



Discharge Report

Workspace: Drax - Vent v3 JS

Study: Study

Equipment Item: 1. Dense Phase 138 barg @ 137C to HP Vent

Drax - Vent v3 JS\Study\Drax Pressure Vessel Model\1. Dense Phase 138 barg @ 137C to HP Vent

Dense Phase 138 barg @ 137C

Material	CARBON DIOXIDE (TOXIC)	
East	0	m
North	0	m

Scenario (Short pipe) : Case 4: 2 x Compressor Discharge

Drax - Vent v3 JS\Study\Drax Pressure Vessel Model\1. Dense Phase 138 barg @ 137C to HP Vent\Case 4: 2 x Compressor Discharge

Case 1: Compressor blocked flow @ 1 x 100% 137C @ 138barg

Weather: 5D

INPUT DATA

Inventory data

Mass in vessel	1E+08	kg
Mass in pipe	25355.2	kg

Stagnation Data (upstream end for long pipe)

Initial pressure (gauge)	138	bar
Initial temperature	137	degC
Fixed flow rate	150	kg/s
Fluid state	Pressurized gas	

Scenario data

Pipe scenario type	Line rupture
Phase to be released	Vapour

Pipe data



Pipe internal diameter	1193.6	mm
Pipe length	100	m
Pipe roughness	0.045	mm

Flow control data

Flow controller	Control valve	
Fixed flow rate	150	kg/s

OUTPUT DATA

Release duration	3600	s
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Control valve data (immediately downstream of valve)

Pressure	1.06024	bar
Temperature	45.775	degC
Liquid mass fraction	0	fraction
Velocity	75.8232	m/s

Orifice or pipe exit data (before atmospheric expansion)

Pressure	1.01325	bar
Temperature	45.4236	degC
Liquid mass fraction	0	fraction
Velocity at vena contracta (at exit for pipe releases)	79.2679	m/s

Final Data (after atmospheric expansion)

Temperature	45.4236	degC
Liquid mass fraction	0	fraction
Droplet diameter	0	um
Expanded diameter	1.1936	m
Velocity	79.2679	m/s



Weather: 1.5F

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Weather: 1.5G

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Velocity at vena contracta (at exit for pipe releases)	79.2679	m/s

Final Data (after atmospheric expansion)

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Liquid mass fraction	0	fraction
Droplet diameter	0	um
Expanded diameter	1.1936	m
Velocity	79.2679	m/s



Weather: 1G

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Fixed flow rate	150	kg/s
Fluid state	Pressurized gas	

Scenario data

Pipe scenario type	Line rupture	
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