294
Overpressure	0,05	bar	85,2777
Overpressure	0,14	bar	44,8714
Overpressure	0,2	bar	35,629
Overpressure	0,3	bar	27,7904
			Used Mass (kg) at Overpressure Levels
			Category 1.5/D
Overpressure	0,02	bar	4000
Overpressure	0,05	bar	4000
Overpressure	0,14	bar	4000
Overpressure	0,2	bar	4000
Overpressure	0,3	bar	4000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE Oxygene 60T

Base Case

CASE Name: Data

User-Defined Data

Material

Material Identifier	OXYGEN	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	15	bar
Mass Inventory	6E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	60000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	374,936
Overpressure	0,05	bar	173,492
Overpressure	0,14	bar	91,2883
Overpressure	0,2	bar	72,485
Overpressure	0,3	bar	56,538
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	60000
Overpressure	0,05	bar	60000
Overpressure	0,14	bar	60000
Overpressure	0,2	bar	60000
Overpressure	0,3	bar	60000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE Propane 33kg

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	PROPANE	
First Thermodynamic Specification	Pressure given	
Second Thermodynamic Specification	Saturated	
Pressure (Gauge)	30	bar
Mass Inventory	33,6	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical	

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]
[Ideal Gas Modeling	Model as real gas]

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	33,6
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	54,425
Overpressure	0,05	bar	25,1839
Overpressure	0,14	bar	13,2512
Overpressure	0,2	bar	10,5218
Overpressure	0,3	bar	8,20695
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	33,6
Overpressure	0,05	bar	33,6
Overpressure	0,14	bar	33,6
Overpressure	0,2	bar	33,6
Overpressure	0,3	bar	33,6

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8

BLEVE protoxyde 37T

Base Case

CASE Name: **Data**

User-Defined Data

Material

Material Identifier	Protoxyde	
First Thermodynamic Specification	Saturated	
Second Thermodynamic Specification	Temperature given	
Temperature	-33	degC
Mass Inventory	3,7E4	kg

Explosion Distances

Minimum Distance	10	m
Maximum Distance	500	m
Distance Step Size	10	m

Vessel/Tank

TankType	Cylindrical	

Location

Northern location of dispersion source	0	m
Eastern location of dispersion source	0	m

Bleve Parameters

[Ground Reflection	Ground Burst]	
[Ideal Gas Modeling	Model as real gas]	

Consequence Results

Explosion effects: BLEVE

			Category 1.5/D
Supplied Flammable Mass		kg	37000
			Distance (m) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	319,26
Overpressure	0,05	bar	147,73
Overpressure	0,14	bar	77,7324
Overpressure	0,2	bar	61,7214
Overpressure	0,3	bar	48,1424
			Used Mass (kg) at Overpressure Levels Category 1.5/D
Overpressure	0,02	bar	37000
Overpressure	0,05	bar	37000
Overpressure	0,14	bar	37000
Overpressure	0,2	bar	37000
Overpressure	0,3	bar	37000

Weather Conditions

		Category 1.5/D
Wind Speed	m/s	1,5
Pasquill Stability		D
Surface Roughness Length		183,156
Surface Roughness Parameter		0,0999999
Atmospheric Temperature	degC	20
Surface Temperature	degC	20
Relative Humidity	fraction	0,8